

OPUS 2

INTERNATIONAL

Horizons Issues - Alan Bates & Others v Post Office Limited

Day 15

June 5, 2019

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1 Wednesday, 5th June 2019
 2 (10.30 am)
 3 MR JASON PETER COYNE (continued)
 4 Cross-examination by MR DE GARR ROBINSON (continued)
 5 MR JUSTICE FRASER: Mr de Garr Robinson, just two things
 6 before we start.
 7 Judgment number 5, which I know you are not
 8 interested or involved in, went out this morning. The
 9 embargo doesn't really apply because it is detailed
 10 reasons for decisions which were made public last week,
 11 but I would like a list of typographic errors by
 12 6 o'clock tomorrow.
 13 And in the interests of transparency, the learned
 14 usher just told me, just before I came in, that he had
 15 been given a message by the witness to give me, and
 16 I said I didn't want to hear the message and I'm not to
 17 take messages from witnesses in that way or indeed in
 18 any way, but I wanted both parties to know that that
 19 exchange had taken place.
 20 MR DE GARR ROBINSON: My Lord, thank you for letting us
 21 know.
 22 MR JUSTICE FRASER: All right.
 23 MR DE GARR ROBINSON: Would your Lordship like to
 24 investigate that question?
 25 MR JUSTICE FRASER: No, I don't intend to do anything at all

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1 but I wanted both of you to be told straightaway.
 2 MR DE GARR ROBINSON: I understand.
 3 Mr Coyne, good morning.
 4 A. Morning.
 5 Q. Yesterday I'm sorry to say we gave you some homework.
 6 A. Yes.
 7 Q. We discussed your claim that bugs are often deferred or
 8 not dealt with at all on a cost benefit basis, do you
 9 remember making that claim?
 10 A. I do.
 11 Q. And I asked you whether you can think of any PEAK other
 12 than the particular PEAK we were looking at that shows
 13 that happening.
 14 A. Yes.
 15 Q. Have you been able to find the handful or so of PEAKs
 16 you referred to yesterday?
 17 A. Yes, I have.
 18 Q. I'm very grateful. Do you have that on a piece of
 19 paper?
 20 A. I do indeed.
 21 Q. Perhaps the sensible thing to do would be at the break
 22 if you could give me the piece of paper and we can copy
 23 it and get it circulated to both sides.
 24 A. Yes.
 25 Q. Would that be acceptable?

2

1 A. Yes, it would.
 2 Q. Thank you.
 3 Yesterday afternoon we were going through some
 4 documents you rely on in your reports with a view to
 5 seeing whether they justified the claims that you made
 6 about them. These are some example documents. I'm
 7 going to do a few more but I'm going to do them as
 8 quickly as I possibly can. First of all can I ask you
 9 to look at paragraph 5.195 of your first report, and for
 10 the transcript it is at {D2/1/107}
 11 A. Yes.
 12 Q. You will see you say there:
 13 "The Post Office cash management proposals contained
 14 in a report dated 4 August 2017 suggests that they were
 15 actively considering ways to improve processes impacting
 16 on many of the issues raised above. It is my opinion
 17 that, whilst the Post Office was looking at ways to
 18 improve cash management, it is also indicative that the
 19 system was generally far from perfect and there existed
 20 a real risk of bugs/errors/defects adversely impacting
 21 on branch accounts despite the processes in place at the
 22 time to prevent this."
 23 A. Yes.
 24 Q. Mr Coyne, if we could go very quickly to that document.
 25 It is at {F/1673/1}. It would take too long for me to

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1 read it out loud. Perhaps I could ask you, Mr Coyne, to
 2 read the first page quickly to yourself.
 3 (Pause)
 4 A. Yes, I have read that.
 5 Q. Then over the page {F/1673/2} we can see "What we
 6 propose to do and why", about a third of the way down
 7 the page:
 8 "We proposed to deliver the following initiatives
 9 through this business case."
 10 First of all there is a reduction of branch cash
 11 holdings by circa £80 million. Perhaps I can ask you to
 12 read that paragraph 1(a). (Pause)
 13 A. Yes.
 14 Q. Then 1(b) is "Improving branch cash declarations" where
 15 they say:
 16 "In conjunction with the above activity, a more
 17 strategic solution will be delivered to reduce surplus
 18 cash in the branch network by £80m (£60m in Sterling and
 19 £20m in foreign currencies) through mandatory and
 20 accurate cash declarations in branch."
 21 A. Yes.
 22 Q. That's talking about trying to get postmasters, when
 23 they make their cash declarations which they have to do
 24 everyday, to make them more accurate, to make sure they
 25 get them right.

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1 A. Yes.
 2 Q. That's explained in the following paragraphs (i), (ii),
 3 "Proactively manage non-conformance" and "Changing time
 4 of cash declaration submission", do you see that?
 5 A. Yes.
 6 Q. Then over the page {F/1673/3}, "Improving operational
 7 design, training and communications to Postmasters to
 8 ensure cash declaration conformance." It is all about
 9 getting the SPMs to do what they already do but to get
 10 them to do it better.
 11 A. Yes.
 12 Q. Then if we go over to page {F/1673/9} of the document
 13 there is what is called a "Benefits Map". It is a table
 14 with a series of solutions on the left-hand side,
 15 a series of impacts and a series of benefits in
 16 different columns along the page.
 17 A. Yes.
 18 Q. Picking it up so we can see the sort of thing it is
 19 dealing with, at page {F/1673/10}, the second box down:
 20 Discrepancy management – at the moment there is a
 21 lack of visibility of any inaccurate cash declaration to
 22 the Postmaster of one of his stock units. If we deliver
 23 a technical change to the cash declaration process this
 24 will send any discrepancy amount to the Local Suspense
 25 account which will give the Postmaster immediate

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1 visibility and will allow faster
 2 corrections/investigations ..."
 3 A. Yes.
 4 Q. What they are suggesting is that the information that
 5 a postmaster gets when doing a cash declaration, some
 6 further information should be added which is immediately
 7 added to his or her suspense account which then impels
 8 him or her to look into the matter more closely, do you
 9 see that?
 10 A. Yes.
 11 Q. That is essentially what I get from this document. It
 12 might be my fault. What I would like to ask you is,
 13 going back to your statement at paragraph 5.195, why is
 14 it you say that this document is indicative that:
 15 "... there existed a real risk of bugs ... adversely
 16 impacting on branch accounts despite the processes in
 17 place at the time to prevent this."
 18 {D2/1/107}
 19 A. Could I have the document back up, please?
 20 Q. Of course. It is {F/1673/10}.
 21 A. Sorry, could we go to the first page {F/1673/1} of that
 22 document. Then go on to the next, please {F/1673/2}.
 23 Onto the next, please {F/1673/3}. And onto the next,
 24 please {F/1673/4}. And onto the next, please
 25 {F/1673/5}. And onto the next, please {F/1673/6}. Next

6

1 one, please {F/1673/7}. And the next one, please
 2 {F/1673/8}. Next one, please {F/1673/9} and again,
 3 please {F/1673/10} and the next one, please {F/1673/11}.
 4 And the next one please {F/1673/12}. And the next
 5 one please {F/1673/13}. Sorry next one, please
 6 {F/1673/14}. And again, please {F/1673/15}. Next one,
 7 please {F/163/16} and again, please {F/1673/17} and
 8 again, please {F/1673/18}.
 9 That's the end of that document, is it?
 10 Q. Yes. So can you tell me what it is you saw in this
 11 document which allowed you to express the opinion that
 12 it indicates that there existed a real risk of bugs
 13 adversely impacting on branch accounts?
 14 A. It is incorrect to find that from that document.
 15 Q. Mr Coyne, you have already accepted, and very fairly and
 16 properly accepted, that as an expert it is important
 17 when relying on documents, particularly in
 18 a document-heavy case where many, many documents are
 19 relied on in a report, you have already accepted the
 20 great importance of making sure any summary of the
 21 document, any explanation as to what the document means
 22 or what it indicates, it is very important to get that
 23 right to assist the court.
 24 You do seem to be looking for problems in documents
 25 which don't support the suggestion that those problems

7

1 exist. Would you accept that?
 2 A. No, I don't. It might be the case that we have
 3 an incorrect reference, there was an incorrect reference
 4 yesterday, but I don't think so in this case because the
 5 context of the paragraph appears to relate to this
 6 document.
 7 Q. You are simply citing documents that don't support the
 8 claims you make about them, aren't you, in this report?
 9 A. This particular example, there appears to be a mistake
 10 here, yes.
 11 Q. Let's move down the page to paragraph 5.198 where you
 12 say -- this is in your report at {D2/1/107}:
 13 "It is clear that in some instances it is not always
 14 apparent whether recurring discrepancies were as a
 15 result of system bugs or the Subpostmaster's own
 16 actions, or other things beyond the control of the
 17 subpostmaster."
 18 Then you have two footnotes {D2/1/108}. Then:
 19 "However the fact that the SSC support team were
 20 unable to assist or identify the root cause does
 21 undermine the credibility of Horizon itself."
 22 Correct me if I'm wrong, but I think what you are
 23 suggesting there is that the two documents you refer to
 24 in the footnote as examples of it not being apparent
 25 whether recurring discrepancies were a result of bugs or

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1 human error, you are saying those documents itself
 2 support the idea that the support team were unable to
 3 identify root causes and in a way that undermines the
 4 credibility of Horizon itself?
 5 A. There is a number of documents, and I agreed with
 6 Dr Worden that often the bugs, errors or defects would
 7 appear as if they were mistakes made by the
 8 subpostmasters.
 9 Q. You say "often". We need to be careful with "often".
 10 A. There are a number of occurrences.
 11 Q. Let's be clear about scale, shall we? I think you have
 12 agreed with Dr Worden that over the lifetime of Horizon
 13 there were something like 3 million branch accounts
 14 generated, yes?
 15 A. Yes.
 16 Q. And I'm taking a branch account as a monthly branch
 17 account. I'm simplifying because of course between 1999
 18 and 2005 they were weekly accounts, weren't they, but
 19 let's just treat them as monthly accounts. So there
 20 were 3 million branch accounts that were produced during
 21 the course of this period and if an error is made, one
 22 error is made, that means it has a branch account
 23 effect, that means that there is a 1 in 3 million chance
 24 of that error affecting a branch account, yes?
 25 A. It is unlikely that one error within the system would

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1 only affect one single branch account.
 2 Q. We will talk about that. It depends on the nature of
 3 the error.
 4 A. It does indeed.
 5 Q. You can't say that, can you, before you know the nature
 6 of the error?
 7 A. No, you can't say that. That's why you need to be
 8 careful.
 9 Q. So when you say this often happened, it gives
 10 an impression, doesn't it? It gives an impression that
 11 suddenly large numbers -- a significant portion of
 12 branch accounts may be unreliable because of something
 13 happening. But if you are talking about a handful of
 14 cases or if you are talking about 20 cases, you are
 15 still only talking about 20 in 3 million. You are
 16 talking about 2 in 300,000. You are talking about a 1
 17 in 50,000 chance, aren't you?
 18 A. I wasn't talking about branch accounts, I was talking
 19 about bugs, errors and defects. Bugs, errors and
 20 defects often appear as if it was a user error rather
 21 than a defect of Horizon and it was that that Dr Worden
 22 and I agreed on.
 23 Q. What we are talking about is what undermines the
 24 credibility of Horizon itself.
 25 A. Yes.

10

1 Q. What I'm suggesting to you is that if there were a dozen
 2 examples of something happening, given the number of
 3 branch accounts that are in existence, and assuming each
 4 of those examples only had one impact, that doesn't
 5 undermine the credibility of Horizon itself, does it?
 6 A. Well, it needs to be considered because it is unlikely
 7 that it would only have an impact on one branch account.
 8 Sorry, let me finish, please. If it is a defect in the
 9 system, the majority of the users, subpostmaster users,
 10 were using that system. So it would be unlikely that it
 11 only impacted one.
 12 Q. I'm very interested in your answer, Mr Coyne, because in
 13 my question I was quite careful to indicate that I was
 14 asking about one error that had one impact, but you
 15 immediately flicked to a situation where you were able
 16 to say, well, there are likely to have been more impacts
 17 in circumstances where I wasn't even specifying what the
 18 error was other than that it didn't have multiple
 19 impacts, and could I suggest to you that you did that
 20 because you have a view, you have a world view, you have
 21 a desire to maximise the impression given of any error
 22 that you identify, do you think that's fair?
 23 A. No, I don't think that's fair. I understood the
 24 question you were putting to me was about this system
 25 rather than a hypothetical scenario where one bug only

11

1 impacts one account.
 2 Q. Let's talk about a remote access instance. The SSC on
 3 one occasion does some remote access which affects one
 4 branch. Do you accept that would only have one branch
 5 impact?
 6 A. Yes.
 7 Q. So if you find one example of remote access which has
 8 one branch impact and you don't know which branch is
 9 affected, and you look at the totality of the branches
 10 in the network and the totality of the monthly accounts
 11 that have been generated in the network over 20 years,
 12 you would have -- if you picked a branch account at
 13 random, you would have a 1 in 3 million chance of
 14 finding a branch that was affected by that remote
 15 access?
 16 A. If that remote access was done correctly it would only
 17 impact one branch, yes.
 18 Q. Thank you. Going back to this example, and if I'm wrong
 19 please tell me because it will save some time. There
 20 are two footnotes, do you see, and they are call logs.
 21 Do you see that? And they are footnotes which are given
 22 as instances where it is not always apparent whether
 23 recurring discrepancies were as a result of system bugs
 24 or the SPM's own action, do you see?
 25 A. Mm.

12

1 Q. You then go on to say the fact that the SSC support team
 2 were unable to assist or identify the root cause
 3 undermines the credibility of Horizon. Are you
 4 suggesting that if I look at those logs I will see
 5 something to justify the inference that you make here --
 6 that you appear to make here -- that the credibility of
 7 Horizon itself is undermined? {D2/1/108}

8 A. The way that the reference is introduced here is "or
 9 other things beyond the control of the Subpostmaster".
 10 {D2/1/107}

11 Q. I'm sorry? I'm not following you and it is my fault,
 12 not yours.

13 A. Sorry, I have just flicked back to read what was before.

14 Q. Yes.

15 A. So these are discrepancies that were:
 16 "... as a result of systems bugs or the
 17 Subpostmaster's own actions, or ... things beyond the
 18 control of the Subpostmaster."
 19 And they should be referenced in these --

20 Q. Right. So these logs indicate that things are happening
 21 which are either the result of system bugs or a result
 22 of SPM action or are beyond the control of the SPM, yes?

23 A. Yes.

24 Q. And do you infer from those examples -- is what you then
 25 say in the last sentence an inference from that? Do you

13

1 say that those examples show -- well, those examples
 2 undermine the credibility of Horizon itself? I think
 3 you would say yes?

4 A. We are in the section of my report here which is
 5 "Opinion Summary", so it is summarising the section
 6 that's come before it.

7 Q. Yes, but you give these two examples here and I would
 8 have thought you did that for a reason.

9 A. It is likely that these are two documents that relate to
 10 this section, but if there was a footnote that I have
 11 already referred to in the section I wouldn't reference
 12 it again here.

13 Q. Yes. So you are suggesting that if we look at the
 14 footnote we will see something that undermines the
 15 credibility of Horizon itself, is that right?

16 A. Yes.

17 Q. Let's have a look then. Could we go to {F/333/1}
 18 please. This is a call log. I think it relates to
 19 Mrs Misra's branch and the date is -- it was opened on
 20 23rd February 2006. So far as I can tell, the relevant
 21 passage that you would rely on is at the bottom of the
 22 page where it says:
 23 "OTI close Monday 27 February."
 24 Do you see that?

25 MR JUSTICE FRASER: I think we are going to need to increase

14

1 the size.

2 MR DE GARR ROBINSON: Yes, it is very small. Could we go to
 3 the bottom and increase the size, please?

4 MR JUSTICE FRASER: I think for present purposes that's
 5 probably magnified enough at least so I can read it.

6 MR DE GARR ROBINSON: Let me read it:
 7 "No transaction date and time was provided for this
 8 action using current date and time. Update by Anne
 9 Chambers: Category 94 -- Final -- Advice and guidance
 10 given."
 11 Stopping there. We have seen a lot of
 12 Anne Chambers' work, haven't we?

13 A. Yes, we have.

14 Q. My impression is that she is quite a professional
 15 operator. Would that be your impression as well or
 16 would you disagree with that?

17 A. I don't think I could give a view on that.

18 Q. Very good.
 19 "I have checked very carefully and can see no
 20 indication that the continuing discrepancies are due to
 21 a system problem. I have not been able to pin down
 22 discrepancies to individual days or stock units because
 23 the branch does not seem to be operating in a
 24 particularly organised manner. In particular I have
 25 noted 1. There are 6 stock units for this 3 counter

15

1 branch, which seems a bit excessive. 2. The loss in
 2 euros in TP 9 appears genuine - the declared quantity
 3 was 4000 fewer than the system expected. It is not clear
 4 from the information above whether anyone found out why
 5 this happened (there were several rem outs, and a rem
 6 in, on 23rd Dec - did the pouches contain the declared
 7 number of euros?). 3. Stock is sometimes transferred
 8 out of a stock unit where it is not held. In particular
 9 there were several transfers out of stock unit SMI in TP
 10 10. At the end of the period the stock figures were
 11 corrected back up to zero via Adjust Stock. This gave a
 12 gain of over £2000 in SMI. Equivalent negative stock
 13 adjusts in AA gave a corresponding loss in AA. 4. I am
 14 not confident that the stock declarations are always
 15 correct e.g. at the end of TP 9 there was a declared
 16 holding of 5 £20 PO phonecards in the branch, then a few
 17 days later 20 were transferred from one SU to another.
 18 None were remmed in until a week after that. 5. The
 19 branch had declared 27 £20 Argos vouchers at the end of
 20 TP 9. Branches have now been instructed to rem out this
 21 product; they remmed out 17 and adjusted stock to
 22 account for the remaining 10 (so did they really only
 23 have 17 to start with?). This has correctly caused a
 24 loss of £200 in SU AA. 6. Lottery instant sales are
 25 entered onto the system as a single transaction every 10

16

1 days or so. 7. Stock units SMI and AA rolled over with
 2 non-zero cheque holding. This may be to do with how the
 3 discrepancies have been accounted for but I do not
 4 really understand this (the total is greater than the
 5 sum of the branch adjustments for TP 9 and 10). I
 6 recommend that this call is passed back to NBSC tier 2
 7 for further investigation, since there is no evidence
 8 that the discrepancies are being caused by a system
 9 problem. If you want the above information in an email,
 10 let me know."

11 Now, Mr Coyne, what I would like to suggest to you
 12 is that what that shows is that Anne Chambers did a very
 13 thorough job, went through the figures very carefully,
 14 saw there was a branch that was operating in some sort
 15 of chaos, forms the clear view that there's no system
 16 problem, but says: there are these questions, it should
 17 go back to NBSC to investigate. And I would like to ask
 18 you why you think that that story there, told in that
 19 box, does undermine the credibility of Horizon itself?

20 A. I think it is that when this call is later advanced, it
 21 is discovered that there was a system problem.

22 Q. Perhaps you would go to the second page because if
 23 that's the case I have missed it but I'm happy to be
 24 corrected. {F/333/2}. What I get is what's in the
 25 final entry, Mr Coyne:

17

1 "Call close by David Dawe: pm was getting
 2 discrepancy's ssc have investigated and advised that the
 3 NBSC take a 2nd look at this as the office stock units
 4 appear to be in a mess."

5 But please don't let me stop you reading the whole
 6 thing.

7 (Pause)

8 A. But what we do see from that is that Anne Chambers isn't
 9 able to say what has actually happened with the
 10 discrepancy that has been seen. She is unable to
 11 determine whether it is the user that has caused that or
 12 whether there is a potential problem with the system.

13 Q. So let me get this straight. Let me give you
 14 a hypothetical case. A branch is being run in a mess
 15 and things are being reported that are wrong. So things
 16 are being remmed out from a particular stock unit that
 17 aren't in the stock unit, they are declaring cash that
 18 they don't have, they are declaring they have stock that
 19 no longer exists, there are inconsistent declarations of
 20 stock on different days. It is a mess. Clearly lots of
 21 erroneous figures are being entered into the system.
 22 There is no way that someone in the SSC is going to be
 23 able to correct those errors, only the subpostmaster
 24 will know what the true position is on the ground.
 25 Correct?

18

1 A. Yes.

2 Q. So in that situation, the SSC comes in and looks to see
 3 if there's a system problem and they can't find one.
 4 Now are you saying -- that scenario is inevitable, isn't
 5 it? It doesn't matter how good the system would be; you
 6 could have the computer from the Star Trek Enterprise.
 7 The point is that in that scenario the SSC would not be
 8 able to say that this has happened or that has happened,
 9 because the data they have got is too chaotic, correct?

10 A. Yes.

11 Q. So I would like to suggest to you, Mr Coyne, that the
 12 sense one gets from these logs is that's what was
 13 happening with this branch.

14 A. Yes.

15 Q. So why do you say that this log undermines the
 16 credibility of Horizon itself?

17 A. No, I agree that this log in itself doesn't.

18 Q. I don't want to take any time up, but are you suggesting
 19 that the second log, if I go to the second log, I'm
 20 perfectly happy to do it, would show a different
 21 picture?

22 A. I would have to check it. I believe it shouldn't but
 23 I'm happy to go to it.

24 Q. I do not think I have time. Lets move on.

25 What I would like to do now is to talk about

19

1 a document on which you have built one of the major
 2 themes in both your reports, which is the reliability of
 3 Credence, and as we know that is one of the management
 4 information systems used by Post Office. It is the
 5 Post Office system, isn't it? And it uses it for
 6 various purposes, including it is one of the systems it
 7 uses when deciding whether to issue a transaction
 8 correction, yes?

9 A. Yes.

10 Q. One of the themes in your reports is that it shouldn't
 11 be used for the purpose of making those decisions, ARQ
 12 data actually should be used, is that right?

13 A. Yes.

14 Q. That is your considered view?

15 A. Yes.

16 Q. And on that basis you rely on a document which is
 17 called -- which has become called the Helen Rose report,
 18 I'm not sure it is a report, but it is a five-page
 19 document produced by Helen Rose who was a fraud analyst
 20 at the Post Office in June 2013.

21 Before we go to it, can we just agree the basic
 22 facts. I presume you looked at the report and the
 23 associated facts quite carefully so you are familiar
 24 with the case?

25 A. Yes.

20

1 Q. It related to an incident at the Lepton branch of which
2 the SPM was a Mr Armstrong, is that right?
3 A. Mm.
4 Q. A bill payment transaction had failed at his branch when
5 the system went down, correct?
6 A. Yes.
7 Q. And it was a cancellable transaction, correct?
8 A. Yes.
9 Q. So he completed the transaction, he took money from the
10 customer, and he did that via -- the customer had
11 actually got cash out from a Lloyds TSB cash withdrawal
12 but that's by the by because that didn't fail. So he
13 completed the transaction and he took money from the
14 customer. Because the system went down he had to log
15 back in, and when he logged back in the recovery process
16 automatically reversed the cancellable transaction,
17 correct?
18 A. Yes.
19 Q. And that's how the system should operate with
20 cancellable transactions, correct?
21 A. Yes.
22 Q. And that left him with a surplus in his branch, didn't
23 it?
24 A. Likely, yes.
25 Q. Because he had been given cash by the customer which was

21

1 to be used to pay -- I think it was a phonecard or
2 something like that. It was a BT bill payment, sorry.
3 But of course because the transaction had failed the BT
4 bill payment was not made, yes?
5 A. Well, it depends at what point the counter failed and
6 that's what the recovery process does, it determines how
7 far the transaction got.
8 Q. Yes. When you agreed with me a moment ago that it was
9 a cancellable transaction, what that means is -- there
10 are two kinds of transactions, aren't there? There is a
11 recoverable transaction and the opposite of
12 a recoverable transaction is a cancellable transaction,
13 correct?
14 A. It is often called nonrecoverable.
15 Q. But the technical name is cancellable?
16 A. Yes.
17 Q. Could you explain what the difference is between those
18 two transactions, why a transaction is cancellable or
19 recoverable?
20 A. It depends on whether it requires an interaction with
21 any of the banking organisations or not. Often with
22 things like credit cards or debit card transactions
23 a call will be placed to the bank to check the money and
24 then if the process continues all the way to the end the
25 money being requested. If there is a failure in the

22

1 counter at some point through that process then Horizon
2 has got to understand whereabouts it failed and then
3 effectively unwind that process.
4 Q. The difference is where a third party system is
5 involved, isn't it?
6 A. A third party system, yes.
7 Q. So where you are doing a transaction at the counter
8 there are a number of steps you take and if the
9 transaction involves, I don't know, a payment being made
10 from a bank, during the course of typing in the
11 transaction hundreds of messages are passing back and
12 forth both to the BRDB to record the nature of the
13 transaction that's being keyed in and also to the
14 financial institution, and the two institutions marry up
15 and the financial institution says I recognise you, and
16 the counter says I want you to make this payment, and
17 the financial institution says I accept it, and so on.
18 A. Yes.
19 Q. Then at the end of that process the postmaster closes
20 the stack.
21 A. Yes.
22 Q. He enters the transaction into the system. I think the
23 technical term is he commits the basket to the system?
24 A. Yes.
25 Q. And that's the moment at which the basket enters his

23

1 branch accounts, is that correct?
2 A. Yes.
3 Q. Everything I have said so far is correct, is it?
4 A. It is, yes.
5 Q. Thank you. The problem is that inevitably the moment at
6 which the transaction is committed to -- the basket is
7 committed to the system is different in time from the
8 moment at which the payment instruction is accepted by
9 the bank, yes?
10 A. Yes.
11 Q. So what happens, in a relatively rare situation you can
12 have the bank accepting an instruction to make a payment
13 and making the payment, then the system breaks down, and
14 then that means that the transaction is not entered into
15 the branch account?
16 A. That is correct, yes.
17 Q. So you have a discrepancy between what has happened in
18 the real world, which is that a payment has been made by
19 the bank, yes?
20 A. Yes.
21 Q. And you have the fact that that payment is not recorded
22 in the branch accounts because the system has collapsed
23 before the basket has been closed -- I should say
24 committed, yes?
25 A. Yes.

24

1 Q. Do you mean collapsed? You said the system collapsed.
 2 MR DE GARR ROBINSON: It is a very loose form of --
 3 your Lordship understands what I mean.
 4 But the system goes down. It could be a comms
 5 problem, it could be a systems problem, it could be
 6 someone has dug up the phone line outside.
 7 A. A power problem.
 8 Q. It could be a thousand kinds of problem, yes?
 9 A. It could be lots. I'm not sure thousands --
 10 Q. I'm sorry, it is fair that you should make that
 11 clarification. I am not trying to commit you to that
 12 number.
 13 So in that situation any system, let's forget about
 14 Horizon, again we have got a Star Trek brilliant system,
 15 any system is going to have to manage that problem,
 16 isn't it, in some way?
 17 A. Yes.
 18 Q. Because there are always going to be situations where
 19 what's happened in the real world may not actually
 20 accord with what's recorded in the accounts?
 21 A. That is right. Frankly what Horizon does, rather than
 22 make the assumption that the transaction completed
 23 successfully, it effectively re-looks at the elements of
 24 the transaction to see how far it got, to see whether it
 25 should roll back or roll forward.

25

1 Q. Yes, because in the course of the transaction being
 2 keyed in, before the basket is committed, all the
 3 elements of the transaction are actually recorded --
 4 let's talk Horizon Online -- they're all recorded in the
 5 BRDB but they are in different tables of the BRDB. So
 6 they are securely kept, held somewhere, for the moment
 7 in time in which the transaction is committed to the
 8 audit store -- I shouldn't say the audit store -- to the
 9 database, so they are held there but they are held in
 10 abeyance. Then when something goes wrong the
 11 transaction isn't committed to the database and the
 12 tables which contain the data relating to the
 13 transaction, and some other tables, they then throw up
 14 a flag saying this is a recoverable transaction. And
 15 what that means is that the transaction appears -- it
 16 has been done in the real world but it hasn't entered
 17 the stacks, it hasn't entered the branch accounts, so it
 18 has to be looked at to see what needs to be done, is
 19 that correct?
 20 A. Yes.
 21 Q. And that's how the Horizon system was designed to work,
 22 correct?
 23 A. Yes. Just in pure technical terms, the raising of the
 24 flag, once the transaction is started that's recoverable
 25 a flag or a stake is put in the database to say we are

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1 starting a recoverable transaction. Then at the end of
 2 it, once it is committed, the flag is taken down.
 3 Q. Exactly.
 4 A. So when the counter restarts it has a look to see
 5 whether there is any recoverable transaction flags
 6 there. If there are, it has to deal with that before it
 7 boots up.
 8 Q. Exactly. And this isn't strictly relevant to Helen Rose
 9 but just to be clear, in that scenario, given the way
 10 the system is designed, indeed given the way any system
 11 would have to be designed, there would then have to be
 12 an enquiry as to what happened on the ground, wouldn't
 13 there?
 14 A. By the humans interacting?
 15 Q. Yes. In other words, let's take this example, the
 16 Post Office would have to find out from the postmaster
 17 whether he accepted the £76, wouldn't he? They would
 18 need to know whether the money was accepted or whether
 19 it wasn't, and only then would they know what they
 20 should do in relation to this transaction?
 21 A. Typically a counter would know whether the transaction
 22 or whether the monies have been handed over because one
 23 of the last things that you would do at the end of the
 24 transaction would be -- it is called firing, you would
 25 fire the cash drawer and the cash drawer would come

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1 open.
 2 Q. You are not suggesting it wouldn't have to be checked.
 3 You wouldn't assume that the money had passed hands, you
 4 would need to know whether it had. You would need to
 5 ask the postmaster, wouldn't you, in order to work out
 6 what, if anything, needed to be done to restore the
 7 branch to balance?
 8 A. But it is a worthwhile check to do, to find out whether
 9 cash has been handed over or not.
 10 Q. Yes, because the system on its own doesn't know whether
 11 cash has passed hands, does it? The system doesn't tell
 12 you. It doesn't photograph the passing of cash from one
 13 to the other, there is no way in which the system would
 14 ever know that?
 15 A. No. It would know whether it has displayed a message on
 16 screen to say pay X amount and it would know whether the
 17 cash drawer has been opened or not, but it wouldn't know
 18 if physically that instruction had been followed, yes.
 19 Q. So it might be, for example, the message is flashed up
 20 on the screen and then the system crashes, and if you
 21 were at the Post Office or the SSC you would not be able
 22 to tell, looking at the data you have, what had happened
 23 and you would have to make an enquiry. And it would be
 24 a good practice, generally speaking, to make that
 25 inquiry before deciding whether any correction needs to

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1 be made or not, yes?
 2 A. Yes.
 3 Q. Thank you. So let's go back to Lepton. This was
 4 a cancellable transaction because there hadn't been
 5 an immediate instruction for a payment to be made by
 6 a financial institution. I think you will accept with
 7 me that when that happens it is not in the recoverable
 8 category, it is in the cancellable category, yes?
 9 A. I would have to check that by looking at the report.
 10 I can't recall precisely what the --
 11 Q. Okay. You agreed with me earlier that it was
 12 a cancellable transaction?
 13 A. I believe so, yes.
 14 Q. Which means that the standard process with -- in fact
 15 the universal process with cancellable transactions is
 16 that the transaction is then removed from the system.
 17 The assumption is made that the transaction should not
 18 be done. Then if there is any problem that can be
 19 handled by manual processes. Again you can ask the
 20 branch whether in actual fact, although we have
 21 cancelled the transaction, have you actually received
 22 some money? That's how the system works, correct?
 23 A. Mm.
 24 Q. And that is how the system worked in this case, didn't
 25 it?

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1 A. In this case there was a dispute between whether the
 2 system itself said there was the reversal or whether the
 3 human, the subpostmaster, chose to do the reversal or
 4 not. And the indicator within Horizon was that it was
 5 the subpostmaster that did the reversal but it was found
 6 that that was incorrect and it was actually Horizon.
 7 Q. So you are saying Credence said it was the postmaster
 8 that did it but in actual fact it was the system that
 9 did it. And that's your considered view?
 10 A. I believe that's what the document reflects, yes.
 11 Q. Let's pick this up in your second report -- one other
 12 thing I should mention, actually, is that in this
 13 process, the way the system is supposed to operate, when
 14 there is a cancellable transaction like that, or indeed
 15 even a recoverable transaction, receipts should be
 16 printed by the system to allow the postmaster to know
 17 what's happened and what he or she should be doing, yes?
 18 A. Yes. The process should be that receipts are printed.
 19 There are other reports elsewhere that suggest that that
 20 is not always the case, but that is certainly what the
 21 process should be.
 22 Q. Let's look. Can we go to page 117 of your second report
 23 which is {D2/4.1/1}. This is paragraph 4.78. It is all
 24 under the heading "Failed Reversals" {D2/4.1/117}.
 25 You say at 4.78:

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1 "As dealt with above at paragraph 4.62, the excerpt
 2 from Gareth Jenkins within the Helen Rose report
 3 indicates that there was no evidence of the creation of
 4 a disconnected session receipt, unless further diagnosis
 5 (which I do not believe has been disclosed to me) has
 6 since been conducted and reviewed by Angela Van Den
 7 Bogerd. I have reported on what was diagnosed
 8 contemporaneously by Mr Jenkins, particularly ..."
 9 Then you quote a piece of text that I won't read but
 10 I invite you to read.
 11 (Pause)
 12 A. Yes.
 13 Q. So what you are suggesting there is that the Helen Rose
 14 report indicates that Horizon didn't produce a
 15 disconnected session receipt in branch, yes?
 16 A. Yes.
 17 Q. If we go back to page 113, {D2/4.1/113} and look at
 18 paragraph 4.63, you are talking about Credence now, you
 19 are talking about the Helen Rose report. You say:
 20 "Therefore, the contemporaneous evidence is
 21 consistent with the determination that Horizon initiated
 22 the reversal, NOT the Subpostmaster."
 23 A. Yes.
 24 Q. "In my first report I had explained (at paragraph 4.61)
 25 that the Subpostmaster had not reversed the transaction,

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1 this had been a reversal generated by the system as part
 2 of recovery."
 3 A. Yes.
 4 Q. "Credence data appeared to show (or was interpreted as)
 5 being a reversal initiated by the Subpostmaster. This
 6 difference of position arose from Post Office looking at
 7 Credence data and Gareth Jenkins of Fujitsu looking at
 8 audit data and system logs."
 9 A. Yes.
 10 Q. "This demonstrates two positions", you say:
 11 "(a) Credence data, most commonly used by Post
 12 Office for their investigations, is either wrong or does
 13 not provide sufficient information to complete the full
 14 picture; and
 15 "(b) It was only after the Subpostmaster involved an
 16 external forensic accountant that the Audit data was
 17 requested."
 18 The external forensic accountant, are you aware of
 19 this, what that's a reference to, Second Sight?
 20 A. In the documents that I have seen, the call logs,
 21 I think the subpostmaster says "I have got a forensic
 22 accountant involved", I do not think he mentions --
 23 Q. You are not aware it was Mr Warmington from
 24 Second Sight?
 25 A. I wasn't aware.

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1 Q. Fine, I will not ask you any more about that.
 2 Then if we go back to what you said about this in
 3 your first report. Can we go to {D2/1/67} please. Are
 4 you there? Paragraphs 5.49 to 5.50:
 5 "The document ('Helen Rose report') refers to an
 6 incident where a Transaction Correction was issued which
 7 the Subpostmaster duly settled financially despite the
 8 Subpostmaster denying conducting the reversal."
 9 5.50:
 10 "The report appears to show that the material that
 11 Post Office initially reviewed did not identify that it
 12 was the system that initiated the reversal rather than
 13 the Subpostmaster and therefore the Transaction
 14 Correction making the Subpostmaster liable was issued in
 15 error. Since this is effectively a failure to
 16 appropriately reduce the risk of error this is also
 17 dealt with further ..."
 18 So here you are saying -- well, let's move on
 19 actually to page {D2/1/101}. You have some more points
 20 to make about Credence at page 101. Picking it up at
 21 paragraph 5.175 --
 22 A. Sorry, are we in the second report now?
 23 Q. The first report {D2/1/101}. Picking it up at 5.175,
 24 you say:
 25 "The report regarding the reversal dispute conducted

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1 by Helen Rose states:
 2 "On looking at the Credence data, it clearly
 3 indicates that the reversal was completed by ...
 4 (Subpostmaster) at 10:37 ... and was reversal indicator
 5 1 (existing reversal) and settled to cash."
 6 {D2/1/102}
 7 "5.176:
 8 "It is therefore relevant to question why Post
 9 Office were using Credence data to initially investigate
 10 disputed transactions."
 11 Stopping there. Your contention is that they should
 12 not use Credence to initially investigate, is that
 13 right?
 14 A. It would seem that you can use Credence to conduct
 15 a cursory investigation but you have to go back to the
 16 full logs to get the full picture. Because if there's
 17 a different picture being given by Credence to that of
 18 the logs, then ultimately both can't be correct.
 19 Q. It is just your use of the word "initially". Is there
 20 any significance attached to that? That's not what you
 21 should look at even first, you should look at something
 22 else first, should you?
 23 A. No, I mean, it depends what depth of investigation you
 24 are going to look. If it is just a cursory
 25 investigation then Credence might be okay for that.

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1 Q. I see, thank you.
 2 5.176:
 3 "Whilst it is evident that it was understood by Post
 4 Office in this instance to request assistance from
 5 Fujitsu for further material to investigate this dispute
 6 there appears to be further issues with the data
 7 provided by Fujitsu."
 8 5.177:
 9 "Observations of the disclosures illustrates that
 10 the initial report ..."
 11 That is the Helen Rose report, right?
 12 A. Mm.
 13 Q. " ... states 'a transaction at 10.42', whereas the
 14 Credence data file shows 10.32 with the reversal at
 15 10.37."
 16 Stopping there. You are giving another example of
 17 Credence giving wrong data, yes?
 18 A. There appears to be a difference between the times that
 19 are recorded, yes.
 20 Q. "Fujitsu's data states the transactions are at 9.32 and
 21 9.33 and reversal timestamp is 9.37."
 22 You are suggesting that is a further problem with
 23 Credence, that it is actually an hour out as compared
 24 with audit data, yes?
 25 A. I actually say that in the next paragraph, yes.

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1 Q. Then you say:
 2 "5.178:
 3 "Whilst this hour difference between the data sets
 4 might be easily traceable for Fujitsu, it is not clear
 5 how easily it would have been to investigate issues
 6 where the Subpostmaster was not sure of what time things
 7 went on erroneously in the system ..."
 8 A. Yes.
 9 Q. So what you are doing here, Mr Coyne, is that you are
 10 making the following claims: first of all,
 11 a disconnected session receipt wasn't printed when it
 12 should have been, correct?
 13 A. That is what the report says, yes.
 14 Q. Secondly, that Credence data initially relied on by
 15 Post Office was misleading, misleading as to who
 16 reversed and misleading as to time, yes?
 17 A. Yes.
 18 Q. And, thirdly, the problems with Credence led to
 19 an erroneous transaction correction, inflicting a false
 20 loss on the subpostmaster, correct?
 21 A. Whether there was an erroneous transaction correction or
 22 not is not clear, it depends what decision was taken
 23 based on the evidence, based on either the Credence or
 24 the ARQ log.
 25 Q. We can go back to your first report, paragraph 5.50, but

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1 my understanding of what you said there was the
 2 Post Office wasn't liable and it was a false transaction
 3 correction. So that is your view, isn't it, that you
 4 formed on the basis of reviewing the Helen Rose report
 5 and other documents?
 6 A. If Post Office had have continued to use the Credence
 7 data, then the transaction correction would have been
 8 issued in error.
 9 Q. You actually say, reading again from paragraph 5.50:
 10 "... and therefore the transaction correction making
 11 the Subpostmaster liable was issued in error." {D2/1/67}
 12 A. Yes.
 13 Q. You are making a claim as to what happened on the basis
 14 of the documents you have seen?
 15 A. Yes.
 16 Q. And is that your view?
 17 A. Yes.
 18 Q. Thank you. Let's now go to Ms Rose's report. It is at
 19 {F/1082/2}, pick it up at page 2. There's the
 20 "Executive Summary" and the first paragraph has the time
 21 10.42 that you referred to. You see that?
 22 A. Yes.
 23 Q. The report says:
 24 "The branch was issued with a Transaction Correction
 25 for £76.09, which they duly settled; however the

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1 postmaster denial reversing this transaction ..."
 2 Under "Reviewing the Data", let's read that:
 3 "On looking at the Credence data, it clearly
 4 indicates that the reversal was completed by JAR001
 5 (postmaster) at 10:37 04/10/2012 and was reversal
 6 indicator 1 (existing reversal) and settled to cash. An
 7 existing reversal is where the session number/Automated
 8 Payment number has to be entered to reverse the item.
 9 "The Fujitsu logs were requested for this branch,
 10 but whilst waiting for these to arrive communications
 11 took place with Gareth Jenkins at Fujitsu for more
 12 details to gain an understanding what had occurred at
 13 this branch."
 14 A. Yes.
 15 Q. Now, she says the Credence data clearly indicates that
 16 the reversal was completed by the subpostmaster. But it
 17 is fair to say, isn't it, that the Credence data did not
 18 actually say that the subpostmaster had initiated the
 19 reversal, correct?
 20 A. Well, certainly whoever constructed this report said it
 21 clearly indicates that the reversal was completed by the
 22 user.
 23 Q. She's inferring from the facts that she sets out there
 24 that the reversal itself must have been initiated by the
 25 subpostmaster, isn't she?

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1 A. That's what she is saying. She's saying "it clearly
 2 indicates".
 3 Q. It is an interpretation of the data she has got. There
 4 isn't a box in Credence -- she's not saying there is
 5 a box in Credence saying this was initiated by the
 6 subpostmaster, it is that the reversal has a postmaster
 7 reference attached to it and a reversal indicator 1, and
 8 she infers from that, she construes that, she interprets
 9 that as indicating that the reversal was specifically
 10 undertaken by the subpostmaster. Would you accept that
 11 what we are talking about here is a mistake in
 12 interpretation?
 13 A. There's nothing here to suggest there is a mistake in
 14 interpretation to me. The words on the page say "it
 15 clearly indicates that the reversal was completed" by
 16 the subpostmaster.
 17 Q. I would like to suggest to you, Mr Coyne, that what this
 18 suggests is she looked at the three points of
 19 information and she inferred from those three points of
 20 information that the reversal was undertaken by the
 21 postmaster, but the Credence system doesn't specifically
 22 say that. She has made a mistake because she has put
 23 two and two together and made four, in fact five?
 24 A. I think that really is a matter for Helen Rose.
 25 Q. Would you accept it is possible?

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1 A. It is possible that she was mistaken, are you asking,
 2 sorry?
 3 Q. If we go over --
 4 A. Sorry, I might have given the wrong answer. Are you
 5 asking me is it possible --
 6 Q. Are you suggesting that Credence did specifically state
 7 that the reversal was undertaken by the postmaster
 8 himself, rather than a reversal happened when the
 9 postmaster was logged on. In fact it was the postmaster
 10 logging on that caused the reversal to happen?
 11 A. I haven't looked at Credence myself in order to validate
 12 what the author of this report saw. I have gone off
 13 what this paragraph says, that Credence clearly
 14 indicated that a reversal took place by the user.
 15 That's what I have based my evidence on.
 16 Q. I understand, but I suggest to you that what you have
 17 read here is consistent with the view that what happened
 18 is Ms Rose misunderstood the significance of the items
 19 of information that were on Credence and formed the a
 20 mistaken conclusion?
 21 A. I agree that that is possible, yes.
 22 Q. Thank you. Then if we go over to page 3 of the report
 23 {F/1082/3}. For completeness I should say that on
 24 page 1 you will see that there are two -- this report,
 25 it is not really a report. It is curious that it has

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1 some questions and then some answers that are provided
 2 by Mr Jenkins by e-mail and those answers are there in
 3 blue.
 4 MR JUSTICE FRASER: I think you mean page 2. We have gone
 5 to page 1 which is literally just the facing page.
 6 MR DE GARR ROBINSON: I'm so sorry, I meant page {F/1082/2}.
 7 I'm sorry.
 8 So there are passages in blue which are quotations
 9 from emails she has received. The first email is on the
 10 first page. And the middle paragraph, just to be clear,
 11 this is the paragraph you relied on. About halfway down
 12 it says:
 13 "The fact that there is no indication of such a
 14 receipt in the events table suggests the counter may
 15 have been rebooted and so perhaps may have crashed in
 16 which case the clerk may not have been told exactly what
 17 to do."
 18 I presume that was the basis upon which you said
 19 there were no receipts printed for this transaction,
 20 correct?
 21 A. I think there is a more definitive statement than that
 22 later on in this document. This is Gareth Jenkins
 23 suggesting that there wasn't a receipt.
 24 MR JUSTICE FRASER: Is the blue Mr Jenkins?
 25 A. Yes, I believe so, my Lord.

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1 Yes, it is the paragraph below where it says:
 2 "The reversal was due to recovery [and] was not
 3 an explicit reversal [made] by the clerk".
 4 Q. What you are saying is this affirmatively states that no
 5 receipt was printed for the postmaster to tell him what
 6 to do. That's what I'm asking you about, remember.
 7 A. Well Mr Jenkins here, who has investigated it, has said
 8 from the logs that there wasn't a disconnected session
 9 receipt.
 10 Q. And it was on the basis of that text, you said that in
 11 your report?
 12 A. Yes.
 13 Q. You remember, one of the claims you made in your report
 14 is that there was no session receipt printed?
 15 A. Yes.
 16 Q. If we go over the page, please, there was a second email
 17 that comes a couple of weeks later, at the top of the
 18 page {F/1082/3}. It is the paragraph beginning:
 19 "The files 4 to 25th October ..."
 20 Do you see that?
 21 A. Yes.
 22 Q. If we can miss out the sentence that talks about those
 23 files. The next sentence says:
 24 "Also row 70 of events 4 to 25 Oct ... shows that
 25 session 537803 ... has been recovered and this event has

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1 the same timestamp as the Reversal Session. Also row 71
 2 of Events 4 to 25 Oct ... shows that a receipt was
 3 generated from the session 537805 (not explicitly, but
 4 it was the only session at that time)."
 5 So you will see that on the very next page,
 6 Mr Jenkins is saying actually the receipt was printed
 7 after all?
 8 A. No, I think that's talking about a receipt for something
 9 else. It is not a disconnected session receipt, I do
 10 not think.
 11 Q. Are you suggesting that -- so he is talking about
 12 a completely different -- why would he be talking about
 13 a completely different session in this -- or rather why
 14 would she, Ms Rose, be quoting in this email
 15 a discussion about a completely different session?
 16 A. They are actually talking about two sessions here.
 17 There is the session ending in 803 and the session
 18 ending in 805.
 19 Q. Yes. Perhaps I could read the next sentence.
 20 A. Yes.
 21 Q. "This receipt would have told the user that a Rollback
 22 had taken place (but the logs don't make that
 23 explicit)."
 24 Is that clear enough for you, Mr Coyne? What
 25 Mr Jenkins is saying here is that a receipt was printed

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1 showing that the transaction had been rolled back,
 2 correct?
 3 A. Right, so what Mr Jenkins is saying here is that the
 4 logs were missing the record that the receipt was
 5 printed but he believes the receipt was printed.
 6 Q. Yes. So your claim in your report that the report shows
 7 that the receipt was not printed, that claim is wrong,
 8 isn't it? You hadn't read this document properly, had
 9 you?
 10 A. Well, the situation here is that we have got to -- in
 11 order for this scenario that you are putting to me to be
 12 correct, we have got to assume that firstly the initial
 13 investigation showing that it was a user that issued the
 14 reversal was wrong, and then we have also got to assume
 15 a receipt was printed although it is not within the
 16 logs.
 17 Q. Mr Coyne, in your report you specifically say, and
 18 I think you confirmed to me that it is your opinion,
 19 that the report -- this report shows that a receipt
 20 wasn't printed for the disconnected and reverse session,
 21 yes?
 22 A. Mm.
 23 Q. What I'm suggesting to you is that this report, if you
 24 can call it that, says nothing of the sort and that you
 25 haven't read it carefully enough, is that right or is

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1 that wrong?
 2 A. Well, if Gareth Jenkins is correct then a receipt would
 3 have been printed.
 4 Q. So would it be fair to say that in your anxiety to write
 5 a bad thing, to be able to write down a bad thing in
 6 your report about Horizon, you recorded what was said on
 7 the first page of the report, but you didn't look at the
 8 second page of the report which would have shown that
 9 that bad thing wasn't in fact correct?
 10 A. No, but my point was about this report is to show that
 11 there is a difference between the view that you get of
 12 the data from viewing the Credence data from the ARQ
 13 data, and that's correct.
 14 Q. Mr Coyne, if you just made that claim we would have been
 15 in and out of this issue within about five minutes. The
 16 reason why we have spent about 20 minutes so far is
 17 because you made several claims, and I set them out
 18 orally and you agreed that you were making each of those
 19 claims on the basis of this Helen Rose report. And what
 20 I'm suggesting to you is that the claim that we are now
 21 talking about is a claim that was wrong and that you
 22 should have known it was wrong if you had read the
 23 report properly?
 24 A. I do agree that the report suggests that the receipt was
 25 printed.

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1 Q. Isn't this another example of you taking a document that
 2 on a superficial reading could be said to say something
 3 critical about Horizon, and immediately writing that
 4 critical thing down without analysing the document
 5 properly to see what it actually said?
 6 A. No. This document does illustrate the point that I was
 7 making about the difference between Credence and ARQ
 8 data.
 9 Q. And do you accept that a receipt -- are you suggesting
 10 the receipt was not printed -- are you giving up on your
 11 suggestion that a receipt was not printed?
 12 A. The only evidence that we have here is that
 13 Gareth Jenkins is saying that the receipt was printed.
 14 Q. So you are disclaiming --
 15 A. No, no, I can accept that position.
 16 Q. Very good. For your Lordship's note, if one goes to
 17 {F/1095.1/1} there is an email between Mr Armstrong and
 18 Mr Warmington of Second Sight in which Mr Armstrong
 19 confirms that he did receive three receipts in relation
 20 to this reversed transaction at the time. It is at page
 21 {F/1095.1/4} of that document. I see it is up on the
 22 screen so let's have a quick look.
 23 To be fair to you, Mr Coyne, you wouldn't have seen
 24 this at the time you wrote your reports, I do not think.
 25 MR JUSTICE FRASER: When was it disclosed?

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1 MR GREEN: 7 March, my Lord.
 2 MR JUSTICE FRASER: 2019? Okay.
 3 MR DE GARR ROBINSON: You will see that on 25th June
 4 Mr Armstrong writes an email to Mr Warmington of
 5 Second Sight and he says:
 6 "Having read your report I searched through the
 7 weekly records for the 4th October 2012 and found THREE
 8 disconnected session receipts all with the same session
 9 ID ..."
 10 If we go to the bottom of the page:
 11 "The time shown on these slips is 10.36 yet I had
 12 had the foresight to enter the time of 10.32 am on the
 13 customers bill alongside the amount paid of £76.09.
 14 This means that the customer had already left the office
 15 by the time these receipts were printed out by the
 16 system."
 17 So he had manually written the time of the
 18 transaction on the customer's bill, and one infers --
 19 would it be right to infer from that, Mr Coyne, that he
 20 hadn't actually got a receipt, he hadn't closed the
 21 basket and a receipt had been printed, so he realised
 22 something had gone wrong and he manually wrote the time
 23 of the transaction down on the bill he received from the
 24 customer, is that a fair inference?
 25 A. Yes.

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1 Q. So he knew something was wrong but he accepted the money
 2 from the customer and he allowed the customer to leave
 3 the premises?
 4 A. Yes.
 5 MR JUSTICE FRASER: I do not want to start a hare running,
 6 but just for my purposes that session ID of 537803 --
 7 this isn't a question for you, Mr Coyne, it is for
 8 counsel. Can we just go back to the Gareth Jenkins blue
 9 extract because he mentions two sessions, 537803 and
 10 537805. So are they different receipts from the 537805
 11 receipt that he is talking about? It might be it
 12 doesn't matter.
 13 MR DE GARR ROBINSON: I would strongly suggest, my Lord, it
 14 doesn't.
 15 MR JUSTICE FRASER: But is your take on it that they are
 16 different receipts or is he talking about the same
 17 receipt?
 18 MR DE GARR ROBINSON: My take on it, my Lord, is that one
 19 transaction was cancelled, it was this transaction, and
 20 the appropriate receipts were printed for it.
 21 MR JUSTICE FRASER: Was that session 805 or 803?
 22 MR DE GARR ROBINSON: My Lord, I'm afraid I haven't
 23 considered these documents sufficiently to answer that
 24 question.
 25 MR JUSTICE FRASER: I don't want to start an unnecessary

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1 hare running.
 2 Right back to you, Mr de Garr Robinson. {F/1082/3}
 3 MR DE GARR ROBINSON: Coming to the next point, timings
 4 being wrong. If we go back to 5.177 of your first
 5 report, that is {D2/1/102}. So we have dealt with the
 6 question whether Credence affirmatively stated that the
 7 reversal was by the postmaster or by the system, and we
 8 dealt with the question whether a session receipt --
 9 session receipts, I should say, were printed or not.

10 We now come to this further criticism which is that:
 11 "Observations of the disclosure illustrates that the
 12 initial report states 'a transaction at 10.42', whereas
 13 the credence data file shows 10.32 with the reversal at
 14 10.37."

15 I would like to suggest to you, Mr Coyne, and we
 16 might be able to save some time, that the transaction
 17 was clearly at 10.37, indeed we have Mr Armstrong
 18 himself saying so in the email we have just read.

19 A. Yes.

20 Q. Clearly what happened is there is a typo in Ms Rose's
 21 report. If we go to {F/1082/2}, please, at page 2.

22 At the top of the page she says:

23 "A transaction took place at Lepton ... on the
 24 04/10/2012 at 10.42 for a British Telecom bill payment
 25 ..."

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1 Then she then says in the next sentence:

2 "At 10.37 on the same day the British Telecom bill
 3 payment was reversed out to cash settlement."

4 Now, I would just like to give you an opportunity to
 5 correct what you are saying in 5.177. Isn't it fairly
 6 clear that the reference to 10.42 here was her error,
 7 because you can't have a transaction that's reversed
 8 five minutes before the transaction is done. In fact
 9 she should have written 10.32, yes?

10 A. Well, either she has got it wrong or the system has
 11 recorded it wrongly, I don't know which.

12 Q. Are you really seriously suggesting that Credence was
 13 indicating that the transaction was done at 10.42 and
 14 that that's a reason for suggesting, for thinking, that
 15 Credence is unreliable? Is that really your contention?

16 A. Times on computers can be out. They do drift. It is
 17 possible that it's got the time wrong. I agree with
 18 your position that it could well be a mis-key on behalf
 19 of Helen Rose.

20 Q. It wouldn't be a sound basis for suggesting that
 21 Credence wrongly records the time done of transactions,
 22 would it? This wouldn't be a sound basis for making
 23 that claim about Credence? What it is a sound basis for
 24 saying is that when people write documents sometimes
 25 they press the wrong keys, would you agree?

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1 A. Yes. It is one of those two scenarios, yes.

2 Q. As for the second point made at 5.177, that the ARQ data
 3 always works in accordance with Greenwich Mean Time,
 4 whereas everybody else at the time was working on
 5 British Summer Time, that's not a serious problem, is
 6 it? It's not something that is going to cause great
 7 difficulties to anybody, is it?

8 A. As soon as you know that you are an hour adrift then it
 9 becomes very easy to deal with, but if you don't know
 10 that it is problematic.

11 Q. So are you imagining a world in which Mr Armstrong is
 12 provided with ARQ data but nobody tells him that ARQ
 13 data is based upon Greenwich Mean Time, is that your
 14 assumption? And that's a problem, because nobody tells
 15 him that ARQ data is based on Greenwich Mean Time?

16 A. No, my answer is if you are told then it becomes very
 17 clear very quickly, but if you are not told it is
 18 confusing.

19 Q. But in 5.178, Mr Coyne, you seem to be assuming
 20 {D2/1/102}, remarkably, that no one would have told him.
 21 You say:

22 "... it is not clear how easily it would have been
 23 to investigate issues where the Subpostmaster was not
 24 sure of what time things went on erroneously in the
 25 system ..."

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1 Why are you assuming that, having reached a point
 2 where the subpostmaster actually has the ARQ data, no
 3 one is going to help him understand that there is
 4 an hour discrepancy between the ARQ data and British
 5 Summer Time?

6 A. The point that I'm making is that unless somebody tells
 7 him it wouldn't be clear. I do not think a user would
 8 typically know that the computer would be an hour out.
 9 I think the assumption would be that if it is an audit
 10 system of some description, that the clock difference
 11 would actually be dealt with correctly.

12 Q. What I would like to suggest to you, Mr Coyne, is that
 13 in this section what you are doing is you are trying to
 14 squeeze as much criticism as you can out of the
 15 Helen Rose report that you can level at Post Office.
 16 This isn't a fair-minded explanation of what happened,
 17 it is an exercise in trying to extract bad points as and
 18 where you can find them. What would your response be to
 19 that?

20 A. That's not true. And with regard to the time, when
 21 I point out that the time was wrong, the next paragraph
 22 explains how it is likely that it was wrong.

23 Q. You say "it is not clear how easy it would have been to
 24 investigate", that's a suggestion that in fact the
 25 subpostmaster would ...

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1 I'll read the whole of it:
 2 "... it is not clear how easy it would have been to
 3 investigate issues where the Subpostmaster was not sure
 4 of what time things went on erroneously ..."
 5 What are you saying that is a suggestion of?
 6 A. Well, the subpostmaster might not necessarily know what
 7 the actual time was that the error took place. So if
 8 they have got to then work out what time it actually
 9 took place precisely, and then look at two different
 10 times because the clock might be right on the audit log
 11 or it might be an hour forward or an hour backward on
 12 the audit log it just makes the process more difficult.
 13 But I do accept that if somebody explains to the
 14 reviewer that it is an hour behind, then that makes the
 15 process easier.
 16 MR DE GARR ROBINSON: My Lord, I wonder whether this is
 17 a convenient moment.
 18 MR JUSTICE FRASER: By all means. We will have a 10-minute
 19 break.
 20 MR DE GARR ROBINSON: Could we make it five minutes,
 21 my Lord?
 22 MR JUSTICE FRASER: One of the transcribers has a back issue
 23 and that's why we are having 10 minutes.
 24 MR DE GARR ROBINSON: Very good.
 25 MR JUSTICE FRASER: But we can go on a little bit past 4.30

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1 if you are worried about losing time. The trouble with
 2 five minutes is it is not really sufficient for current
 3 purposes. So a 10-minute break and come back in at
 4 11.55 am.
 5 (11.45 am)
 6 (A short break)
 7 (11.55 am)
 8 MR DE GARR ROBINSON: My Lord. Mr Coyne, we were talking
 9 about your criticisms of the use of Credence. This
 10 isn't -- the discussion we have just had, the points we
 11 have just been discussing -- actually before finishing
 12 on this system, would you accept that what happened in
 13 the Lepton case was a customer gave cash for a BT bill
 14 payment to be made, in fact the BT bill payment was not
 15 made but the branch accepted cash for that payment, it
 16 therefore had a surplus of cash and so a TC had to be
 17 issued to correct for that surplus. Do you accept that
 18 that's what happened?
 19 A. Yes, I believe that that's what happened.
 20 Q. So do you accept that the TC was not erroneously issued,
 21 in fact it was correctly issued?
 22 A. Yes.
 23 Q. Thank you. Then let's move on to another criticism you
 24 have of Credence at {D2/1/101}. This is your first
 25 point about Credence. It is paragraph 5.174. You say:

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1 "The End to End Reconciliation Reporting document
 2 from 27 February 2012 states:
 3 "There is no formal reconciliation produced between
 4 the POLSAP System and the Credence transaction stream.
 5 The Credence stream should therefore not be used to
 6 verify financial integrity and Post Office should ensure
 7 the POLSAP System Transaction information is used for
 8 this purpose."
 9 A. Yes.
 10 Q. That's one of the bases upon which you suggest that
 11 Credence shouldn't be used in order to make decisions on
 12 transaction corrections, right?
 13 A. Yes.
 14 Q. Okay. Let's look at the document itself. It is at
 15 {F/896/1}.
 16 I'm afraid I can't see the date on the version on
 17 the screen.
 18 A. 27 February 2012.
 19 Q. Thank you very much. It is called "End to End
 20 Reconciliation Reporting", so it is a document about the
 21 reconciliation process that we discussed yesterday.
 22 A. Yes.
 23 Q. Which is the process by which data goes into POLSAP and
 24 the data in POLSAP is then compared with client data,
 25 data from banks other institutions and that sort?

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1 A. Yes.
 2 Q. Then exceptions are identified and looked into?
 3 A. Yes.
 4 Q. Right. If we could go forward to page {F/896/65}.
 5 Section 5 at the top of the page says "TPS
 6 Reconciliation Reports Specified".
 7 It starts by saying:
 8 "The Transaction Processing System (TPS) Report Set
 9 has been designed to enable reconciliation of the
 10 transactions carried out in Post Office branches using
 11 the Electronic Point of Sale Service (EPOSS) which are
 12 sent to POLSAP and POLMIS."
 13 A. Yes.
 14 Q. Just to be clear, the TPS system is the system which
 15 takes -- it is almost the highway which takes data from
 16 the Horizon branch database and transfers it into
 17 Post Office's own systems?
 18 A. Mm.
 19 Q. They are generally referred to as back office systems?
 20 A. Yes.
 21 Q. They are actually separate systems that belong to
 22 Post Office, yes?
 23 A. Yes.
 24 Q. In the course of that process there are -- that's when
 25 the reconciliation --

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1 A. Yes.
 2 Q. Once they arrive at POLSAP the reconciliation process is
 3 undertaken, yes?
 4 A. Yes. I mean reconciliation, this is talking about end
 5 to end reconciliation, so it is all the way through the
 6 whole -- the entirety of the systems.
 7 Q. But when the comparison occurs -- the figures hit POLSAP
 8 and then the comparison with client data occurs, does
 9 it?
 10 A. Yes.
 11 Q. I see. So:
 12 "The ... (TPS) Report Set has been designed to
 13 enable reconciliation of the --"
 14 Sorry, I have just read that sentence. Let's move
 15 on:
 16 "The TPS exceptions report set identified herewith
 17 reports errors that have occurred within counter
 18 transactions or during the harvesting process.
 19 "NB: for the avoidance of doubt, there is no formal
 20 reconciliation produced between the POLSAP and POLMIS
 21 transaction stream. The POLMIS stream should therefore
 22 not be used to verify financial integrity and Post
 23 Office Ltd should ensure the TPS Report Set and POLSAP
 24 transaction stream are used for this purpose."
 25 This is the document you referred to and it refers

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1 to POLMIS here. Actually there is a later version of
 2 this document that refers to Credence.
 3 A. Yes.
 4 Q. It may be that the document reference you have given is
 5 erroneous?
 6 A. I think that that's right. It must be a later version
 7 of the same document.
 8 Q. I presume you didn't check all the document references,
 9 it would have been very difficult for you to do that.
 10 A. I have put what's called a MD5 reference at the bottom
 11 of there, so I'm not sure. I don't think there's any
 12 easy way of checking that.
 13 Q. I have found a later version of the document that does
 14 refer to Credence so I'm not going to challenge you on
 15 that, Mr Coyne.
 16 MR JUSTICE FRASER: Would you give me, for my note, that
 17 reference at some point. You don't have to do it now.
 18 MR DE GARR ROBINSON: Yes, my Lord. It is {F/1686/1}.
 19 MR JUSTICE FRASER: Thank you very much.
 20 A. Sorry, my footnote does say 27 February and the date at
 21 the bottom of this one is 22 June.
 22 MR JUSTICE FRASER: No, this is 27 February but I think
 23 an earlier version was 22 June of 2011.
 24 A. Forgive me, my Lord, I'm just looking at the bottom of
 25 what's on the screen at the moment, towards the bottom

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1 right.
 2 MR JUSTICE FRASER: Yes, that's because you can't see the
 3 way the colours have been struck through.
 4 That is right, isn't it, Mr de Garr Robinson?
 5 MR DE GARR ROBINSON: My Lord, I believe so.
 6 MR JUSTICE FRASER: For some reason I have got in my
 7 {F/896/1} on my trial bundle, I have got a coloured
 8 track change version of the same document which does
 9 show 22 June crossed out.
 10 MR DE GARR ROBINSON: Mine does --
 11 MR JUSTICE FRASER: Yours does as well?
 12 MR DE GARR ROBINSON: I have a hard copy and mine does,
 13 which I printed off the trial bundles, my Lord.
 14 Should I say "from" the trial bundles? I never
 15 know.
 16 MR JUSTICE FRASER: That's fine.
 17 MR DE GARR ROBINSON: If we go back to page {F/896/8} of
 18 this document, I hope it is of this document and not the
 19 1696 version.
 20 It explains, if we look at section 2, "Scope":
 21 "This document defines the format and content of all
 22 reconciliation reports for HNG-X ..."
 23 That is Horizon Online?
 24 A. Mm.
 25 Q. "... which satisfies the DRS, APS and TPS reconciliation

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1 requirement."
 2 These are all different forms of reconciliation.
 3 Can you take us through them. What's DRS?
 4 A. It is something reconciliation service but I can't think
 5 what.
 6 Q. APS?
 7 A. Automated payment system.
 8 Q. Then we have TPS.
 9 A. Transaction --
 10 Q. These are all separate systems beyond, as it were, the
 11 branch data?
 12 A. Yes.
 13 Q. It is beyond branch accounts. This is information taken
 14 from the BRDB and pushed through those streams to allow
 15 different forms of reconciliation to be undertaken?
 16 A. Yes.
 17 Q. It does not attempt to define within the operating
 18 systems how the transactions are processed.
 19 "This document does not attempt to define the
 20 business processes undertaken within Fujitsu Services
 21 and Post Office Ltd with respect to the resolution of
 22 any exceptions which may arise, nor does it scope the
 23 requirement for any systems that may be required to
 24 assist in this process. This information can be found
 25 in the associated documents."

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1 So it is just talking about the format and content
2 of all reconciliation reports and it doesn't talk about
3 the business processes undertaken with respect to the
4 resolution of any exceptions.

5 Now, if we go back to -- so just to be clear, it has
6 nothing to do with the Post Office business processes
7 leading to decisions on transaction corrections, does
8 it?

9 A. It does -- well, the decision to make a transaction
10 correction is a comparison between, in rudimentary
11 terms, front end and back end systems. Because what is
12 going on here through transaction processing has
13 a potential to change transactions in the back end.

14 Q. Mr Coyne, I'm getting slightly concerned about time.
15 I asked quite a simple question which was this
16 document -- paragraph 2, section 2 that we have just
17 read, makes it clear it is not about the business
18 processes which lead to the decisions made to issue
19 transaction corrections. That is a yes or no answer, if
20 I may suggest. Could you give me one?

21 A. Yes, this document does not go to --

22 Q. Thank you. It is not what this document is concerned
23 with at all, is it? It is concerned with the
24 reconciliation process. And that process may end up
25 leading to investigations that result in decisions being

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1 made but it is not about that side of the divide at all,
2 is it?

3 A. No, that is right.

4 Q. Thank you.

5 A. I have the DRS, it is data reconciliation service.

6 Q. Thank you.

7 Then if we go back to page 65 {F/896/65}, this is
8 going back to section 5. This is describing the process
9 by which exceptions are identified, yes?

10 A. Yes.

11 Q. Then the various reports that are produced are then
12 discussed. So at 5.1 there is the TPSC250 report, "Host
13 Detected Transaction Control Errors":

14 "This report is produced daily and shows detail for
15 any Post Office branch where the control totals for the
16 transactions output by the Host to POLFS and POLMIS do
17 not match the daily transaction totals calculated by the
18 counters."

19 So that is quite a good check. It shows if there is
20 a discrepancy between what the counters have done and
21 the information going into Post Office's systems.

22 That's quite a useful check, isn't it?

23 A. Yes, it is a report that's available to the Post Office.

24 It isn't given to the branch I don't believe.

25 Q. No, it's not. I think actually it is given in the first

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1 instance to Fujitsu. It is only given to Post Office if
2 Post Office request it, that is right, isn't it?
3 Because Post Office isn't involved in this, it is
4 a Fujitsu process, correct?

5 A. There is a suite of reports that is handed over between
6 Fujitsu and Post Office automatically each morning. I'm
7 not sure whether this is one of the reports that's sent
8 to them.

9 Q. If one goes over the page, 5.2, TPSC254. This is
10 another form of report that's generated each day, yes?
11 {F/896/66}

12 A. Yes.

13 Q. This is called "Harvester Exceptions":

14 "This report is produced daily and shows a list of
15 exceptions detected by the BRDB copy process when
16 failing to process one or more messages."

17 These are all countermeasures, aren't they? They
18 are the sort of countermeasures Dr Worden is talking
19 about, spotting discrepancies between data that ought to
20 be the same. It is a good example of redundant data
21 storage and MID and all those other acronyms that
22 Dr Worden uses, correct?

23 A. These are reports that are available so as long as
24 somebody looks at the reports they should be able to
25 pick it up.

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1 Q. Mr Coyne, you are not suggesting that people don't look
2 at -- people look at these reports every day, don't
3 they? These are the reports that produce all those
4 exceptions about which you make so much hay in your
5 report?

6 A. They certainly should do, yes.

7 Q. Are you suggesting -- let me get -- are you suggesting
8 that people don't look at these reports? Have you seen
9 evidence to suggest that people don't look at these
10 reports?

11 A. No, what I'm saying is somebody needs to read the
12 reports.

13 Q. Very good. Then if one goes over the page to 5.3
14 {F/896/67}, TPSC257, that's "POLFS Incomplete Summaries
15 Report". That's another daily report, isn't it?

16 A. Yes.

17 Q. "This report identifies all Post Office branches on a
18 daily basis in which the net total of transactions
19 (debits/credits) does NOT net to a value of zero."

20 So this, for example, picks up receipts and payments
21 mismatches, doesn't it?

22 A. Yes.

23 Q. So if there is a receipts and payments mismatch at any
24 branch on any day of the week it will be automatically
25 reported to Fujitsu who will be aware of it and can

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1 investigate, isn't that right?
 2 A. Yes, I believe that this is the report that's printed to
 3 indicate that, yes.
 4 Q. And would I be right in thinking that you have seen
 5 hundreds of PEAKs which show that Fujitsu do absolutely
 6 investigate these exceptions when they arise?
 7 A. There are certainly PEAKs that talk about the
 8 investigation from these incomplete summary reports,
 9 yes.
 10 Q. I'm interested, would you accept that there are lots of
 11 PEAKs that do that?
 12 A. I don't know exactly what the number would be but there
 13 are a number, yes. There are many.
 14 Q. Here's what interests me about that answer, Mr Coyne.
 15 You are perfectly happy when you see an example of
 16 a handful of things happening to say things often happen
 17 when they favour a case -- that they help build a case
 18 that Horizon is bad. But when I ask you a simple
 19 question, "You have seen lots of PEAKs in which these
 20 exceptions are investigated?" you are unwilling even to
 21 concede that it happens a lot of times. I'm quite
 22 interested in why you should have a different attitude
 23 depending on whether or not something is a criticism of
 24 Horizon or in praise of Horizon?
 25 A. I'm attempting to be as precise as possible with my

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1 answers to you.
 2 Q. When it comes to saying something positive about Horizon
 3 you are very precise indeed. Can I suggest to you, Mr
 4 Coyne, that you are rather less precise when it comes to
 5 criticising it.
 6 A. That's certainly not my intention.
 7 Q. Let's go back to page {F/896/65}. This is the third
 8 paragraph under section 5:
 9 "NB: For the avoidance of doubt there is no formal
 10 reconciliation produced between the POLSAP and POLMIS
 11 transaction stream."
 12 We can call that Credence.
 13 "The POLMIS stream should therefore not be used to
 14 verify financial integrity and Post Office Ltd should
 15 ensure the TPS Report Set and POLSAP transaction stream
 16 are used for this purpose."
 17 You appear to suggest in the paragraph of your
 18 report that we have just read, paragraph 5.174, that
 19 this is an indication that Post Office should not be
 20 using Credence for the purposes of making decisions
 21 about transaction corrections. That is your claim,
 22 isn't it?
 23 A. Yes.
 24 Q. Could I just suggest to you, Mr Coyne, that when this
 25 report is talking about financial integrity that's

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1 a reference to the integrity of the financial data, it
 2 is a reference to ensuring that the data for the given
 3 day is complete so that it can be used for
 4 reconciliation. It is not a statement about what should
 5 be done when making decisions on transaction
 6 corrections?
 7 A. But some of the information that is reported here and
 8 finds its way back into POLSAP will be required in order
 9 to make a decision on whether to issue a transaction
 10 correction or not. And if they are not reconciled
 11 together, you could have the scenario where Credence
 12 data differs from POLSAP data.
 13 Q. So as I understand it, you are using this as part of
 14 an argument -- and it becomes a theme of your second
 15 report -- that Credence data shouldn't be used for the
 16 purposes of deciding on TCs, actually it should be ARQ
 17 data?
 18 A. My point is that Credence data alone shouldn't be used.
 19 The ARQ data will give the full picture of what went on
 20 at the counter.
 21 Q. If in this report they are talking about that process,
 22 and I have already suggested to you, Mr Coyne, that that
 23 question, the data that is used for the purposes of
 24 transaction correction decisions, has got nothing to do
 25 with this report. The writer isn't concerned with that.

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1 I have already suggested that to you and I think you
 2 have accepted it. But are you suggesting that the
 3 writer has decided to say something that's outside the
 4 scope of this report because he is concerned that
 5 inappropriate data is being used for the purposes of
 6 making transaction correction decisions? Is that how
 7 you construe this paragraph?
 8 A. Well, I mean I don't exactly know what was in the mind
 9 of the author when they put this together, but they saw
 10 fit to put a specific note to say that there was a doubt
 11 over what should and shouldn't be used to verify
 12 financial integrity, and what should be used to verify
 13 financial integrity is the TPS reports in POLSAP.
 14 Q. Mr Coyne, from the get-go Post Office has used its
 15 management information systems in order to decide on
 16 whether or not to issue transaction corrections, is that
 17 right?
 18 A. Yes, I would think so.
 19 Q. And it has used Credence and any predecessor -- I'm
 20 presuming here that POLMIS might be a predecessor of
 21 Credence -- would that be right?
 22 A. It is Post Office Management Information System.
 23 Whether that later became Credence or not, I would have
 24 to check.
 25 Q. I'm afraid I don't know. That was a genuine question.

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1 So we have a business, the Post Office, which has
 2 had a practice since the beginning of making decisions
 3 in relation to transaction corrections based upon its
 4 management information systems?
 5 A. Its range of management information systems.
 6 Q. And you are suggesting, are you, here in this paragraph,
 7 that the writer of this report in 2012, February 2012
 8 and thereafter, is suggesting that what Post Office has
 9 been doing for the previous 12 or 13 years is completely
 10 wrong? Do you honestly think that that's what the
 11 writer of this sentence was intending to convey?
 12 A. No, I don't think they are saying that what you have
 13 been doing for the last 12 years is completely wrong.
 14 They are providing a warning that you should use one set
 15 of systems rather than another set of systems because
 16 the two do not reconcile.
 17 Q. And what I would like to suggest to you, Mr Coyne, is
 18 that when this report talks about financial integrity,
 19 it is talking about the integrity of the data that's
 20 compared as between the client and Post Office. It is
 21 not talking about the process of making decisions about
 22 transaction corrections. Do you not accept that?
 23 A. But the integrity of the data between the Post Office
 24 and its clients could well have an impact on branch
 25 accounts, because if there's an issue between

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1 Post Office and its clients, the client will report
 2 a different view of the transaction.
 3 Q. Let me move on. Let's move on to the conclusion that
 4 you then draw from the passages that we have seen, the
 5 Helen Rose report, and the end to end reconciliation
 6 reporting.
 7 The conclusion you draw is that when faced with
 8 a problem, an apparent discrepancy, an apparent
 9 exception in accounting figures, when therefore called
 10 upon to make a decision about whether to decide on
 11 a transaction correction or not, Fujitsu and Post Office
 12 should always use the raw ARQ data that's held in the
 13 audit store, that is your claim, isn't it?
 14 A. In order to get the definitive position on it they
 15 should, yes, because that is a record of what actually
 16 happened.
 17 Q. So let's take this in stages. It is a good thing for
 18 a complex system like Horizon to have a secure place to
 19 store a copy of all the transaction data that comes in
 20 from branches, isn't it?
 21 A. Yes.
 22 Q. Because one can then go back to look at that pristine
 23 copy months or years later if there is a concern about
 24 the accuracy of the data in the management systems,
 25 correct?

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1 A. Yes.
 2 Q. And the whole point of an audit store is that the data
 3 in it is effectively locked away in a secure place and
 4 only extracted when it is necessary for checking against
 5 the other sources, correct?
 6 A. Yes.
 7 Q. Now, were you in court when Mr Dunks gave evidence about
 8 the process of obtaining data from the audit store, do
 9 you remember? Were you here when he gave that evidence?
 10 A. I'm not sure that I was.
 11 Q. You will recall his witness statement where he describes
 12 it, yes?
 13 A. Yes.
 14 Q. It is a slow and careful process, isn't it, extracting
 15 the data in a reliable way?
 16 A. I don't know if "careful" is the right word but it
 17 certainly would be slow, I can imagine.
 18 Q. And it is done from a very small number of very
 19 carefully managed secure sites, correct?
 20 A. Likely, yes.
 21 Q. And it is labour intensive and quite expensive, correct?
 22 A. I can't imagine why it would be labour intensive.
 23 I imagine you'd put a search into the computer system
 24 and press go, I would imagine, and it would --
 25 Q. Mr Dunks' witness statement describes the care with

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1 which these processes are undertaken, the care with
 2 which access to the relevant systems is carefully
 3 controlled.
 4 A. Yes.
 5 Q. It is only particular people that are allowed to do that
 6 particular job --
 7 A. Indeed.
 8 Q. -- and they have to have particular authorisation and
 9 particular qualifications?
 10 A. Yes.
 11 Q. And I think you have already accepted it can be a slow
 12 process?
 13 A. Yes.
 14 Q. Particularly if a large amount of data is being
 15 extracted you would accept, would you, that it could
 16 take weeks and weeks for really huge quantities of data
 17 to be extracted?
 18 A. I would be surprised if that was the case. But I mean
 19 typically you would be extracting a day's worth of
 20 transactions, perhaps even less than that, to understand
 21 what went on around the particular hour or --
 22 Q. And it is quite an expensive process, isn't it?
 23 A. I believe that there are -- there is a certain number of
 24 requests that can be made within Fujitsu's service level
 25 agreement and then after that there is a charge that's

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1 made, yes.
 2 Q. And the charge that's made over the allowance of 720
 3 a year, it is over £200, are you aware of that?
 4 A. I think I did see that figure, yes.
 5 Q. Right. And what you get when the data is extracted is
 6 not data organised into the form of elaborate reports,
 7 it is raw data which actually needs packaging even to
 8 put it in a spreadsheet. It is very difficult to manage
 9 this kind of data, isn't it?
 10 A. I believe the process is that there is a raw version but
 11 there is also a version that is packaged so it can be
 12 read in Excel.
 13 Q. You mean in a spreadsheet?
 14 A. In a spreadsheet.
 15 Q. Do you mean the spreadsheets that the witnesses -- the
 16 claimant witnesses were taken to during the course of
 17 their evidence at the beginning of the trial? Because
 18 my experience of those spreadsheets is that they are
 19 very difficult to manage your way through, but would you
 20 suggest not?
 21 A. Absolutely. You would have to be reasonably experienced
 22 in interpreting the data that's given to you, it would
 23 be quite a complex spreadsheet. But it can be opened up
 24 in a conventional spreadsheet.
 25 Q. The controls and checks described by Mr Dunks are what

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1 you would expect if the idea is to have a gold standard
 2 store of data that cannot be altered or corrupted or
 3 lost in the meantime, yes?
 4 A. Yes.
 5 Q. Perhaps I could go to your second report now at
 6 {D2/4.1/7}. This is your executive summary of your
 7 second report.
 8 A. Yes.
 9 Q. In paragraph 1.2 you say:
 10 "I consider that Horizon is less robust than as
 11 originally expressed in my first report. My primary
 12 reasons for this are as follows ..."
 13 A. Mm.
 14 Q. And you talk about remote access.
 15 If you go down to paragraph (c).
 16 A. Yes.
 17 Q. "Post Office do not consult the full audit data before
 18 ruling on a discrepancy, instead using third party
 19 client reconciliation data or subsections of the audit
 20 data from within Credence or HORice."
 21 A. Mm.
 22 Q. So this is something -- your discovery that this was
 23 happening is something that caused you to have a change
 24 of heart on robustness, is that right?
 25 A. Yes. It was my original belief that the audit data was

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1 consulted.
 2 Q. So when you drafted your first report you thought that
 3 every time Post Office was faced with some kind of
 4 discrepancy that might lead to a TC, you thought in
 5 every case regard was had to the full audit data that
 6 was held in the audit store, did you?
 7 A. Well, certainly that was my original opinion, yes.
 8 I thought that was the purpose of the audit store, to
 9 actually go back and see what happened at branches.
 10 Q. But you knew, Mr Coyne, that the audit store was copied
 11 from the BRDB and sealed and maintained for seven years,
 12 didn't you?
 13 A. But it only needs to be sealed from a write perspective.
 14 You can seal something and still have read access to it.
 15 There is generally no problem with that. That doesn't
 16 tamper with any seals --
 17 Q. Didn't you know, in fact wasn't it obvious, bearing in
 18 mind all the controls that we just discussed with
 19 Mr Dunk's report, witness statement and so on, that
 20 Post Office would generally rely on its own management
 21 information systems when making decisions on transaction
 22 corrections? Wasn't that obvious to you?
 23 A. No, it wasn't obvious to me. I perceived that the
 24 management information systems would be part of it, but
 25 that to get the true picture of what had happened at the

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1 branch the audit data would be consulted.
 2 Q. Well, if we could go back to your first report, it is
 3 {D2/1/119}.
 4 MR GREEN: My Lord, in fairness to the witness, it does
 5 pre-date the witness statement being referred to. The
 6 witness statement is November.
 7 MR DE GARR ROBINSON: I'm grateful to my learned friend.
 8 Thank you.
 9 If we look at paragraph 6.46, you will see it is
 10 under the heading "Reconciliation Summary". This is
 11 your first report, yes?
 12 A. Mm.
 13 Q. You say:
 14 "In consideration that Branch account positions were
 15 interpreted and reviewed from data flows through to Post
 16 Office back end systems (which would determine whether
 17 Transaction Corrections were to be applied), the
 18 following is considered relevant."
 19 {D2/1/120}
 20 Over the page you say:
 21 "POLSAP -- Following investigation by Fujitsu, Logica
 22 and Ingenico, the root cause of a long outstanding
 23 problem with missing data within POLSAP was identified
 24 as out of range dates which failed the Credence
 25 validation (in excess of 90 days). Ingenico has

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1 corrected the data and P&BA has advised that the
2 mismatches have been cleared ...”
3 Here you appear to be saying, indeed you appear to
4 be raising it as a criticism of Post Office, that when
5 making management -- decisions on transaction
6 corrections, Post Office were using management data that
7 could be wrong.

8 Now I would like you, if you would, to explain why
9 having made that criticism there you claimed just three
10 and a half months later in your next report that in fact
11 you made the opposite assumption, namely, that
12 Post Office always looked at all the core audit data?

13 A. Sorry, I don't understand the question.

14 Q. This is your first report, paragraph 6.46 is your first
15 report.

16 A. Yes.

17 Q. And we just read your second report where you said: when
18 I produced my first report I believed that when
19 decisions were made about transaction corrections the
20 full ARQ data was used. Correct?

21 A. Yes.

22 Q. Now we go to 6.46 and here you are saying that
23 management information systems, the back end systems,
24 were used to determine whether transaction corrections
25 were to be applied, and you give as an example, over the

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1 page, POLSAP?

2 A. Yes.

3 Q. Now, ARQ data, the core audit store, that isn't back
4 end, is it? That's not held by Post Office and used by
5 Post Office for its systems, it is an entirely separate
6 process that's maintained by Fujitsu, isn't it?

7 A. Yes.

8 Q. So here in your first report you appear to be saying
9 that there is a problem with the process by which
10 Post Office decides transaction corrections because they
11 are using Post Office management systems that might be
12 unreliable?

13 A. Yes.

14 Q. But if you believed that when Post Office made those
15 decisions actually they used the full ARQ audit data,
16 that criticism would be utterly misconceived, wouldn't
17 it? So either you were telling the truth -- or either
18 you believed when you did your first report that
19 management systems, not ARQ data, was used, or it is the
20 position that you were making a criticism of the use of
21 management systems even though you believed that the
22 full audit data was actually used, but it can't be both.

23 A. I think it can be both. In my first report it was my
24 perception that the range of management information
25 systems and the ARQ data should be used, and in my

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1 second report -- well, before my second report
2 I discovered that the ARQ data was not used.

3 Q. I see. So let's look at paragraph 6.46 again. In that
4 paragraph, forgive me, but it appears to be yet another
5 criticism of the method by which Post Office conducts
6 its business and the criticism appears to be that
7 Post Office is using a form of information which is
8 unreliable {D2/1/119}.

9 If you had wanted to be balanced in your approach to
10 that criticism, would it not have been appropriate for
11 you to say: but I do of course recognise that this is
12 only one subset of the information that Post Office used
13 and I do understand Post Office actually used the full
14 audit data as well? Would a need for balance not have
15 required you just to make that point clear?

16 A. Certainly if I had included that it may have helped the
17 reader, yes.

18 Q. If we could now move back to your second report, it is
19 {D2/4.1/228}. Actually I'm so sorry, I have taken you
20 to the wrong page. Could we go to 114 rather than 128
21 {D2/4.1/114}.

22 You say in paragraph 4.67 under the heading "ARQ
23 Requests":

24 "In her statement Ms Mather references the number of
25 ARQ requests per year. If it is correct that the

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1 contractual limit of 720 per year has never been
2 exceeded except for this litigation, then in my view
3 Post Office is not utilising the audit data sufficiently
4 and certainly is not checking the audit data prior to
5 issuing transaction corrections."

6 A. Mm.

7 Q. Then at 4.68:

8 "in 2011/2012 using the figure that Dr Worden
9 produces at his Table 9.3 (section 9.6, page 208) there
10 were 107,583,584 Transaction Corrections but only a
11 fraction 213 of these were validated by the audit data."

12 A. Mm.

13 Q. So you are suggesting, are you, that full audit data
14 should have been extracted from the database in at least
15 107,584 occasions during that year?

16 A. Yes. I believe that the audit data should be consulted
17 every time there is a potential dispute and need to
18 issue a transaction correction. In light of now
19 understanding the process of getting at the audit data
20 and getting it extracted, I see that it wouldn't be
21 possible to do that.

22 Q. It would also cost something like -- well, because of
23 course you wouldn't only look at ARQ data when actually
24 issuing a transaction correction. Would I be right in
25 thinking that your view would be that every time there

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1 is an exception, a discrepancy, a full audit data ought
 2 to be looked at as well?
 3 A. Certainly a section of the audit data, yes. You don't
 4 have to look at the full audit data. On a lot of
 5 systems if you believe something happened between
 6 10 o'clock and 11 o'clock, you can go to a screen, put
 7 10/11 o'clock on a certain date, press go, and it will
 8 give you a list of all the actions that happened on that
 9 day.
 10 Q. I don't believe the audit still works like that. Is
 11 that something you are aware of?
 12 A. No, I now understand the audit data doesn't operate like
 13 that and I now understand there are costs associated
 14 with it, but I don't believe that was understood --
 15 Q. So let's say there are 107,000 TC decisions made a year.
 16 The number of decisions that don't result in TCs, let's
 17 pluck a figure out of the air, I have no idea, it could
 18 be an equivalent number, it could be much more actually.
 19 Let's say 250,000 decisions a year. If each of those
 20 audit requests cost £200, we are looking at £50 million
 21 a year, aren't we?
 22 A. Yes.
 23 Q. Another point that interests me is: is it really the
 24 case that you are assuming that although the audit data
 25 was kept separate, it was nonetheless available in some

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1 kind of information stream in a similar way to POLSAP
 2 and to Credence? Is that how you thought it worked?
 3 Because it bears no relation to how the audit store was
 4 actually operated and maintained.
 5 A. I have got experience of working or designing audit
 6 stores for a number of different systems and they don't
 7 have to work in the way that they have been defined
 8 here. Audit systems are often very easily accessible to
 9 be able to be read by certain users. There's nothing
 10 inherently difficult about that. I accept that the
 11 write aspect of it, you know, you wouldn't want people
 12 writing to an audit database. But having the ability to
 13 read to it is something that's quite simple -- read from
 14 it is quite simple.
 15 Q. And would you accept that the closer you get to raw
 16 data, the more you need specialist knowledge and skills
 17 to interpret that raw data?
 18 A. You do, but the extraction or the report that's run from
 19 the audit data would typically handle the presentation
 20 aspect of it. There might be lots of 0s and 1s at the
 21 back, but the report generator can often put it together
 22 in quite a usable form --
 23 Q. So are you suggesting that when you were giving your
 24 first report, your first opinion, you believed that
 25 there was a process by which the core audit store that

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1 was kept separately by Fujitsu, and there are references
 2 in your report explaining how separately they were kept,
 3 that actually there was a system that extracted data
 4 from that audit store on a regular basis, perhaps on
 5 a continual basis, and packaged that information into
 6 easy to use reports that gave you all sorts of
 7 information that you would need in order to make
 8 transaction correction decisions, is that what you
 9 believed was happening?
 10 A. I would not characterise it in the way you have done
 11 there, but my perception is if Post Office needed to
 12 hone in on a particular area, whether it be an hour or
 13 a day of what happened at a branch, that they would have
 14 a way of viewing that audit data for that period on
 15 a screen or by pulling a report.
 16 Q. What I would like to suggest to you, Mr Coyne, is that
 17 if that had been your apprehension, if that had been
 18 your belief, you would have -- these would have required
 19 their own quite sophisticated systems and you would have
 20 been aware of those systems. You have a vast amount of
 21 technical documents explaining all the different systems
 22 in operation and how they fitted together, including
 23 documents relating to the audit store, you would have
 24 seen that there was a system of that sort. Indeed
 25 I rather imagine that Post Office would have been quite

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1 happy to come forward to explain how that process
 2 happened. But instead, you are saying that you assumed
 3 that all this happened even though you had seen no
 4 documentation to support such a belief at all, and I'm
 5 asking you, Mr Coyne, can that really be right?
 6 A. Well, the purpose of having an audit of what happens at
 7 branch counters is so that if there is a dispute over
 8 what has happened that somebody, presumably this will be
 9 Post Office, can have a very quick look at what happened
 10 and find out the truth. That's the purpose of having
 11 an audit store. There is no other reason for it other
 12 than looking back at what actually happened. It is my
 13 perception that that look back was available to people
 14 at the Post Office.
 15 Q. Could I suggest to you, Mr Coyne, that you knew very
 16 well that the system that Post Office used for the
 17 purposes of having what you describe as a quick look
 18 were its management information systems. The hint is in
 19 the name, MIS, management information systems. And you
 20 would expect, in the absence of being told to the
 21 contrary, that a business such as Post Office would use
 22 its management information systems for making business
 23 decisions of that sort?
 24 A. And the audit database would be part of that management
 25 information system.

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1 Q. Mr Coyne, if that were true you would certainly have
2 seen documents explaining that amongst the management
3 information systems of Post Office was an audit store
4 that was maintained in an entirely separate facility
5 that was owned by an entirely separate company and was
6 maintained separately and had no connection with the
7 outside world, would you not?

8 A. No, I don't believe that that was the case. If you are
9 making decisions based purely on a cut-down version of
10 the data in a management information system you have to
11 decide what data is going to be cut out of that. So if
12 everything is in the audit store and just a portion of
13 that data is in your management information systems,
14 then you are going to necessarily make a decision based
15 on a subset of the data and not the whole of the data.

16 Q. I understand the logic of your position, Mr Coyne. What
17 I'm seeking to explore with you is whether it bears any
18 relation to reality.

19 Data comes out from the BRDB in streams. It comes
20 out -- copies of data come from the BRDB and go into
21 Credence. Copies of data come out from BRDB and go into
22 POLSAP. They go into other management information
23 systems maintained by Post Office. Entirely separately,
24 and the word "separate" is in your first report,
25 information goes out to a sealed audit store, the word

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1 "sealed" is in your report, where it is kept for seven
2 years.

3 A. Yes.

4 Q. And what I'm suggesting to you is that there is no basis
5 upon which you could ever have thought that the
6 information in that audit store could be regarded as
7 a Post Office management information system?

8 A. I believed that it was a system that Post Office would
9 look at whenever there was a dispute about what happened
10 at a branch counter. I believed that they would have
11 access to that.

12 Q. Did you see any technical documents indicating a route
13 by which information from the sealed audit store was
14 made available on a read only basis to Post Office?

15 A. No.

16 Q. Did you see any PEAK or any other document, any -- well,
17 OCPs, it is too early for that. But did you see any
18 documents of any sort indicating or referring to the
19 stream of data flowing on a continual basis out of the
20 audit store into Post Office's management systems?

21 A. No, but that's not how things would work. If
22 Post Office wanted to get access to the data in the
23 audit store they would go to a screen or go to
24 an application on their computer and they would run the
25 request for that data.

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1 Q. Mr Coyne, I would like to suggest to you that it is
2 completely unrealistic to think that a separate sealed
3 core audit store of the sort we're talking about should
4 be cracked open hundreds of times a day in preference to
5 using management information systems which are designed
6 for that precise purpose?

7 A. I think the word "sealed" is misleading and the concept
8 of cracking something open to get access to it I think
9 is misleading as well.

10 Things in an audit store are only -- can be written
11 to and only written to once, and the term that's often
12 used is write once read many, WORM. So the process is
13 written to once, but people can read from that store on
14 many occasions.

15 Q. But just to be absolutely clear, you had not and indeed
16 you have not seen any documents suggesting that
17 Post Office had the ability to gain access to the audit
18 store on its own systems, had you? There was no design
19 facility, there was no -- there were no lines of
20 communication between the audit store and Post Office in
21 any document you had ever seen, correct?

22 A. No, it looks as if the majority of the references to
23 audit database access was from Fujitsu personnel.

24 Q. And one final thing. Would I be right in thinking that
25 now that you understand how the audit store actually

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1 works and the costs and delays associated with
2 extracting data on a large basis from the audit store,
3 would you accept that it would be disproportionate to be
4 using the audit store as a basis for making decisions on
5 transaction corrections in every single case?

6 A. Yes, it would seem that it would be very expensive and
7 very slow to access the audit store, and effectively for
8 the number of transaction corrections you couldn't do
9 that, and therefore you accept that you make decisions
10 on the management information systems rather than the
11 audit store.

12 Q. In your evidence yesterday we discussed your approach,
13 remember, to whether and to what extent Post Office and
14 Fujitsu did things on a cost benefit basis?

15 A. Yes.

16 Q. In the course of that evidence I recall you indicating
17 that you regarded it as important to ascertain whether
18 the possibility of error was reduced as far as possible.
19 Do you remember that exchange that we had?

20 A. Yes.

21 Q. Was it your objective in your reports to address that
22 question?

23 A. Was it my objective at the outset to address that
24 question?

25 Q. To consider not whether the risk was reduced as far as

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1 reasonable or to consider whether the risk was reduced
 2 as far as practicable, but to consider whether the risk
 3 was reduced as far as possible, which is a much more
 4 exacting standard?
 5 A. I believe that was the word that was used in the Horizon
 6 Issues.
 7 Q. So would the answer to my question be yes, that when you
 8 produced both your reports you did so with the objective
 9 of applying that test when determining whether something
 10 constituted a problem in the system or not, whether it
 11 satisfied the test of reducing a risk as far as
 12 possible?
 13 A. Yes.
 14 Q. And not just with -- and did that inform -- does that
 15 inform actually the approach, the criticisms you make of
 16 the use or non-use of ARQ data in your second report?
 17 A. Yes.
 18 Q. But if you take a step back and consider questions such
 19 as proportionality and reasonableness, would you take
 20 a different view on that question and perhaps some other
 21 questions too?
 22 A. As I understand it, the question was reduce as far as
 23 possible.
 24 Q. Yes.
 25 A. So that is the way I answered that question.

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1 Q. Could we go to {C1/1/1}, please. This is the Horizon
 2 Issues. I don't want to take more time than is
 3 necessary, but I would like to give you an opportunity
 4 to tell me which of these Horizon Issues raises that
 5 question as a test.
 6 (Pause)
 7 MR JUSTICE FRASER: Are you looking for it in your report?
 8 A. I am, sir.
 9 MR JUSTICE FRASER: The list of issues is at page 3,
 10 I think, of your first --
 11 A. Thank you.
 12 MR JUSTICE FRASER: You can only see one page at a time on
 13 the screen.
 14 MR DE GARR ROBINSON: Absolutely, my Lord.
 15 A. That's okay.
 16 (Pause)
 17 The reference at Issue 6 at 116 is reduced to
 18 an extremely low level, the risk.
 19 Q. Yes. So it is a factual question as to how low level
 20 the risk was. It is not a question whether Post Office
 21 had reduced the risk to the lowest possible level, is
 22 it? I'm just wondering, Mr Coyne, whether you may have
 23 applied in your entire approach to your reports the
 24 wrong test for the purposes of these proceedings. Do
 25 you think that's possible?

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1 A. No, I don't believe so. I mean, it is not defined what
 2 an extremely low level is.
 3 Q. But you do accept that as low as possible, that was the
 4 test that you used when approaching both your reports.
 5 I think you have already accepted that?
 6 A. Yes.
 7 Q. Thank you. Let's move on to a different subject.
 8 Perhaps I can deal with this quickly. I would like to
 9 talk about PEAKs and KELs.
 10 From what you said yesterday about your change of
 11 mind on robustness between the first joint statement and
 12 your first report, I imagine you would agree that the
 13 system of KELs and PEAKs that Fujitsu developed was
 14 quite a thorough system?
 15 A. Yes.
 16 Q. And that you formed the view that members of the SSC
 17 were very familiar with the Horizon system?
 18 A. Yes.
 19 Q. And they were very familiar with the PEAK and KEL
 20 system?
 21 A. Yes.
 22 Q. And with their training and experience and with using
 23 search facilities they were able to navigate that system
 24 quite well?
 25 A. Yes.

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1 Q. Notwithstanding the limitations that you have fairly
 2 identified. And that using search facilities they were
 3 often able to find PEAKs or KELs addressing similar
 4 problems to the ones that they were facing?
 5 A. Yes.
 6 Q. And would you agree that the PEAKs show, generally show,
 7 the thoroughness with which they generally worked?
 8 A. Yes.
 9 Q. And they tended to keep a written record of what they
 10 did step by step in PEAKs, didn't they?
 11 A. Yes.
 12 Q. It wasn't comprehensive, no one is suggesting it is
 13 comprehensive, but it's quite a process-driven process,
 14 one doesn't often see something significant happening
 15 that isn't somewhere recorded or alluded to in the PEAK
 16 during the different processing steps that are described
 17 as you go down the PEAK from the top.
 18 A. Yes.
 19 Q. So in the scheme of things, compared with other systems
 20 with which you are familiar, you would accept, wouldn't
 21 you, that this is actually quite a well organised, well
 22 run system?
 23 A. Certainly the way of recording the information in the
 24 PEAKs and KELs is a reasonably good system, yes.
 25 Q. Thank you. Now, I would like to ask you about something

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1 you say in your second report which is at {D2/4.1/176}.
 2 It is 5.186, Mr Coyne.
 3 A. 5 point what, sorry?
 4 Q. 5.186 at page 176 of the trial bundle.
 5 A. Yes.
 6 Q. You say:
 7 "At Dr Worden's paragraph 488 he suggests that
 8 serious bugs are rare in the KEL and PEAK records. I
 9 agree, they are rare in the KEL records because the
 10 purpose of KELs are to inform support personnel how to
 11 deal with historic problems, the PEAK's however do show
 12 many serious bugs as I have set out in Section 3 above."
 13 I would like to ask you what you mean by "the
 14 purpose of KELs are to inform support personnel how to
 15 deal with historic problems". Could you explain
 16 precisely what you mean by that?
 17 A. Yes. So the purpose of a KEL is that it is to provide
 18 knowledge for people who -- for SSC support people who
 19 might be searching for things. So if a problem arises
 20 they would search the KELs and either they will find
 21 a KEL that appears to be appropriate, and it shows that
 22 what has happened before has happened again and there
 23 might be instructions on how to deal with it.
 24 Alternatively if they don't find a KEL, they go through
 25 the process of creating a new one.

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1 Q. One possible implication that might be drawn from
 2 paragraph 5.186 is that if there is a bug which has
 3 an effect on branch accounts you will often not find
 4 a KEL that addresses it. But I would like to give you
 5 an opportunity to clarify whether that is what you are
 6 trying to imply or not. I may be reading too much into
 7 it.
 8 A. Because a KEL is a single source of a record of a bug,
 9 error or defect, what you will find is if the fault has
 10 occurred again they will refer back to the KEL and they
 11 will see that that fits their scenario. They often will
 12 not put the details of this particular scenario, this
 13 particular bug, error and defect, back in the KEL. The
 14 KEL is just the single source of knowledge for them to
 15 say, ah, it is that problem.
 16 Q. I see. So what you are saying is that if you get a bug,
 17 you generally speaking -- and of course there are
 18 always -- I'm not suggesting to you that anything is
 19 comprehensive -- but you are saying that generally
 20 speaking if you get a bug of that sort there will be --
 21 once it is detected, there will be a KEL which addresses
 22 it, yes?
 23 A. Yes.
 24 Q. But that KEL will generally address the first instance
 25 in which it arose?

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1 A. Yes.
 2 Q. And when there are other instances in which it arose the
 3 KEL won't necessarily address those?
 4 A. Won't necessarily. Sometimes you see it updated if they
 5 have got a slightly new manifestation of it, or there is
 6 some additional knowledge they have gained and they will
 7 add it to the KEL so that the next time it arises it
 8 might be helpful to the person, but there will only be
 9 one KEL.
 10 Q. I understand.
 11 A. There might be ten instances of that triggering and they
 12 will be in the PEAKs.
 13 Q. That's very helpful. So is this right, if there is
 14 a bug of that sort that's detected you are likely --
 15 there's likely to be a KEL which deals with it?
 16 A. Yes.
 17 Q. Which describes it, put it that way?
 18 A. Mm.
 19 Q. And if there are other manifestations of that bug that
 20 occur in a similar way, the KEL may well not refer to
 21 them?
 22 A. Yes.
 23 Q. But if the bug manifests itself in a slightly different
 24 way, in an odd way, then the KEL will be generally
 25 speaking -- there are always exceptions I am sure, it is

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1 a human system, but generally speaking there will be
 2 an amendment to the KEL to explain the new variance, to
 3 explain the new phenomenon, to enable the users to have
 4 a proper understanding of what they need to look for?
 5 A. That is right. Someone within SSC will decide whether
 6 to add to the KEL that's already there, or that it is
 7 significantly different so they will create a new KEL
 8 for it.
 9 Q. I think we can agree that in some cases KELs give quite
 10 a lot of information and can be very useful?
 11 A. Yes.
 12 Q. In other cases one needs to look at PEAKs to have
 13 a proper understanding of some details that may be
 14 relevant to the inquiry that we are undertaking now?
 15 A. Yes.
 16 Q. So it depends?
 17 A. It does depend. Sometimes a KEL will say: please record
 18 every occurrence of this that you see in this KEL, other
 19 ones you don't have that information.
 20 Q. That's very kind, Mr Coyne.
 21 My Lord, I wonder -- this is a convenient moment,
 22 I wonder whether we can break now and perhaps sit at
 23 1.50 pm. Would that be acceptable to your Lordship?
 24 MR JUSTICE FRASER: Yes. Do I detect an undercurrent of
 25 concern about time on your part?

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1 MR DE GARR ROBINSON: I always have an undercurrent,
2 my Lord.
3 MR JUSTICE FRASER: We will come back at 1.50 pm. Usually
4 it will be a minimum for an hour. It is not for me, it
5 is not for you, it is for the witness. But today,
6 because it is the first time it has arisen and you asked
7 so politely, we will come back at 1.50 pm.
8 MR DE GARR ROBINSON: I'm grateful, my Lord.
9 MR JUSTICE FRASER: Mr Coyne, usual arrangements.
10 A. Yes, my Lord.
11 MR JUSTICE FRASER: If you could come back for 1.50 pm
12 I would be very grateful.
13 Just one housekeeping point. My file of PEAKs and
14 KELs that were being referred to, obviously we can start
15 a new one now for the experts, but I just wouldn't like
16 that to be forgotten about.
17 So 1.50 pm.
18 (12.55 pm)
19 (The short adjournment)
20 (1.50 pm)
21 MR DE GARR ROBINSON: My Lord, good afternoon.
22 Good afternoon, Mr Coyne.
23 A. Afternoon.
24 Q. Let's see if we can agree some things. First of all,
25 can we agree that the parties aren't here spending all

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1 this time and money just to find out if Horizon could
2 have been improved, yes?
3 A. Yes.
4 Q. That might be important to understanding the background
5 to a particular claim by a particular claimant, but if
6 no bugs in Horizon caused any non-transient losses to
7 any claimants, we might as well go home, yes?
8 A. Yes.
9 Q. In those circumstances, would you agree with me that it
10 is useful to know, in fact it is necessary to know, in
11 this trial, about the likely impact of bugs that have
12 occurred in Horizon and whether that impact is likely to
13 have been transient or lasting?
14 A. Yes.
15 Q. That's what the Horizon Issues we discussed yesterday
16 are all about, isn't it? The extent to which it is
17 likely or unlikely for bugs to cause shortfalls for
18 which subpostmasters have been held liable?
19 A. Yes, I think the term is the extent to which it is
20 possible or likely, yes.
21 Q. And for that issue to be meaningful don't we have to
22 settle upon some metric for the likelihood of a bug
23 causing a lasting shortfall of that sort?
24 A. The metric I have adopted is to find whether there was
25 an actual bug, error or defect and see whether it had

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1 an impact. I don't believe there is any other metric.
2 Q. Don't you need a yardstick to have a proper measure of
3 extent? For example, the likely impact of bugs in
4 Horizon across all Post Office branches, the likely
5 impact in a single branch in a single month, the
6 likelihood impact across all claimant branches while
7 they held those branches? Wouldn't those be useful
8 yardsticks for the purposes of deciding extent?
9 MR GREEN: My Lord, I'm hesitant to rise, but we
10 specifically asked whether they were going to try to get
11 the third report in by the back door.
12 MR DE GARR ROBINSON: I have no intention of asking any
13 questions about that.
14 MR GREEN: That's one of the three questions that has just
15 been asked.
16 MR JUSTICE FRASER: Mr de Garr Robinson, your last question
17 is really a question for me, isn't it?
18 MR DE GARR ROBINSON: My Lord, it is a question about what
19 this expert witness has done in approaching the --
20 MR JUSTICE FRASER: If you do it by reference to his witness
21 evidence rather than by reference to submissions that
22 really amount to arguing the case in front of me, that
23 would probably be more useful.
24 MR DE GARR ROBINSON: My Lord, if I may, I would like to
25 follow my own course with my cross-examination of this

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1 witness.
2 MR JUSTICE FRASER: You can, but your last question to that
3 witness is an issue for me.
4 MR DE GARR ROBINSON: Now, Mr Coyne, can we also agree that
5 there is no realistic prospect of you or anyone else
6 examining, still less assimilating, every document
7 that's been disclosed in this case in relation to
8 Horizon and its operation over the last 20 years?
9 A. Yes.
10 Q. That left you and it left Dr Worden with a choice,
11 didn't it? You can make observations on the documents
12 you found which may not advance matters very far: here
13 are some bugs which caused shortfalls in some branch
14 accounts, so it follows that it is not just possible
15 that a bug has caused loss, it is a certainty. That
16 answers the question: is it possible or likely the bugs
17 have a potential to cause shortfalls, but it is not
18 an answer to the complete question, is it, because as we
19 have seen the Horizon Issues include questions of
20 extent?
21 A. Yes.
22 Q. To what extent is this likely or unlikely to happen in
23 branch accounts in Horizon? To what extent was the risk
24 faced by a user in Horizon high or low? Do you accept
25 that those are the sort of issues that are raised in

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1 this trial?
 2 A. Yes.
 3 Q. And to address extent, you can look at a limited portion
 4 of the evidence that you can sensibly review. You can
 5 assess its nature and scale and on the basis of those
 6 assessments you can arrive at overall conclusions that
 7 are generally useful, can't you?
 8 A. Yes.
 9 Q. An analogy with which we are familiar is an exit poll
 10 that is taken on the day of an election. Only a very
 11 small number of people are actually asked how they
 12 voted, but based on that sample useful estimates can be
 13 made about how all the voters voted, do you agree?
 14 A. Yes.
 15 Q. So you can move by a process of sampling from a position
 16 of relatively uninformative certainty, you know, knowing
 17 with certainty how 5% of people have voted, to
 18 a position of much greater certainty or much greater
 19 interest, namely what the actual outcome of the election
 20 is going to be, yes?
 21 A. I believe it would be an indicator, yes. Yes.
 22 Q. In order to be useful, do you agree that the sample you
 23 must choose needs to be an unbiased sample?
 24 A. Yes, in that scenario it would need to be an unbiased
 25 sample, yes.

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1 Q. So if you are trying to work out, for example, how
 2 voters have voted in an election it is no use just
 3 asking people coming out of voting booths wearing blue
 4 rosettes, is it?
 5 A. No, that is true. If you are going down the route of
 6 using sampling then you would have to make sure that
 7 that sample is unbiased.
 8 Q. Once you have an unbiased sample it then becomes
 9 possible, doesn't it, to scale up. So you can scale up
 10 the results that you have got from your unbiased sample
 11 and invite people, invite the court, to make judgments
 12 about what the overall likelihood of something happening
 13 or not happening is, do you agree?
 14 A. Certainly in your election scenario that would scale up
 15 with a reasonable tolerance, yes.
 16 Q. And that's what Dr Worden has done in his first report,
 17 isn't it?
 18 A. Yes.
 19 Q. And it is the sort of question that arises in a case of
 20 this sort where there are so many thousands of KELs and
 21 over 200,000 PEAKs and tens of thousands of OCPs, OCRs
 22 and MSCs, yes?
 23 A. Yes, there is an inherent danger with that in that with
 24 such a large sample size, and in the likelihood that it
 25 is a small fraction of the entirety of the transactions

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1 or branches that have suffered failure, that you might
 2 sample and not find any.
 3 Q. Yes, and there are well known statistical techniques for
 4 dealing with that problem, aren't there? So if you
 5 take -- how is it -- ten samples. The number of the
 6 samples you take will then determine how representative
 7 the results are that you are likely to get from
 8 attempting to scale up. Are you aware of how this
 9 works?
 10 A. Not really with what you have put to me there. Would
 11 you explain that a little bit further?
 12 Q. Let me see if I can put -- you will have to give me
 13 a moment, I'm afraid. Would you give me one moment?
 14 A. Certainly.
 15 MR GREEN: My Lord, I know my learned friend is worried
 16 about time. Mr Coyne has disavowed statistical
 17 expertise in his report.
 18 MR JUSTICE FRASER: If Mr de Garr Robinson wants to use his
 19 time exploring basic elements of statistical analysis
 20 I'm not going to stop him.
 21 MR DE GARR ROBINSON: My learned friend actually is quite
 22 right. Mr Coyne has disclaimed any ability or expertise
 23 in this, so let me move on.
 24 A. Certainly I have very little expertise. I have a broad
 25 ability to understand the concept.

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1 Q. So you have no expertise in what to do with samples and
 2 how to assess whether the sample can be
 3 effectively scaled up or not, is that right?
 4 A. Yes, I can see how that could be effective in certain
 5 scenarios, but I don't believe the scenario that the
 6 application here will work.
 7 Q. Well, isn't it actually what you are trying to do in
 8 your evidence as well, Mr Coyne? Aren't you saying:
 9 I found a number of bugs, and aren't you suggesting that
 10 an inference should be drawn that there could be a great
 11 number of other bugs that you haven't found yet?
 12 A. Yes, but it is from the basis of actually finding bugs
 13 and trying to identify how many branches may be impacted
 14 by those bugs, errors and defects.
 15 Q. What I'm suggesting to you is that when you find certain
 16 hits in your sample, because any sample is necessarily
 17 limited, your ability to be able to say that the court
 18 should scale up and should infer that there are likely
 19 to be a certain number of other hits, or an uncertain --
 20 a certain scale of other hits, that is dependent upon
 21 the quality of the sample that you have chosen in
 22 a particular -- whether it is an unbiased sample, yes?
 23 A. Yes, but in my report I haven't suggested any scaling up
 24 from particular bugs, errors and defects. I have talked
 25 about specific bugs, errors and defects and how many

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1 branches they are recorded to have impacted. There's no
 2 scaling applied to that.
 3 Q. Have you done that? Have you -- you say that you found,
 4 or I should say you say that there have been found 29
 5 bugs, yes?
 6 A. Mm.
 7 Q. Have you given any assessment of how many branches were
 8 affected by those bugs?
 9 A. Yes, Dr Worden and I in I think it is the second joint
 10 statement, the longest joint statement, that has the
 11 bugs in, we have a column in there that attempts to
 12 identify the number of branches that were impacted. And
 13 certainly some of the source documentation will indicate
 14 a number, it might not be the right number, but it does
 15 indicate whether it is 28 or 30 or 32.
 16 Q. What I would like to ask you to do, please, is to look
 17 at your original second report, not your revised
 18 version. This is {D2/4/43}.
 19 A. I don't have a paper copy of that.
 20 MR JUSTICE FRASER: You haven't?
 21 A. Not a paper copy. I will have the second.
 22 MR DE GARR ROBINSON: I'm only going to take you to one
 23 paragraph. It is 3.105. This is the original version.
 24 You have changed it in the revised version.
 25 A. Mm.

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1 Q. You say:
 2 "The PEAKs analysed below are a small portion of the
 3 PEAKs I have identified as causing financial discrepancy
 4 in branch accounts outside of those bugs acknowledged by
 5 Post Office. It should be noted there are potentially
 6 thousands more PEAKs that illustrate financial
 7 discrepancy arising in branch accounts, this is only a
 8 small selected sample from keyword searched PEAKs."
 9 A. Yes.
 10 Q. Now let's take this in stages. You have changed the
 11 wording of the first sentence and I will go to that
 12 change but I want to ask you about what the original
 13 version means first. What you are claiming there is
 14 that you have identified a large number of PEAKs
 15 recording bugs which cause branch shortfalls but you
 16 have only mentioned a small portion of them in your
 17 report.
 18 A. Yes.
 19 Q. That wasn't true, was it?
 20 A. No. By the conclusion of this report there was
 21 a substantial amount that was looked at.
 22 Q. In fact what you had done is you had identified every
 23 single bug that you could and included it in this
 24 report, hadn't you?
 25 A. Within the time available. I mean it is probably quite

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1 possible that there could well be more but we have
 2 certainly had a good search.
 3 Q. So what you say in the first sentence wasn't true, was
 4 it?
 5 A. No, my concern with the way that it read is that --
 6 I was saying that I had only analysed a small portion of
 7 the ones that had caused financial discrepancy.
 8 Q. What you are saying there -- what the words literally
 9 mean, Mr Coyne, is that you've analysed below a small
 10 portion of a larger group of PEAKs that you have
 11 identified as causing financial discrepancy?
 12 A. Yes.
 13 Q. And in fact that wasn't the case. What you did in your
 14 report was you included every PEAK you could, every PEAK
 15 that you were aware of as causing financial discrepancy,
 16 didn't you?
 17 A. Yes.
 18 Q. So this is an important paragraph. You will see that it
 19 is immediately under the heading "Horizon Issue 1
 20 PEAKs", so it is an introductory paragraph, it is
 21 introducing the reader to what comes next. It is not as
 22 if you wouldn't have paid attention to what was in this
 23 paragraph. I would just like to know what possessed you
 24 to make that extraordinary claim that wasn't true?
 25 A. Well, all the PEAKs hadn't been analysed, but of the

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1 portion that had been analysed there was a number that
 2 identified financial discrepancy.
 3 Q. Weren't you seeking to give an impression in that
 4 sentence that wasn't accurate?
 5 A. No, not at all, but I did see that it wasn't as clearly
 6 worded as it should have been.
 7 Q. And do you accept that this was corrected only after my
 8 instructing solicitors wrote to Freeths on 1st February
 9 asking for these other PEAKs to be identified?
 10 A. Yes, clarification was requested. Yes.
 11 Q. And shall we look at Freeths' response. It is at
 12 {C5/36/1}. This is Freeths' response to my instructing
 13 solicitor's letter. If we could go to page {C5/36/2},
 14 please. Picking it up at the bottom, paragraph 3, it
 15 sets out the sentence that we are talking about.
 16 Post Office's request is:
 17 "Please identify the full set of PEAKs that Mr Coyne
 18 has identified as causing financial discrepancy in
 19 branch accounts outside of those bugs acknowledged by
 20 Post Office."
 21 The response comes:
 22 "See response 2.2 above, see the 'yes' entries in
 23 the column ..."
 24 Then if we can go over the page {C5/36/3}:
 25 "Mr Coyne has considered this paragraph in his

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1 Supplemental Report and notes that his opinion has not
2 been articulated correctly in the sentence extracted in
3 your client's Request ..."

4 I'm sorry, my Lord?

5 MR JUSTICE FRASER: My screen has crashed yet again but I'm
6 going to deal with it. I still have the common screen
7 and I still have LiveNote, that's good enough.

8 MR DE GARR ROBINSON: "As is clear from the sentence which
9 follows it, Mr Coyne intended to refer to the fact that
10 he has only reviewed a small proportion of the total
11 PEAK documents disclosed. As such, Mr Coyne now
12 clarifies the meaning of this sentence as being: 'I have
13 analysed a small proportion of the PEAKS, from that
14 analysis, I have identified the following as causing
15 financial discrepancies in branch accounts outside of
16 those bugs acknowledged by Post Office '"

17 A. Yes.

18 Q. So was that your intention? Was that what you had
19 intended to say at paragraph 3.105 and by clumsy
20 drafting you had said something very different?

21 A. Yes, what I meant to say was in the second draft.

22 Q. Well, let's go to the second draft. That's at
23 {D2/4.1/45}.

24 I do believe I have the wrong page, I do apologise.

25 MR JUSTICE FRASER: No, you haven't. It is {D2/4.1/45}, it

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1 is indeed page 45 but it is in the next version.

2 MR DE GARR ROBINSON: {D2/4.1/45}, please. Here you say:

3 "I have analysed a small proportion of the PEAKs,
4 from that analysis I have identified the following as
5 causing financial discrepancies in branch accounts ...
6 It should be noted there are potentially thousands more
7 PEAKs that illustrate financial discrepancy arising in
8 branch accounts, this is only a small selected sample
9 from [the keyword searches] ..."

10 So knowing that it was being said that you have not
11 found anything like the PEAKs that you would need to
12 find even to begin to justify the claimants' claim,
13 because that had been said by Dr Worden in his first
14 report, hadn't it, you are now arguing in
15 paragraph 3.105 that this is only a small sample from
16 a large cohort and the small sample of bugs, the small
17 number of bugs that you found should be scaled up to
18 reflect the large size of the cohort, yes?

19 A. I'm saying that there is the potential.

20 Q. Could I suggest to you, Mr Coyne, that there's no basis
21 for taking the fact that you found a small number of
22 bugs in the PEAKs that you reviewed and inferring there
23 could be any number of bugs in the PEAKs that you
24 haven't reviewed because scaling up only works if you
25 have taken an unbiased sample, I think you have already

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1 agreed that, yes?

2 A. Yes, and that's why I'm not giving a view on what the
3 scaling might be. I'm saying that the potential exists.

4 Q. So you accept that you can scale up from, say, 200 PEAKs
5 or KELs to a cohort of 220,000 but only if the sample
6 that you have looked at is chosen at random. Would you
7 agree with that?

8 A. No, I don't agree with that, because this scaling is
9 starting from the basis that there was actual bugs,
10 errors and defects that did cause financial
11 discrepancies. So you are scaling up from a positive
12 position that there are records in there that do show
13 that and there's the potential for other ones to show
14 that.

15 Q. So what you are suggesting is that having found 29 bugs,
16 it is possible to scale up, it is possible to infer that
17 there are likely to be thousands more bugs in existence,
18 is that what you are saying?

19 A. There's certainly the potential to be.

20 Q. There is the potential. Because what interests me is
21 this concept of scaling up. The bugs that you found you
22 didn't find by reviewing a randomly selected sample, did
23 you?

24 A. No.

25 Q. You did the equivalent of asking everyone coming out of

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1 the polling station who was wearing a blue rosette,
2 didn't you? Because what did you do you were looking
3 for bugs that had that effect. You were positively
4 searching for and excluding all others. You were
5 searching for bugs that had particular characteristics?

6 A. It doesn't work when you try and relate it back to the
7 election scenario where the purpose of that is to try
8 and establish what the percentage of people voting would
9 be. In this scenario here we are, as I understand it,
10 trying to identify real bugs, errors and defects, so
11 that is what is -- what was done during this exercise.
12 And what I'm saying here is because I have only analysed
13 a small number of the totality of the PEAKs, then there
14 is the potential for many more to be in here.

15 Q. Could I suggest that the process that you have
16 undertaken -- first of all, perhaps we can agree this.
17 Do you agree that the sample, the small sample that you
18 describe, the small selected sample that you describe in
19 3.105, that isn't an unbiased sample, it isn't
20 an unbiased sample from which it is possible to scale up
21 anything?

22 A. It is certainly not an unbiased sample, that is correct.

23 Q. From which it is possible to scale up anything?

24 A. You wouldn't want to scale up from that and make any
25 numerical assumptions based on the -- however many,

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1 I think it was less than 10,000, but however many there
2 is, that that should be the number multiplied by that
3 percentage of the total number of PEAKs, you wouldn't
4 want to make that assumption.

5 Q. What I would like to understand, though, is why you
6 chose to say there are potentially thousands more PEAKs.
7 Why didn't you say dozens more or hundreds more? Why
8 did you choose to say thousands more PEAKs? It seems to
9 me, Mr Coyne, as if you are inviting the court to infer
10 that because you found 29 bugs from a small sample, it
11 is appropriate to think there could well be thousands
12 more out there that you haven't found, and I would like
13 to ask you why you think it is appropriate for the court
14 to think that?

15 A. I don't believe there is any more appropriate number to
16 put in there. Nothing would provide any precision in
17 there as to what the number could or should be.

18 Q. Are you suggesting that it is likely that there are
19 thousands more bugs of this sort?

20 A. No.

21 Q. In fact are you suggesting that -- well, are you
22 suggesting that it is more likely that there are
23 thousands than there are hundreds or dozens, for
24 example?

25 A. Yes, I don't -- I would think there would be more than

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1 dozens certainly .

2 Q. I'm interested that you should say that. So you are
3 suggesting -- you are now making a claim that having
4 found 29 you think there will be dozens more. Is that
5 right?

6 A. I certainly believe there would be dozens more, yes.

7 Q. And are you prepared -- but you are not claiming that
8 there could be more than -- that there are likely to be
9 more than dozens, that is not a claim you are making?

10 A. I don't know what the number would be but there
11 certainly is the potential for there to be thousands
12 more.

13 Q. By "potential", you are saying it is not impossible, are
14 you?

15 A. Sorry, say again?

16 Q. By "potential" you are saying -- sometimes when people
17 say "potential" they mean it is a really viable
18 possibility and close to a likelihood that something is
19 going to happen, other times they simply mean it is
20 simply not impossible. Potentially I could become Prime
21 Minister. It is possible although it isn't going to
22 happen. Other times I could say potentially I could
23 retire when I'm 65, and that would be -- it's not
24 certain but it is a real -- now, when you say
25 "potential" you mean not impossible, don't you?

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1 A. It is certainly not impossible and it is on the basis
2 that there are 200,000 PEAKs, whatever the exact number
3 might be, that haven't been reviewed. They weren't
4 responsive to the search terms that were selected at the
5 time.

6 Q. But here's what I don't understand, Mr Coyne. As you
7 explained very helpfully yesterday morning, you and your
8 team have spent a great deal of time using the
9 intelligent search functions that you have at your
10 disposal, which I rather envy, I have to say, in order
11 to find precisely these kinds of PEAKs and KELs?

12 A. Yes.

13 Q. And you are quite good at that. You are certainly
14 better than I would be. It is the entire *raison d'être*
15 of your e-disclosure business, isn't it, that you can
16 use what is in the trade called intelligent search
17 functions? In those circumstances isn't the fact that
18 you have only been able to find 20 bugs significant?

19 A. No, I don't believe so. Typically we would be and
20 I would be assisted by somebody within the organisation
21 who created the documents, that would be helpful with
22 things like particular error codes that might indicate
23 financial discrepancy, certain terminology in code and
24 things like that. None of those were provided. So
25 I was starting from the basis of just trying to come up

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1 with words and phrases that may be used, that may
2 indicate a discrepancy, that may indicate a defect,
3 an imbalance, but it is entirely possible that there are
4 words and phrases used that I'm not aware of.

5 Q. But I presume that by the phrase "intelligent search
6 functions" you include concepts such as once you have
7 started finding some and you see how they draft
8 themselves, you realise there are word patterns or
9 symbol patterns or report patterns, TPSC256, TPSC268A,
10 all those automatic report numbers which indicate
11 receipts and payments mismatches, or CRC failures, or
12 all the other issues that could be indicative of a bug.
13 That as you go along and as your knowledge of the PEAKs
14 and the KELs increases, you become better and better at
15 finding terms and symbols which will enable you to zero
16 in on the PEAKs and KELs that you are actually looking
17 for. Isn't that how it works?

18 A. That is how it works. One of the documents that
19 I requested very early on was a document that would
20 indicate where a financial impact has been discovered.
21 That was one of the very first documents. And that
22 simply wasn't provided, that request was --

23 Q. I'm sorry, why are you making that point?

24 A. Because that would have assisted with the searching that
25 I was doing at the time.

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1 Q. Mr Coyne, what document are you talking -- what document
2 did you request?
3 A. There was an RFI request that I put in, I think it was
4 in June or July --
5 Q. Right, and this RFI request was a request which was
6 designed to assist your search functions, was it?
7 A. Yes.
8 Q. And what did the request seek?
9 A. We have probably got the document, but it asked for
10 documents that were returned that would indicate that
11 a financial impact has been discovered.
12 Q. I have to say, it may be my fault, but I'm scratching my
13 head metaphorically, I don't recall that particular
14 request, but let's not waste any time on it.
15 Let me ask you a different question. My suggestion
16 to you is the fact that you have only been able to find
17 29 bugs, it is significant, because with or without the
18 document you just referred to you have found bugs which
19 you think do disclose a lasting shortfall for which
20 subpostmasters were made liable, is that right?
21 A. Yes.
22 Q. So you have seen how PEAKs and KELs relating to those
23 bugs are worded, yes?
24 A. Yes.
25 Q. So it is not as if you have been prevented from making

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1 choices about the form of words and symbols and so on,
2 not been prevented from alighting upon the kind of
3 searches you need to do in order to find the bugs you
4 are looking for, yes?
5 A. The process would have been far easier if the documents
6 that I had asked for would have been provided at the
7 time.
8 Q. Okay. Let's not talk about the process, let's talk
9 about what you have actually done.
10 A. Yes.
11 Q. Imagine for the sake of argument that your team's
12 intelligent service system were absolutely brilliant and
13 that it were perfectly qualified, having become really
14 familiar with the system and with all the reports that
15 are generated in the system and all the phrases that
16 tend to be used and so on, they were absolutely
17 brilliant at capturing evidence of bugs of the sort you
18 were looking for. Now if that were the scenario, the 29
19 bugs that have been found could be very close to the
20 absolute total number of bugs that are to be found in
21 the cohort of documents, couldn't they?
22 A. It is possible that that's the case. I think it is
23 highly unlikely but it is possible that that's the case.
24 Q. Then let's assume that you weren't quite that good. It
25 might be that you only got half of them or perhaps

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1 a third of them.
2 A. Yes.
3 Q. But doesn't, with all the intelligent search functions
4 that you have at your disposal and the people you have
5 to help you, doesn't the fact that only 29 have been
6 found strongly suggest that there aren't thousands more
7 bugs lurking in the PEAKs that you have been unable to
8 uncover?
9 A. It is certainly possible that the number is a lot less
10 than that, yes.
11 Q. I would suggest to you, Mr Coyne, that it is obvious
12 that if you have only been able to find 29 PEAKs there's
13 no way in the world that there are 100 times that number
14 of PEAKs out there that you have been unable to find?
15 A. There are hundreds of thousands of PEAKs and the impact
16 is not always described in the PEAK.
17 Q. Could you just answer my question before we can move on.
18 You have segued into the question of impact and I am
19 going to come to that.
20 A. Sorry, forgive me.
21 Q. But just focus on my question for a moment. Isn't it
22 obvious that however difficult the process has been,
23 that your team has not been so clumsy and incompetent
24 that it has only managed with all its intelligent
25 searches to find 1 in 100 of the bugs that are actually

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1 disclosed in the PEAKs and KELs that you have reviewed?
2 A. No, I do not think that's inconceivable.
3 Q. Can you say that again?
4 A. I don't think it is inconceivable that that might be the
5 case.
6 Q. You don't think it is likely, though, do you?
7 A. It would be a complete guess.
8 Q. Yes. Here's what interests me, Mr Coyne. Before we
9 broke for lunch I asked you some questions about the KEL
10 system and the PEAK system, and I'm afraid I don't have
11 the transcript in front of me, but I think you helpfully
12 agreed that if a bug was detected which had branch
13 impact it would -- the chances were, I think I may be
14 putting it slightly too low, that it would be likely to
15 be addressed in a KEL somewhere, yes?
16 A. A PEAK somewhere.
17 Q. A KEL. We were talking about KELs at that time.
18 A. Sorry, could you put your question again then.
19 I thought you --
20 Q. Perhaps I should look at the transcript. Could we go
21 back to just before we broke. Would you give me
22 a moment, please.
23 A. Certainly.
24 Q. If we could go to page {Day15/94:21} of today's
25 transcript, please.

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1 MR JUSTICE FRASER: Of which page, sorry?
 2 MR DE GARR ROBINSON: 94, my Lord.
 3 MR JUSTICE FRASER: 94, line 21.
 4 MR DE GARR ROBINSON: I ask a question. I say:
 5 "I see. So what you are saying is that if you get
 6 a bug, you generally speaking -- and of course there are
 7 always -- I'm not suggesting to you that anything is
 8 comprehensive -- but you are saying that generally
 9 speaking if you get a bug of that sort there will be --
 10 once it is detected, there will be a KEL which addresses
 11 it, yes?
 12 A. Yes.
 13 Q. And you said "Yes".
 14 A. Yes.
 15 Q. You are not withdrawing that evidence, are you?
 16 A. No, no.
 17 Q. So we have this situation. We have if there is a bug
 18 that has been detected, the chances are it is going to
 19 be described in a KEL somewhere, yes?
 20 A. Yes, if it has been detected, yes.
 21 Q. And there aren't 220 KELs, are there, there are
 22 something like 9 and a bit thousand, is that right?
 23 A. Yes.
 24 Q. And we know that even by the time of your first
 25 report --

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1 MR JUSTICE FRASER: Just give me literally 30 seconds.
 2 MR DE GARR ROBINSON: Of course, my Lord.
 3 (Pause)
 4 MR JUSTICE FRASER: It is all right. Go ahead,
 5 Mr de Garr Robinson.
 6 MR DE GARR ROBINSON: At the time of your first report we
 7 know you had already reviewed yourself 5,114 KELs, yes?
 8 A. Mm.
 9 Q. And members of your team had, would I be right in
 10 thinking, I may have specifically asked you this, and if
 11 so I'm sorry to be going over it, but members of your
 12 team would have reviewed other KELs in addition to that?
 13 A. Yes.
 14 Q. And since your first report you would have looked at
 15 further KELs on top of the --
 16 A. Yes.
 17 Q. And I think I asked you how many you had reviewed and
 18 you said you were unable to tell me. That's my
 19 recollection but forgive me if I'm wrong.
 20 A. No, I think that is right.
 21 Q. Right. So you have looked at more than 5,114 KELs.
 22 Would I be right to infer you probably looked at more
 23 than 6,000?
 24 A. No, it probably is between 5 and 6,000.
 25 Q. And your team had looked at others as well. Are you in

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1 a position to give any kind of assessment of how many
 2 other KELs they are likely to have looked at?
 3 A. It will likely be probably 1,000 more or something like
 4 that.
 5 Q. Okay. So you and your team collectively have looked at
 6 something like between 6 and 7,000 KELs out of a total
 7 of, what, 9,500, that kind of figure? Yes?
 8 A. Mm.
 9 Q. And yet all that has been found is 29 bugs, correct?
 10 A. Yes.
 11 Q. Isn't that a significant indication, Mr Coyne? Doesn't
 12 it suggest quite strongly that the chances are that the
 13 total number of bugs that are out there are not going to
 14 be in the thousands. In fact there are unlikely to be
 15 more than perhaps twice as many in the entire cohort of
 16 KELs, would you agree?
 17 A. That have an impact on branch accounts, yes.
 18 Q. Yes. And if one then were to assume that some error
 19 factor, let's assume there are some PEAKs that don't
 20 make it through to KELs, that's not going to account for
 21 very many, is it, because most of the time you would
 22 expect the PEAK to have resulted in a KEL as soon as the
 23 problem was discovered?
 24 A. Yes.
 25 Q. So actually, just ignoring the PEAKs for a moment, in

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1 that you have reviewed, you and your team, over 6,000
 2 KELs, so more than two-thirds of the available KELs --
 3 A. Yes.
 4 Q. -- and you found, between you and Dr Worden, 29 bugs --
 5 A. Yes.
 6 Q. -- wouldn't it be fair to infer that the total number of
 7 bugs to be found in those KELs is likely to be less than
 8 40?
 9 A. Yes, that sounds reasonable. I'm just concerned that
 10 the confusion here is between KELs, which document
 11 a single instance of a bug, and a PEAK which is what we
 12 are referring to here, which shows how many times that
 13 bug has had an impact on the Horizon system.
 14 Q. So let's take this in stages. Two questions raised.
 15 The first one is how many bugs? The second one is how
 16 many impacts and what's the nature of their impacts?
 17 A. Yes.
 18 Q. Both questions are important building blocks in order to
 19 arrive at an assessment of extent, yes?
 20 A. Yes.
 21 Q. Thank you. I think you have agreed that the chances
 22 are, as a result simply of your examination of KELs,
 23 that there are likely to be no more than 40 bugs which
 24 have been found to have branch impact, yes?
 25 A. Bugs, errors and defects, yes.

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1 Q. So we move on to the next question which is what was the
2 impact of these 40 bugs? What you say is -- and I fully
3 understand it -- that you can't get that from KELs, you
4 get that from PEAKs.
5 A. Yes.
6 Q. But here's the interesting thing: because you have got
7 the KEL, actually the KEL operates as a really useful
8 way of looking for PEAKs to which the KEL is relevant,
9 doesn't it?
10 A. Yes, you will often see the link between the two.
11 Q. Quite often, as you fairly say, there is actually
12 a specific link made between the PEAK and the KEL, and
13 you can search for PEAKs and the PEAKs will -- this
14 would be right, wouldn't it: PEAKs invariably refer to
15 the KELs to which the problems they address are
16 relevant, yes?
17 A. Yes. There is a better quality of link from PEAKs to
18 KELs. There's not always that link KEL back to PEAK.
19 Q. But this is where the beauty of intelligent searching
20 comes in, isn't it? Because you can intelligently
21 search through the body of PEAKs, having identified all
22 the relevant KELs, and there may be a number of them,
23 there may be one KEL and perhaps two or three others
24 that are also relevant, you search for all the PEAKs
25 which refer to those KELs, don't you?

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1 A. Yes.
2 Q. And by that means you are going to get actually quite
3 a good sense of -- you are going to get a good hit rate.
4 You are going to find most, probably more than most, of
5 the PEAKs considering problems which those KELs address,
6 yes?
7 A. It is entirely possible to do that, yes.
8 Q. I'm not asking you whether it is possible, I'm
9 suggesting that it is likely that if you undertake that
10 search you will actually find all the PEAKs that are
11 relevant -- that exist that are relevant to the problem
12 addressed in the KEL?
13 A. Yes.
14 Q. So you have identified 29 bugs, you do your searches for
15 all the PEAKs, and by that means you can identify all
16 the PEAKs which record manifestations of the bug. It's
17 likely, I'm going to use the word "likely". I'm not
18 suggesting it can be entirely comprehensive, Mr Coyne.
19 So can we take it as read that obviously there are going
20 to be gaps at the margin, aren't there?
21 A. Yes. A PEAK is typically created when the bug, error or
22 defect gets to SSC within Fujitsu. So there may be
23 others that don't get there, but once they get to third
24 line support the PEAK is created, so yes.
25 Q. So by this means you were in a good position both to

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1 identify bugs that have been detected in the system --
2 A. Yes.
3 Q. -- quite reliably, so with a fair degree of confidence
4 that there won't be that many more bugs in the system?
5 A. As long as they hit the search terms that I have used,
6 yes.
7 Q. Remember we are talking about the KELs now. The
8 starting point for the process that I have described is
9 the KELs.
10 A. Yes.
11 Q. And you've physically reviewed those KELs, haven't you?
12 A. Yes.
13 Q. So it is not as if you need intelligent search terms to
14 find the right ones, you have actually looked at them,
15 haven't you?
16 A. Yes.
17 Q. So by physically looking at them you found however many
18 bugs you found, I think it was -- it must be somewhere
19 below 20 because of course of the 29 there were also
20 bugs that were accepted by Post Office and there were
21 the bugs that were found by Dr Worden as well. So you
22 found -- if I suggest to you that you found around in
23 the late teens, would that figure sound about right to
24 you?
25 A. I believe that the figure in the second report was 28,

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1 was it?
2 Q. 28. Well, that would include the bugs that have been
3 found by -- that have been admitted --
4 A. Yes, it did --
5 Q. -- by Post Office, yes?
6 A. -- the three --
7 Q. And it would include bugs that have been identified by
8 Dr Worden in his report?
9 A. Yes.
10 Q. Let's not quibble about numbers. The point is by that
11 process I think you have accepted that it is
12 a relatively reliable process by which you will have
13 successfully identified the large majority of the bugs
14 that have been identified by the SSC during the
15 operation of the PEAK and KEL system?
16 A. Yes.
17 Q. What's more, because having done that you can then look
18 through the PEAK system, you have the ability to
19 identify all the PEAKs which represent manifestations of
20 those bugs?
21 A. Yes.
22 Q. And those PEAKs identify -- where there are branch
23 effects those PEAKs generally will identify the branches
24 affected, yes?
25 A. Generally but not always.

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1 Q. Generally speaking, if a branch has a problem then the
2 PEAK will identify the FAD code of the branch, correct?
3 A. No, that's not always the case. They will typically say
4 this might have an impact on branch accounts. They will
5 sometimes list a FAD code. They will sometimes refer to
6 a branch by name or location.
7 Q. I see. Let me park that issue until another day. But
8 in any event by this means, by moving from the PEAKs to
9 the KELs, you have quite a good method of identifying
10 the number of instances in which branches have been
11 affected by the relevant bug, yes?
12 A. Yes.
13 Q. Perhaps half an hour ago you gave me an answer which
14 surprised me. I wasn't expecting it. You indicated
15 that in the bug table in joint statement 2 there was
16 a column which indicated what the extent of each of your
17 bugs were, in other words the number of branches that
18 were affected by each of your bugs. Did I misunderstand
19 your answer?
20 A. It is either in the joint statement 2 or it is in the
21 report 2.
22 Q. You see, I'm struggling to understand what you are
23 talking about. It may be my fault. But I'm not aware
24 that anywhere -- that you have anywhere given any
25 evidence as to how many branches you think were affected

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1 by any particular bug. Have I misunderstood your
2 evidence?
3 A. It certainly is in here. There is an attempt to
4 identify how many branches may have been impacted by
5 that defect.
6 Q. It would be helpful if you could tell me because it
7 might save some time tomorrow or the day after. Should
8 I be looking at the joint statement?
9 A. Yes, if you look at joint statement 2. So the page
10 where the actual table starts, index 1 on the left-hand
11 side. Then it says receipts and payments mismatch, the
12 year, and then it says:
13 "Coyne's opinion as to branch account impact ...
14 identified approximately 60 branch accounts ..."
15 Q. That's because Post Office had identified 60 branches.
16 But if we go --
17 A. If you go down for example to number 5, 14 examples of
18 branch impacted.
19 Q. Oh, I see, and we have got 57 branches impacted. For
20 6.2 it's one branch impacted.
21 That's very helpful, Mr Coyne, and by saying it is
22 very helpful I'm of course conveying that I obviously
23 haven't read this table properly.
24 What's interesting about it, though, is that the
25 numbers of branch impacts you are talking about are

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1 relatively low, aren't they? I mean even 60 branches.
2 So if we take the receipts and payments mismatch, 60
3 branches affected. 60 branches out of 30 million
4 monthly accounts, that represents a 1 in 5 million
5 chance of a bug impact on a given set of accounts,
6 doesn't it?
7 A. You have used two different variables there. You have
8 used branch accounts --
9 Q. Yes.
10 A. -- and you have applied that to branches. If 60
11 accounts are impacted should that not be compared
12 against the total number of branches?
13 Q. Are you suggesting that when 60 branch accounts are --
14 so what you have done here is you have indicated how
15 many branches were impacted, but are you suggesting that
16 lots of these branches were impacted on lots of
17 occasions, is that --
18 A. No, I was responding to your -- you gave me an example
19 of why it was low.
20 Q. Yes. My suggestion to you, Mr Coyne, is that in
21 circumstances where you have got a bug that affects 60
22 branches?
23 A. Yes.
24 Q. And let's say it affects 60 branches on one occasion
25 each, sometimes it will be more, but let's assume it is

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1 on one occasion each. If you look at the entire corpus
2 of monthly branch accounts, which is 3 million over
3 20 years, then of the 3 million branches that will have
4 been affected -- or that could have been affected,
5 I should say, 60 will have been affected.
6 A. Yes.
7 Q. Which means it has a 1 in 5 million chance of hitting
8 any given branch that you are looking at at any --
9 A. On any given month. That may well be right, yes.
10 Q. Okay. Thank you.
11 MR JUSTICE FRASER: But that's where his evidence was to
12 where he had identified the numbers.
13 MR DE GARR ROBINSON: My Lord, I see that.
14 So moving back to my line of questioning, I was
15 asking you whether finding only 29 bugs strongly
16 suggests that there aren't thousands more bugs in the
17 system in the way that you seem to suggest at paragraph
18 3.105?
19 A. No, but that's referring to "potentially thousands more
20 PEAKs". PEAKs are occurrences of bugs.
21 Q. I see. But I thought -- I may have misunderstood your
22 evidence then, Mr Coyne, because I thought you just told
23 me that once you had a KEL identifying a particular bug
24 it is relatively easy to find all the PEAKs to which
25 that KEL is relevant, yes?

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1 A. Yes.
 2 Q. And I think you established with me that you had done
 3 that and that the result of that process is the column
 4 in joint statement 2 that we have just been looking at?
 5 A. Yes.
 6 Q. Could I ask you, Mr Coyne, if you were to add up all the
 7 PEAKs that are referred to in that second column in
 8 joint statement 2, will it demonstrate that there are
 9 thousands more PEAKs that are relevant?
 10 A. I would have to go through and add them up. It is not
 11 something that I have done at this stage.
 12 Q. You are making a claim here, Mr Coyne, that there could
 13 be -- you don't just say -- yes, "potentially thousands
 14 more PEAKs". But even when you wrote that sentence you
 15 had it in your power to actually work out how many more
 16 PEAKs we are talking about, didn't you?
 17 A. No, I have worked out the number of PEAKs that relate to
 18 the KELs and the numbers will be in here. But there
 19 could well be many more PEAKs that don't have the
 20 references to the KELs.
 21 Q. Well, aren't you contradicting some evidence you gave to
 22 me a few minutes ago, Mr Coyne, in order to preserve
 23 your position on that second sentence? Because before
 24 I think you told me that once you identify a KEL it is
 25 actually quite easy to then find all the PEAKs to which

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1 the KEL is relevant.
 2 A. Yes, that is right.
 3 Q. Right. So the simple fact is that in order to
 4 demonstrate the truth of the statement:
 5 "... there are potentially thousands more PEAKs that
 6 illustrate financial discrepancy ... in branch accounts
 7 ..."
 8 All I have to do is go to column 2 of joint
 9 statement 2 and add up all the numbers. Do you think
 10 there is a remote possibility of all those numbers
 11 coming to thousands, plural?
 12 A. No, I don't believe -- I'm just looking through now to
 13 see if there's any that has an impact on ... It is
 14 possible that there is a PEAK that has an impact on, for
 15 example, 100 branches but I don't know whether that's
 16 the case or not, we would have to look through.
 17 MR JUSTICE FRASER: One says 88, I think.
 18 Mr de Garr Robinson, do you want the witness to do
 19 a more detailed arithmetical analysis of that column, is
 20 that what you are asking him to do?
 21 MR DE GARR ROBINSON: My Lord, I'm asking the witness to
 22 accept that in actual fact, having done all the work
 23 that he has done, and having produced the results which
 24 are now recorded in the second column which I freely
 25 admit I haven't fully understood and I'm grateful for

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1 Mr Coyne's clarification, it doesn't get anywhere near
 2 thousands more PEAKs.
 3 MR JUSTICE FRASER: So, Mr Coyne, that was a question to
 4 you.
 5 A. I'm content with the answer that I have given that there
 6 is the potential for there to be up to 1,000 PEAKs
 7 because you don't -- you only need to find a few more
 8 KELs that have impacts such as the bug, error or defect
 9 that impacted 88 branches to get to 1,000.
 10 Q. Here's what's interesting, Mr Coyne. What we have is
 11 what might be called an example of evasion. The claim
 12 you make in 3.105 is that there are potentially
 13 thousands, plural, more PEAKs, and do you see what you
 14 did with your answer? You went down to up to 1,000 in
 15 order to maintain your position.
 16 What I'm suggesting to you is on the very process
 17 that you have described to this court, on oath, and your
 18 explanation of the documents and how they work and the
 19 kind of things that they show and the things that they
 20 are likely to contain, it stands to reason as night
 21 follows day that there are not thousands more PEAKs in
 22 the PEAK corpus that illustrate financial discrepancy
 23 arising in branch accounts, would you accept that?
 24 A. I don't accept that. I don't accept that that position
 25 that there are potentially thousands more is incorrect.

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1 Q. Well, I'm not sure I can go any further with this at
 2 this point, Mr Coyne.
 3 Let's analyse other examples where you use words
 4 suggesting that things happened on a large scale where
 5 in fact that might not be the case. Can we go to your
 6 first statement {D2/1/38}, please. At paragraph 3.18 --
 7 A. Sorry?
 8 Q. Of your first report.
 9 MR JUSTICE FRASER: 28. I think you said 38.
 10 MR DE GARR ROBINSON: I'm so sorry.
 11 MR JUSTICE FRASER: Let's go to 28.
 12 MR DE GARR ROBINSON: {D2/1/28}. At 3.18:
 13 "Many ... (KELs) identify that not all errors were
 14 understood even by Fujitsu. In the circumstances, it is
 15 highly unlikely that a Subpostmaster could interpret or
 16 identify the causes of any bugs/errors or defects when
 17 Fujitsu themselves often did not understand the cause of
 18 such or their full effects."
 19 So you have got another use of the word "often", do
 20 you see that?
 21 A. Yes.
 22 Q. And no indication is given of the scale of the word
 23 "many" or the scale of the word "often", what kind of
 24 numbers you are discussing. Would you agree with me,
 25 Mr Coyne, that 10, for example, is hardly material given

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1 the scale of Horizon and the long period over which it
 2 has been in operation, yes?
 3 A. 10 KELs?
 4 Q. Yes.
 5 A. When you say it is material? I don't --
 6 Q. Let me change the question. Use of words like "many"
 7 and "often" are capable of being really dangerous,
 8 aren't they, because they are capable of giving
 9 an impression unless you are clear about the scale of
 10 the occasions which you believe to be shown by the
 11 evidence, yes?
 12 A. Yes.
 13 Q. And what scale -- when you say "many" and when you say
 14 "often", what scale of numbers are you referring to in
 15 that paragraph, can you recall?
 16 A. No, I can't recall. There is a number.
 17 Q. In paragraph 5.64 at page {D2/1/71} of the same
 18 document, the last sentence in that paragraph:
 19 "I have noted that hardware replacement often seemed
 20 to be a 'fix' of last resort where no other explanation
 21 could be given, and therefore there is certainly a
 22 possibility that hardware was at fault."
 23 Now you see there is a footnote there. Do you see
 24 that, footnote 88?
 25 A. Yes.

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1 Q. Perhaps we could have a look at that, it is {F/178/1}.
 2 This is a KEL, it is dated -- it was raised on
 3 18th November 1999, so it is very early in the life of
 4 Horizon.
 5 A. Yes.
 6 Q. It was last updated in January 2004.
 7 A. Yes.
 8 Q. Under "Solution" -- and I see again that Atos is
 9 referred to, which is very curious because Atos wasn't
 10 on the scene for years until after 2004 and I do rather
 11 think that there must have been some word-processing
 12 change made at some point, I don't know how.
 13 It says:
 14 "This appears to be either the PM is typing ahead of
 15 themselves and the system suddenly catches up, or
 16 keyboard or screen fault generating spurious key
 17 presses. Recommend that the PM tries not to type ahead
 18 of the system (or to press the same key a number of
 19 times if there appears to be no response from the
 20 system) or to replace the keyboard and/or screen. PM
 21 should select existing. This functionality has been
 22 removed from CI4 ..."
 23 Which I think would be a release. So there came
 24 a point at which it was no longer a problem, yes?
 25 A. Yes.

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1 Q. Now, that's one example of a possible hardware fault,
 2 yes?
 3 A. Yes.
 4 Q. How can that justify the claim that you make here that
 5 hardware replacements are often a fix of last resort?
 6 A. Well, there's a number of other examples. There is the
 7 phantom transactions example where hardware was changed
 8 because it was -- they were trying to work out whether
 9 it was environmental issues or not that were causing
 10 erroneous transactions. There are a number of examples.
 11 There is only one cited here but there are a number of
 12 examples throughout the report.
 13 Q. Are we talking about five examples or are we talking
 14 about 100 examples?
 15 A. There will certainly be five examples that --
 16 Q. I see. So there "often" means something in the region
 17 of five, does it?
 18 A. Yes.
 19 Q. Then if we move on to page 97, paragraph 5.161
 20 {D2/1/97}:
 21 "Whilst both Horizon and Horizon Online contain a
 22 number of measures and controls designed to check system
 23 integrity, these mechanisms have been shown to have
 24 failed. This is a point agreed upon in the Joint
 25 Statement. It has been identified that known

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1 issues/bugs were often deferred and dealt with on a
 2 cost/benefit basis."
 3 That is a paragraph that we have discussed before
 4 and I have already suggested to you that the evidence
 5 gives no basis for claiming that it happened "often".
 6 But more importantly, I would like to ask you what
 7 you mean by "often" in that sentence. Again you give no
 8 scale, no sense of how many times we are talking about.
 9 Are we talking about five times, ten times, a hundred
 10 times?
 11 A. Quite a few times. There is a document that looks at
 12 defect deferment, so a number of defects have been
 13 identified but they are deferred to be dealt with later,
 14 although they acknowledge that they could have an impact
 15 on branch. This was the point that we discussed
 16 yesterday.
 17 Q. This is the handful of PEAKs that you provided to me
 18 this morning, is it?
 19 A. Yesterday we were taken to an incorrect reference in the
 20 document and --
 21 Q. Do you mean a document you had incorrectly referred to
 22 in your statement or did I take you to a wrong document?
 23 Because if it is the latter, I'm terribly sorry.
 24 A. Sorry, I think it was as a result of -- Mr Green
 25 interjected and directed to a document, but the document

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1 wasn't provided at the side of Magnum, so we should have
 2 gone to the footnote. I would like to go there if
 3 that's possible.
 4 Q. I'm afraid I don't actually know what you are talking
 5 about. Does Mr Green?
 6 MR GREEN: My Lord, I didn't want to press my intervention
 7 yesterday. I will explain it in re-examination. But
 8 5.166 is the paragraph which gives context to what
 9 I mentioned yesterday.
 10 MR DE GARR ROBINSON: The document we looked at just before
 11 we broke?
 12 MR GREEN: No, it is the release note.
 13 MR DE GARR ROBINSON: Oh, I see.
 14 MR GREEN: In the context of which there is an example.
 15 MR DE GARR ROBINSON: Very good.
 16 So in answer to my question what's the scale of
 17 "often" in that sentence, what would your answer be?
 18 What sort of number of cases are we talking about?
 19 A. A number, it will be the number that's actually
 20 contained within that document at footnote 156.
 21 Q. Okay. So the answer is to be found in that footnote, is
 22 it? Thank you, I will look at that later.
 23 Let's move on to your second report at {D2/4.1/14}.
 24 If we could go to page 14. At paragraph 3.13 you say:
 25 "For example, it appears that PEAKs are often closed

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1 or suggested to be closed if analysis has paused or has
 2 not uncovered a full diagnosis despite the Subpostmaster
 3 and/or Post Office not having a conclusion. It is also
 4 not always clear whether a Subpostmaster was informed
 5 ..."
 6 Then at the end you say:
 7 "I have seen PEAK records that are closed despite
 8 support not being able to diagnose a root cause whilst
 9 acknowledging that there clearly is some form of
 10 error ..."
 11 A. Yes.
 12 Q. You will I think recall that my instructing solicitors
 13 wrote to Freeths to ask which PEAKs were being referred
 14 to.
 15 A. Right.
 16 Q. If we could look at {C5/36/1}, please. Go to page
 17 {C5/36/2}, paragraph 1. Here is Freeths' answer to that
 18 question. The question is:
 19 "Please identify the ... PEAKs [referred to in that
 20 paragraph]."
 21 And the answer comes, there are nine PEAKs referred
 22 to. Do you see that?
 23 A. Yes.
 24 Q. I don't have time to take you to them, there are
 25 subtleties in those documents which might otherwise be

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1 put. But are you aware that of those nine PEAKs there
 2 have been only two examples since 2002?
 3 A. I don't understand the question. So within those
 4 PEAKs --
 5 Q. Of the nine, seven of them occurred between 1999 and
 6 2001.
 7 A. Right.
 8 Q. One is from 2012 and one is from 2017.
 9 A. Right.
 10 Q. So the truth is that over the past 17 years this has
 11 happened, or there are PEAKs showing this as having
 12 happened twice, yes?
 13 A. Yes, okay.
 14 Q. Bearing in mind you are making a claim about these
 15 things often happening, could I suggest to you it might
 16 have been helpful and balanced for you to have indicated
 17 that that was the position?
 18 A. Yes.
 19 Q. That most of these occasions occurred during the very
 20 early years of the original Horizon. Do you accept
 21 that?
 22 A. Yes, it would have been helpful to include that.
 23 Q. If I can take you to another example just before we
 24 break. At 5.108 at page {D2/4.1/156} it is said:
 25 "At paragraphs 251 to 257 of his report, Dr Worden

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1 refers to the concept of 'User Error Correction'
 2 enabling the facility of correcting many software
 3 errors. It should be noted that this would not apply to
 4 any bugs/errors and defects unbeknownst to Fujitsu or
 5 the Subposmaster. It is evident from the PEAK analysis
 6 that often bugs lay undetected for weeks, months or
 7 years."
 8 My instructing solicitors wrote in the letter that
 9 we have just discussed, wrote a letter asking which
 10 PEAKs show that happening, and the response came at
 11 paragraph 9.2 of the letter, that's {C5/36/5}.
 12 The answer was:
 13 "Please refer to Mr Coyne's Supplemental Report
 14 (particularly paragraph 3.26 to 3.54) which sets out
 15 commentary in respect of various bugs ..."
 16 Now paragraphs 3.26 to 3.54 are the section which
 17 I think is headed "Acknowledged Bugs" but it is actually
 18 the four bugs, the four main bugs, that you focus on in
 19 your report, namely the three bugs identified by
 20 Post Office plus Dalmellington. Do you remember that?
 21 A. Yes.
 22 Q. No particular reference is made to any other bug in this
 23 context. How many other bugs do you say lay undetected
 24 for weeks, months or years?
 25 A. Well, there was certainly Dalmellington.

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1 Q. Yes, that's one of the bugs referred to in those
2 paragraphs. Let's not worry about weeks because one can
3 understand why it may take time for a bug to be
4 detected, but months or years. In your list of 29 how
5 many other bugs lay undetected for months or years, can
6 you tell me?
7 A. I can't. I would have to go through and --
8 Q. Could you give me a scale? Between one and four? Ten?
9 Any idea at all? It is just that by using the word
10 "often" it suggests to me that you have a clear idea in
11 your head, Mr Coyne.
12 A. Well, I will have had a clear idea in my head, I just
13 don't know what the actual number is now that you are --
14 Q. An approximate number, a scale. Can you give me any
15 indication?
16 A. No, I would prefer to work it out properly and give you
17 a proper answer to that.
18 Q. That is entirely fair.
19 Let me ask one last question before the break. In
20 relation to bugs that are detected after a period of
21 time there's evidence showing, I am sure you all agree,
22 that investigations are undertaken by Fujitsu to ensure
23 that all the branches that are affected in the meantime
24 are identified, are you aware of that evidence?
25 A. Yes.

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1 Q. It is said that this is a standard process undertaken by
2 Fujitsu when they identify a bug that could affect
3 branches, yes?
4 A. Yes.
5 Q. Do you have reason for thinking that that has not
6 happened in any number of cases?
7 A. I am aware of one where the data was no longer available
8 to investigate it.
9 Q. Which bug was that?
10 A. I would have to find the example. It is in the report.
11 Q. I see.
12 A. I would have to find the example. I know that on
13 Dalmellington there was I think at least two occurrences
14 where Fujitsu weren't able to identify what the impact
15 actually was. They were able to identify the number of
16 branches --
17 Q. We will come to Dalmellington. So it is Dalmellington
18 and one other, those are two examples you are aware of,
19 is that right?
20 A. I've certainly got an example of another, yes.
21 Q. Are you aware of any other examples of this not
22 happening?
23 A. No.
24 MR DE GARR ROBINSON: My Lord, I don't know whether this
25 would be a convenient moment?

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1 MR JUSTICE FRASER: We will come back at 3.15 pm. 10
2 minutes.
3 (3.05 pm)
4 (A short break)
5 (3.15 pm)
6 MR DE GARR ROBINSON: Mr Coyne, I would like to suggest to
7 you that ultimately the main number in this case is the
8 impact, the financial extent of bugs in Horizon, do you
9 agree?
10 A. Yes.
11 Q. But it is interesting that you don't address that in
12 your reports, do you?
13 A. The actual amount of the impact?
14 Q. Yes.
15 A. No.
16 Q. You have not been prepared to venture any figure which
17 estimates the total impact in financial terms of bugs in
18 Horizon, yes?
19 A. That is right, yes.
20 Q. Might I suggest that with your experience of IT risk
21 analysis, you are perfectly capable of setting out at
22 least in broad terms a view of the extent of the losses
23 caused by the bugs that you have identified?
24 A. The best that I could do would be to go through the
25 PEAKs and write down the numbers that were said to be

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1 wrong but I do not think that would be a very
2 satisfactory way of doing it.
3 Q. What I suggest to you is that if you were to do that
4 process or perform any judgment at all as to financial
5 impact, you wouldn't find a number which remotely
6 supports the claimants' case, would you accept that?
7 A. I haven't looked at the detail of the claimants' case.
8 MR JUSTICE FRASER: Just hold on one second.
9 Mr de Garr Robinson, are you pursuing those
10 questions as part of what ought to have been done on
11 particular Horizon Issues or just as a general umbrella
12 question?
13 MR DE GARR ROBINSON: Both.
14 MR JUSTICE FRASER: As a general umbrella question it is not
15 a question for the witness. But if you want to pursue
16 it in terms of: to answer this Horizon Issue properly
17 you ought to have done that, then you should do it by
18 reference to the Horizon Issues.
19 MR DE GARR ROBINSON: Well, my Lord, I'm putting my case to
20 the witness and that case is based upon what's in
21 Dr Worden's expert report.
22 MR JUSTICE FRASER: No, I --
23 MR DE GARR ROBINSON: To which I will be coming in due
24 course.
25 MR JUSTICE FRASER: Mr de Garr Robinson, this witness is

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1 giving evidence on the Horizon Issues.
 2 MR DE GARR ROBINSON: Yes.
 3 MR JUSTICE FRASER: I'm not saying don't put it, I'm saying
 4 if you are doing it in terms of: in order to address the
 5 Horizon Issue correctly, you need to identify it by
 6 reference to a Horizon Issue.
 7 MR DE GARR ROBINSON: My Lord, I have a case to put which is
 8 based upon my expert's report. The questions I am
 9 putting are establishing the building blocks for putting
 10 that case and I would be obliged if your Lordship would
 11 let me do that.
 12 MR JUSTICE FRASER: But Mr de Garr Robinson, the two experts
 13 have approached each of their separate -- the same
 14 exercise, they have approached it in different ways.
 15 MR DE GARR ROBINSON: Yes.
 16 MR JUSTICE FRASER: That's the point.
 17 MR DE GARR ROBINSON: And I have to put my case to this
 18 witness, my Lord.
 19 MR JUSTICE FRASER: Yes, but he is called to give evidence
 20 on the Horizon Issues. I'm not saying you can't put the
 21 question, what I'm saying is you need to put it by
 22 reference to the Horizon Issues that he is giving on
 23 rather than just arguing your case.
 24 MR DE GARR ROBINSON: My Lord, I don't want to argue my case
 25 with this witness which is why I would like to ask him

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1 questions rather than engage in argument about
 2 particular Horizon Issues. If your Lordship is saying
 3 that I have to argue with him about particular Horizon
 4 Issues then I will do that, but I would respectfully be
 5 obliged if your Lordship would let me put my case.
 6 MR JUSTICE FRASER: Mr de Garr Robinson, you are slightly
 7 misunderstanding two things. You are misunderstanding
 8 that cross-examination is just arguing with him, which
 9 it isn't.
 10 MR DE GARR ROBINSON: Well, exactly.
 11 MR JUSTICE FRASER: What I'm saying is by reference to
 12 Horizon Issues upon which he gives evidence, if you are
 13 going to put to him: in order to have fulfilled that
 14 properly you should have done X, Y and Z, and you
 15 haven't, then you can put the question, but you need to
 16 peg it back to the Horizon Issues.
 17 MR DE GARR ROBINSON: My Lord --
 18 MR JUSTICE FRASER: I think I have now said that three
 19 times.
 20 MR DE GARR ROBINSON: You have.
 21 MR JUSTICE FRASER: And I do not think it is a controversial
 22 point. If you want to make it a controversial point in
 23 due course in submissions you can.
 24 MR DE GARR ROBINSON: My Lord, let me explain to
 25 your Lordship where I'm going. I'm loath to do that in

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1 front of the witness, but let me explain.
 2 MR JUSTICE FRASER: Hold on a minute. A couple of minutes.
 3 Just for the transcript, I'm asking the witness to
 4 step outside.
 5 (In the absence of the witness)
 6 MR DE GARR ROBINSON: I am going to take the witness to
 7 section 8.5 of Dr Worden's report.
 8 MR JUSTICE FRASER: Yes.
 9 MR DE GARR ROBINSON: In which he says that in order to have
 10 sufficient bugs to even begin to justify the claims
 11 being made by the claimants there would need to be in
 12 the region of 40,000, and I'm going to put it to him
 13 that that's right.
 14 MR JUSTICE FRASER: Yes.
 15 MR DE GARR ROBINSON: Now, is your Lordship going to permit
 16 me to do that?
 17 MR JUSTICE FRASER: Yes, of course. But the question you
 18 asked him was:
 19 "If you were to do that process or perform any
 20 judgment at all as to financial impact, you wouldn't
 21 find a number which remotely supports the claimants'
 22 case ..."
 23 MR DE GARR ROBINSON: Yes.
 24 MR JUSTICE FRASER: Now, by "number", I take that to mean
 25 financial number as in pounds, not shillings anymore,

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1 and pence. Is that right?
 2 MR DE GARR ROBINSON: Yes, that's --
 3 MR JUSTICE FRASER: But that is not part of one of the
 4 Horizon Issues.
 5 MR DE GARR ROBINSON: That's the point that's put in
 6 section 8.5 of Dr Worden's report, my Lord.
 7 MR JUSTICE FRASER: Well, if you are going to suggest to
 8 him -- I'm going to deal with it on this basis. As
 9 I made clear, I think, I'm going to let you put the
 10 question and pursue that line by reference to
 11 Dr Worden's evidence, but if you are going to maintain
 12 to this witness that in order properly to have addressed
 13 each of the Horizon Issues he should have come back --
 14 or, sorry, he should have arrived at an financial impact
 15 figure, which is a point I'm saying I'm allowing you to
 16 put, you need to do it by reference to which Horizon
 17 Issue you say he could only address properly if he did
 18 that exercise. Is that clear?
 19 MR DE GARR ROBINSON: My Lord, yes.
 20 MR JUSTICE FRASER: All right.
 21 MR GREEN: My Lord, just before he comes back in, the
 22 question that was put at {Day15/147:18} was:
 23 "Might I suggest that with your experience of IT
 24 risk analysis, you are perfectly capable of setting out
 25 at least in broad terms a view of the extent of the

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1 losses caused by the bugs that you have identified?"
 2 And the suggestion in cross-examination we hadn't
 3 done that anywhere, there are various examples. At
 4 {D2/4/29} there is a table, and so forth.
 5 MR JUSTICE FRASER: Mr Green, you can --
 6 MR GREEN: I know it is a separate point.
 7 MR JUSTICE FRASER: Mr Green, it is a separate point and,
 8 with respect, you can wrap those points up in your
 9 re-examination. If Mr de Garr Robinson is putting
 10 a point which is clarified by a reference, the time at
 11 which to do that is in re-examination.
 12 Just before we have the witness back in, I think
 13 I've made it quite clear I have a fairly light touch in
 14 terms of your cross-examination. I'm neither steering
 15 you one direction or another, I'm giving you virtually
 16 free rein, but there is a limit to the free rein because
 17 it has to be done by reference to the Horizon Issues
 18 which is what the trial is about. The Horizon trial is
 19 completely different to the individual claimants' cases
 20 or their financial losses, for example.
 21 MR DE GARR ROBINSON: Absolutely, my Lord.
 22 MR JUSTICE FRASER: Right. Can we have the witness back in
 23 please.
 24 (In the presence of the witness)
 25 MR DE GARR ROBINSON: Now Mr Coyne, could we first of all go

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1 to bundle {C1/1/1}, please, which is the Horizon Issues.
 2 I can take any of them, but I would like you to look at
 3 Horizon Issue 1 when it comes up on the screen. I am
 4 sure you have read it many times.
 5 A. Yes.
 6 Q. It begins with the words:
 7 "To what extent was it possible or likely ..."
 8 That's a question which is asking the experts to
 9 explore the likelihood of bugs in Horizon causing
 10 shortfalls in postmaster branch accounts, correct?
 11 A. Yes.
 12 Q. As I suggested to you I think this morning, but it may
 13 have been after the luncheon adjournment, there are many
 14 different ways or there are various different ways in
 15 which an assessment could be made of extent of
 16 likelihood, yes?
 17 A. Yes.
 18 Q. One of those ways that might be thought to be very
 19 helpful in the context of this case is to consider
 20 whether the likely extent of bugs in Horizon has any
 21 chance of justifying any significant part of the claim
 22 that is made by the claimants, would you accept that?
 23 That would be a useful measure to adopt in a case of
 24 this sort?
 25 A. Sorry, could you put the question again? I do not think

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1 I understand the question.
 2 Q. Horizon Issue 1 requires the experts to consider the
 3 extent of the -- and I'm using shorthand now --
 4 A. Yes, that's good.
 5 Q. I hope it is not controversial. The extent of the
 6 likelihood of bugs in Horizon causing shortfalls in
 7 branch accounts.
 8 A. Yes.
 9 Q. And I'm suggesting to you that one useful yardstick for
 10 measuring extent is whether the likelihood in this case
 11 is of any sort which could begin to justify the claims
 12 that these proceedings are designed to decide.
 13 A. Yes.
 14 Q. And do you accept that that could be a useful yardstick
 15 for measuring extent in the context of this case?
 16 A. I can see how it might be one of the contenders for
 17 that, yes.
 18 Q. Thank you. Now you know, because Dr Worden said so in
 19 his first joint statement, that Dr Worden was going to
 20 look at extent in that kind of way, yes?
 21 A. Yes.
 22 Q. He was going to look at financial impact?
 23 A. Mm.
 24 Q. And see whether the likely financial impact of bugs,
 25 which there were likely to exist, would have any chance

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1 of justifying the sort of claim, the sort of assertions
 2 that are being made in the context of these overall
 3 proceedings?
 4 A. Yes.
 5 Q. So you saw that he was going to do that and you have
 6 refrained from doing that, correct?
 7 A. Yes.
 8 Q. What I suggested to you before you very kindly stepped
 9 out was you could have done that. You could, using your
 10 skills as an IT risk analyst, you could have, by
 11 reference to the KELs and the PEAKs that you had
 12 identified, formed an assessment as to the likely
 13 financial impact in each of the instances that you had
 14 identified?
 15 A. Yes, I could. If I could please answer that by way of
 16 illustration to the problem with that approach.
 17 Q. Please do.
 18 A. We will often see a bug, error or defect with a very
 19 wide range of impacts and the impact is typically
 20 whatever the counter was doing at that point in time.
 21 So if the counter was doing a foreign currency
 22 transaction for just £50 and something goes wrong, the
 23 discrepancy may be £50.
 24 By knowing that there is a bug, error or defect in
 25 the Horizon system that leads to problems with foreign

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1 currencies, you can't then say it is only a £50 defect
2 because that isn't incorrect. If another person was to
3 be subject to that defect and they were doing a £10,000
4 foreign currency transaction, they would likely have
5 that same level of defect.

6 Now that's an illustration to say you can't value
7 bugs and their potential impact by looking at what has
8 happened historically. You can't value it in that way.

9 Q. But what you can do is form an estimate having regard to
10 the totality of the PEAKs that you have seen, can't you?

11 A. But it is a fundamentally flawed approach. If you have
12 seen three branches that have had an impact because they
13 were doing three foreign currency transactions, a £20,
14 a £50 and a £100, but then there is a fourth person that
15 believes that they have been subjected to that but that
16 isn't recorded, you can't simply look at the three where
17 it has been recorded and say the fourth couldn't
18 possibly have occurred because we know there is a defect
19 there.

20 Q. I'm not suggesting that you could arrive at a certain
21 conclusion of an absolute cast iron number, but I repeat
22 my question. Can't you form an estimate having regard
23 to the totality of the PEAKs that you have seen?

24 A. Yes, but your estimate would have to be based on the
25 three people where it has been recorded to have

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1 occurred, so you would say £20, £30 and £50, and the
2 best you could possibly do is come up with an average of
3 that, and you would say that the value of that defect is
4 whatever that is.

5 Q. There is another way that you could do it, isn't there,
6 which is that you could look at the three bugs, the
7 receipts and payments mismatch, the suspense account bug
8 and Callendar Square, the ones that have been thoroughly
9 investigated, and you could form inferences from the
10 scale of those bugs, yes? Would that be reasonable?

11 A. For those types of bugs, potentially yes.

12 Q. Those are quite large bugs, aren't they? They are not
13 small bugs in the scheme of things. That's why they
14 were identified in the letter, because these were major
15 bugs of which even Post Office was aware?

16 A. Yes. And carrying on from the one we were not told
17 about until later, the Dalmellington one, there were
18 some which were only pounds, just a few pounds, and
19 I think there was at least one that was £25,000.

20 Q. But just fixing our attention for the moment on those
21 three bugs, would you accept that the evidence indicates
22 that altogether the total financial impact of those
23 three bugs is no greater than £100,000. Do you agree
24 with that?

25 A. No, I haven't done that so I would not know whether that

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1 was right or close to right.

2 Q. You are aware of the calculations that were made by
3 Fujitsu and the documents setting out the financial
4 impact of those three bugs, and you are aware, aren't
5 you, that that calculation has resulted in a figure that
6 is less than £100,000? Would you not accept that for
7 the purposes of forming an estimate and scaling up from
8 some examples, it would be useful to take that kind of
9 figure as an example of sizeable bugs and start doing
10 calculations on the basis of that sort of figure?

11 A. No, I don't accept that that's --

12 Q. Do you have any evidence to suggest that the financial
13 impact of those bugs was more than £100,000?

14 A. I don't know. Looking at Dalmellington there was
15 a £25,000 in there, but I don't know what the outcome of
16 that was, how that was fixed.

17 Q. Do you not accept -- sorry, you don't know -- you just
18 made a point about Dalmellington. You don't know how
19 Dalmellington was fixed?

20 A. The document talks about -- I think there was only two
21 that they didn't know how it was fixed. The majority of
22 them had been fixed by some form of correction to --

23 Q. All but -- you will remember there are two Dalmellington
24 documents, the first one covered -- identified 118
25 branches affected and dealt with 114 of them?

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1 A. Yes.

2 Q. And as it happens all of those branches had been
3 actually made good already because of the
4 countermeasures that existed in the Horizon system, yes?

5 A. Yes.

6 Q. So of the 114 branches that were affected by the
7 Dalmellington bug, in fact there was no lasting impact
8 on any of those 114 branches, was there?

9 A. I think there was two that Fujitsu wasn't aware of.

10 Q. I have asked you about the 114. You are trying to talk
11 about the other four, aren't you?

12 A. Yes. They were corrected, yes.

13 Q. So we can lay the 114 to one side, because the answer to
14 the question: what was the lasting impact of the
15 Dalmellington bug on those 114 branches? The answer is
16 zero, correct?

17 A. Yes.

18 Q. So we then move to the other four branches which were
19 dealt with with another document, which I can tell from
20 your answers you are completely familiar with. There
21 were four branches, weren't there? Two of them appeared
22 to have large impacts?

23 A. Yes.

24 Q. And the other two had impacts of around £1, I think one
25 of them was pennies?

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1 A. There were some very small ones.
 2 Q. So shall we lay the pound and the penny to one side for
 3 a moment?
 4 A. No, because if that indicates a defect then it depends
 5 what transaction it was doing, so we can't lay any of
 6 them to one side.
 7 Q. Let's talk about the other two which I think were the
 8 two you wanted to talk about, yes?
 9 A. Yes.
 10 Q. Those two, it turned out, weren't examples of
 11 the Dalmellington bug and they didn't suffer any loss,
 12 did they? There is another document which contains
 13 an analysis which demonstrates that, do you recall?
 14 A. I don't recall, no.
 15 Q. Very good. Well, let's lay those two aside. So we have
 16 got two bugs, one of which is for about £1 and one of
 17 which is for pennies, and we have 114 branches that were
 18 affected, all of which were made good by the
 19 countermeasures that existed in the system, yes? And
 20 are you suggesting that the two branches that hadn't
 21 been hunted down, that had a £1 deficiency and a
 22 deficiency of two pennies, are you suggesting that it is
 23 to be inferred that those two branches uniquely weren't
 24 corrected by those countermeasures?
 25 A. No, it should be the case that it all was corrected.

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1 Q. Very good. So would you accept that in relation to the
 2 Dalmellington bug, the overwhelming likelihood is that
 3 that bug caused no lasting deficiencies in branch
 4 accounts?
 5 A. By "lasting" -- well, can you help me by saying what you
 6 mean by "lasting"?
 7 Q. A deficiency that wasn't made good either by the SPM
 8 actually reversing the remitting error, because of course
 9 Dalmellington was a bug which caused people to rem in
 10 amounts more than once when they -- which is why it
 11 looked like human error, and why it was picked up by the
 12 system and fixed as time went on.
 13 A. Yes.
 14 Q. That's why it took so long. It is one of your examples
 15 of a bug that took a long time to identify.
 16 A. Absolutely.
 17 Q. But the reason why it took a long time to identify was
 18 because it looked exactly like a human error, didn't it?
 19 A. Right.
 20 Q. Right. All of those instances were picked up by the
 21 system and either the SPM himself reversed the rem in
 22 some way and made himself good, or it was picked up by
 23 Post Office and TCs were sent, correct?
 24 A. Yes.
 25 Q. So that's what I mean by saying in relation to the

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1 Dalmellington bug there were no lasting deficiencies, no
 2 lasting shortfalls for which SPMs were ultimately made
 3 liable?
 4 A. Yes, I think that is right. I think once everything was
 5 detected everything was made good.
 6 Q. In fact, Dalmellington is quite a good example of how
 7 countermeasures need to be brought into account and how
 8 it is important to look at financial impact to make
 9 an assessment of the extent question that's raised in
 10 Horizon Issue 1, isn't it? Because it is no good saying
 11 118 branches were affected and some of them were
 12 affected by large amounts, when in fact we all know that
 13 even before the bug was detected the branches involved
 14 were in fact made whole anyway, yes?
 15 A. It does suggest that, but it also suggests that there
 16 were deficiencies with the countermeasures because
 17 I believe it was five years after the first occurrence
 18 of the bug that the defect was finally discovered.
 19 Q. Because, as you have already agreed, to an outside
 20 observer it looks exactly like a human error because it
 21 was a human error. The bug wasn't causing losses, it
 22 was causing errors to be made and those errors were
 23 picked up, would you agree with that?
 24 A. No, it wasn't a human error, it was a defect of the
 25 system. It made it look like a human error.

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1 Q. That's for another day.
 2 Going back to these three bugs. Do you have any
 3 reason for thinking, any evidence to suggest, that the
 4 receipts and payments mismatch bug, the suspense account
 5 bug and the Callendar Square bug had a total net impact
 6 of more than £100,000?
 7 A. As I said previously, I have not gone through and noted
 8 all the impacts of those so I could not give you
 9 a number.
 10 Q. Would you accept that the best evidence is that the loss
 11 was under £100,000?
 12 A. That still requires me to work out what the number is.
 13 All I can tell you is that it would appear that the
 14 receipts and payments mismatch, it was about 60 branch
 15 accounts that were impacted, but without going through
 16 and looking at the numbers I don't know.
 17 Q. Well --
 18 A. It was 30 per Callendar Square.
 19 Q. Dr Worden has done that in his expert report, you
 20 recall, yes?
 21 A. Mm.
 22 Q. Are you aware of any evidence to suggest that
 23 Dr Worden's analysis is wrong? Is there any evidence to
 24 challenge his calculations in relation to those three
 25 bugs?

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1 A. No. I understand the process that Dr Worden has gone
 2 through, he has looked at the numerical values that are
 3 recorded in the PEAKs for the branches that are
 4 available that are recorded in there and he has added
 5 those up, so I do not think his maths is going to be
 6 wrong.
 7 Q. So if we were to take those these bugs as some kind of
 8 indication of fairly sizeable bugs that might appear in
 9 the system, it is fair to say, isn't it, that £100,000
 10 is quite small compared to the £19 million that's
 11 claimed by the claimants in this case. It is less than
 12 1%, correct?
 13 A. Just on the pure numbers, yes.
 14 Q. So these three bugs, which are the ones we know most
 15 about, do not by themselves even begin to support the
 16 claimants' case, do they?
 17 A. But the numbers that are given are only the numbers that
 18 are in the PEAKs, and the PEAKs only reflect where
 19 Fujitsu have become involved and have started to
 20 investigate the impact of those bugs from the branches
 21 that they are aware of.
 22 Q. So assuming that £100,000 represents a fair assessment
 23 of the impact of those bugs, what would you say? You
 24 would say, well, they are the tip of the iceberg. There
 25 are many more bugs that are capable of producing the

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1 kind of financial loss that would justify the claimants'
 2 claim, would you say that?
 3 A. Well, it is my position that there's many more than the
 4 three and I have set out these here.
 5 Q. In paragraph 3.105 of your report you said potentially
 6 thousands, but I think you have moved from that now.
 7 Now you are saying perhaps up to 40, yes?
 8 A. On the logic that we went through before, yes.
 9 Q. Well, you accepted that logic, didn't you?
 10 A. My position as stated in the report is that there is the
 11 potential for more.
 12 Q. Well, I won't go back over the answers you have already
 13 given in cross-examination, Mr Coyne.
 14 Do you accept that 40 bugs are plainly nowhere near
 15 enough to have caused the claimants the shortfalls that
 16 they are seeking to recover?
 17 A. I don't accept that position. Because the bug impacts
 18 the transaction that would be in effect at the time, if
 19 it was a large transaction at the time then the impact
 20 of that bug would be a lot larger. In the alternative,
 21 they may have experienced the bug a number of times but
 22 on smaller transactions.
 23 Q. Well, let's see if we can agree some steps here about
 24 what can properly be done to scale up in this case.
 25 Could I ask you to go to bundle {D3/1/148} at page 148.

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1 A. Yes, I have that.
 2 Q. This is Dr Worden's first report and he says at
 3 paragraph 6.19:
 4 "Over the period 2000-2018 the Post Office network
 5 has consisted of more than 11,000 branches. The mean
 6 number of branches in all years over the period has been
 7 about 13560."
 8 And he explains how the figure is derived.
 9 "If this evidence is accepted, the number of 'branch
 10 months' (a single branch, trading for a single month)
 11 has been ... 3,091,680. This is the number of monthly
 12 branch accounts that have been produced."
 13 I believe you have agreed that figure with Dr Worden
 14 in one of the joint statements, yes?
 15 A. Yes.
 16 Q. That leaves Dr Worden to formulate what he describes as
 17 a scaling factor between on the one hand the number of
 18 bugs on all branches over the lifetime of Horizon and
 19 that's what he calls scope A, and on the other hand the
 20 number of bugs on one claimants' branch in any one
 21 month, and that scaling factor is 3 million. Do you
 22 accept the basic logic as a starting point?
 23 A. I don't believe I do, no.
 24 Q. You do refer in your report, Mr Coyne, to technical
 25 flaws in Dr Worden's analysis?

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1 A. Yes.
 2 Q. If you look at paragraph 620 is there a technical flaw
 3 in what Dr Worden says there {D3/1/148}?
 4 A. No, I don't believe so.
 5 Q. There is no technical flaw?
 6 A. No, if the 3 million has come from the 3 million branch
 7 months.
 8 Q. Then what Dr Worden has done is he has considered where
 9 there is evidence showing the need to adjust that factor
 10 to account for the possibility that the claimants'
 11 branches may not be typical when compared with the
 12 general body of sub-post office branches?
 13 A. Yes.
 14 Q. They might be more or less likely to be hit by bugs than
 15 your average Post Office branch?
 16 A. Yes.
 17 Q. And he sees no such evidence other than in relation to
 18 their size, do you accept that logic?
 19 A. I don't accept that logic, no. We see from the bugs
 20 that are reported that bugs appear to impact branches
 21 differently and one bug may hit a branch a number of
 22 times and only hit a handful of branches, and there
 23 doesn't appear to be any -- well, there will be
 24 an underlying technical reason for that but it is often
 25 down to the way that that branch is configured or the

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1 processes that they follow.

2 Q. Do you accept -- no, let me ask you this. Are you aware

3 of some special factor applying to the claimant branches

4 which marks them out as very different from the rest of

5 the branch network making their susceptibility to bugs

6 very different from the wide range of branches in the

7 rest of the network?

8 A. I'm not aware of it, no, but it would require -- in

9 order to look at that it would require a detailed

10 understanding of the particular processes of the

11 branches. And I think that's illustrated by what we

12 know of Dalmellington, that impacted -- I think one

13 branch was impacted five times, where there was only

14 a handful of branches -- I think, was it 88 that was

15 impacted in total?

16 Q. Mr Coyne, it is quite important not to get confused

17 between particular instances of things happening and the

18 law of averages. What I'm asking you about is what's

19 likely to happen over a large number of cases, do you

20 understand the difference? So of course if people are

21 all walking down the streets, some of them are going to

22 get hit by lightning. Everybody won't get hit by

23 lightning in the same way. It will be a very small

24 number of people who will be hit by lightning and

25 they'll usually be in particular situations when it

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1 happens. But one can make a generalisation about the

2 likelihood of people being hit by lightning, do you

3 understand, because of the law of averages?

4 A. I do understand, but in that illustration it would be

5 very unusual for one person to be hit by lightning five

6 times.

7 Q. But it has happened. I remember, goodness gracious me,

8 watching a programme, I think it may have been

9 Blue Peter when I was a child, where precisely such a

10 thing had happened.

11 That's the point, that one has to step back from the

12 particular. When undertaking statistical analyses one

13 has to step back from the particular and look at the

14 broad range of consequences applying the law of large

15 numbers and what's conventionally known as the law of

16 averages. You do understand that?

17 A. I do understand that, yes.

18 Q. And are you suggesting that you are aware of any factor

19 relevant to the claimants' branches that means that

20 there's some material, significant -- that they have

21 some significant feature that takes them away from --

22 that makes them completely different from the broad

23 range of branches that exist in the Post Office network,

24 large and small?

25 A. No, I'm not aware of it, but my suggestion is that in

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1 order to conduct that you should ensure that they are

2 representative before using the law of averages.

3 Q. Well, one thing that Dr Worden has done is he has

4 considered the size of the branches. Unlike you, and

5 I'm not making this by way of criticism, but he has

6 thought about this very question to see whether there

7 are any real differences between the broad range of

8 branches in the network and the claimant branches and he

9 has spotted that claimant branches tend to be smaller,

10 okay, in the sense that they do fewer transactions per

11 day on average than the average Post Office branch.

12 Yes?

13 A. Yes.

14 Q. He does that at paragraph 623 on page {D3/1/149} of this

15 document, and he reaches the conclusion that he sets out

16 in paragraphs 624 and 625. Could I ask you to read

17 those three paragraphs, please.

18 (Pause)

19 A. Yes, okay.

20 Q. Do you accept that these calculations that he does there

21 in principle? There is no technical flaw?

22 A. I am sure the maths is correct, but again I'm not sure

23 that transactions is wholly the correct unit to use.

24 Has it been considered what the value of those

25 transactions are; whilst they do half the amount, do

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1 they do high value transactions, does that have

2 an impact?

3 Q. Isn't that brought into account by -- isn't in forming

4 a calculation the first question you have to ask

5 yourself is: how likely it is that this branch is going

6 to be impacted? And then you have to form an assessment

7 of what the size of impact is likely to be, yes?

8 A. Yes.

9 Q. At this point in the equation what Dr Worden is trying

10 to do is to work out how likely it is branches are going

11 to be affected?

12 A. Yes.

13 Q. He reasons that branches with more transactions, doing

14 more transactions, are statistically over a large number

15 of occasions more likely to be hit by a bug than

16 a branch doing fewer transactions and would you agree

17 the principle underlying that observation?

18 A. I think that's probably a reasonable principle. If we

19 look at the defects we found though, there is probably

20 other factors that could be brought into that.

21 Q. But you are not aware of any, you are not in a position

22 to suggest a single factor which you have any evidence

23 to think actually applies in relation to the claimants

24 as compared with the rest of the branch network?

25 A. I don't know the make up of the claimant, but one

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1 example might be, do they have an outreach branch?
 2 Q. You are aware, aren't you, how small the number of
 3 outreach branches there is, how insignificant that is in
 4 the context of the Post Office network, aren't you?
 5 A. Well, it wouldn't be insignificant to the people that
 6 are impacted by the defect and I don't know whether any
 7 of the -- because I haven't studied the claimants,
 8 I don't know whether any of the claimants have that or
 9 not.
 10 Q. What you are doing is you are speculating that some of
 11 the claimants might have outreach branches?
 12 A. I'm not. I'm illustrating the potential problems with
 13 the approach that you are taking just simply using the
 14 unit of number of transactions.
 15 Q. Mr Coyne, what I'm suggesting to you is that, in order
 16 to suggest that there is a marked difference in
 17 susceptibility to bugs as between the claimants and the
 18 general -- other Post Office branches, one needs
 19 a reason for doing it. It is not enough to sit in
 20 an armchair and think of possible factors where you have
 21 no basis for knowing whether the factors apply or don't
 22 apply.
 23 A. Yes.
 24 Q. What you must do is simply work with the evidence that
 25 you have and there is no evidence to suggest that there

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1 is any particular preponderance of outreach branches
 2 amongst the claimants as compared with the general
 3 Post Office network, is there?
 4 A. No, I'm not aware of the make up of the claimants. No.
 5 Q. So when it comes to the calculation that's set out --
 6 where is it?
 7 MR JUSTICE FRASER: Are you looking for the smaller than
 8 average?
 9 MR DE GARR ROBINSON: Yes.
 10 MR JUSTICE FRASER: Because it is at 6 --
 11 MR DE GARR ROBINSON: It is at 629 on page {D3/1/150}.
 12 Thank you my Lord.
 13 On the basis of the evidence that we actually have
 14 in relation to the claimant branches, the process that
 15 Dr Worden goes in order to arrive at a scaling factor
 16 of 0.37, there are no technical flaws in that, are
 17 there?
 18 A. No.
 19 Q. Then in his second report, and perhaps we could go to
 20 that, it is at {D3/6/30}, it is paragraph 113, Dr Worden
 21 alighted upon a methodology that was more accurate,
 22 an improvement. Could I ask you to read paragraphs 113
 23 and 114.
 24 A. Mm. (Pause). Yes.
 25 Q. So here he refines his approach by aggregating the size

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1 of all claimant branches across three years for which
 2 data is available and then comparing that to the
 3 aggregate size of all branches across all three years
 4 and his view is that that is a more reliable approach,
 5 would you agree?
 6 A. It would appear to be a more reliable approach than the
 7 approach that was being taken for before yes.
 8 Q. That results in an increased factor of 0.45, yes?
 9 A. Yes.
 10 Q. You accept that that's a better approach in principle?
 11 A. It is a better approach than the approach that was being
 12 taken before, yes.
 13 Q. And do you accept that on the information of which you
 14 are aware, a scaling factor of 0.45 is in the right
 15 ballpark? One can speculate that there might be other
 16 information out there producing a different result but
 17 taking account of the information of which you are
 18 aware, that scaling factor is in the right ballpark,
 19 yes?
 20 A. Scaling based on number of transactions, yes.
 21 Q. Thank you. What that means is that because they have
 22 fewer transactions a claimant branch is less likely to
 23 be hit by a bug than an average branch, you accept the
 24 logic, yes?
 25 A. No, I don't accept that logic, no.

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1 Q. So do you suggest there should be a different scaling
 2 factor?
 3 A. No, I don't accept that because they do less
 4 transactions they are less likely to be hit.
 5 Q. Isn't it rather like going outside -- if we go back to
 6 the lightning analogy. If people spend most of their
 7 time inside a building, they are much less likely to get
 8 hit by lightning than people who spend most of their
 9 time out in the countryside, yes?
 10 A. Yes.
 11 Q. Doing a transaction is a bit like going out into the
 12 countryside, isn't it? It makes you vulnerable to the
 13 elements, yes?
 14 A. Yes, but it is the types of transactions.
 15 Q. You say types of transactions, Mr Coyne. All of these
 16 branches did a wide range of transactions?
 17 A. They do but some will do more of a particular type of
 18 transaction than others.
 19 Q. That's also true of the general body of the Post Office
 20 network?
 21 A. Yes.
 22 Q. If there were some really curious difference between the
 23 kind of business done by the claimant branches and the
 24 kind of business done by the vast -- I mean you do
 25 accept, don't you, that the non-claimant branches in the

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1 Post Office network go from the very small to the very
 2 large and can do a vast range of different kinds of
 3 business?
 4 A. Yes.
 5 Q. If there were some feature that marked out the claimant
 6 branches as different from the general Post Office
 7 network branches, do you not think we would have
 8 identified that by now?
 9 A. It isn't a piece of work that I have done so I wouldn't
 10 have identified it but I don't know whether anyone else
 11 has looked at that or not.
 12 Q. My suggestion to you, Mr Coyne, is that you are raising
 13 an armchair objection on the basis not that you believe
 14 this would actually produce a different result in this
 15 particular case, but merely as an attempt to object to
 16 performing an estimate which it is in fact open to you
 17 and to Dr Worden to perform?
 18 A. My perception is that it is a flawed process because the
 19 units, the inputs to the process I don't believe are
 20 correct. I'm not arguing with the maths, it is the
 21 principles behind it that I'm not happy with.
 22 Q. Let's move on. If you are genuinely saying it is
 23 impossible to arrive at any judgment on these matters,
 24 if you had to make a business decision about risk and
 25 this was the only information available to you, you

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1 wouldn't just sit there and say you couldn't make
 2 a decision, would you? You would perform a judgment on
 3 the best information you have, yes?
 4 A. Yes, I agree with that, if a decision had to be made and
 5 there was no other information available, then I would
 6 use the best information that was available to me.
 7 Q. And you would build in a margin of error, wouldn't you,
 8 to account for the possibility that there may be
 9 unknowns out there that could throw your figures out?
 10 A. Yes.
 11 Q. In the way that Dr Worden has done, correct?
 12 A. Yes.
 13 Q. Let me ask you this, you are suggesting that
 14 susceptibility of bugs may change depending on the kind
 15 of business that's done. Is it your view, having regard
 16 to your close study of the 29 bugs that are in the JS2
 17 bug list, is it your view that those bugs are such that
 18 there is some feature in them which makes it likely that
 19 the claimants are going to be more or less susceptible
 20 to them than anybody else?
 21 A. Not with regard to claimants because as I said I have
 22 not looked at those but there are bugs in there which do
 23 seem to be susceptible to particular branches.
 24 Q. Now let's go back to Dr Worden's first report.
 25 {D3/1/150} please and paragraph 630.

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1 A. Yes.
 2 Q. On Dr Worden's approach:
 3 " ... Claimants' branches, being generally smaller
 4 than Post Office average, have fewer transactions per
 5 month and so are less likely to be hit by a Horizon bug
 6 in a given month."
 7 Here he refers to his 0.37 scaling factor.
 8 "The factor 0.37 increases the scaling factor above,
 9 between scopes (a) (see paragraph 617.1) and (c) (617.3)
 10 from about 3 million to about 8 million."
 11 Yes?
 12 A. Right, yes.
 13 Q. You accept that logic, don't you?
 14 A. I accept Dr Worden's mathematics based on his logic,
 15 yes.
 16 Q. So if you take a bug which has occurred 16 times over
 17 the lifetime of Horizon?
 18 A. Yes.
 19 Q. With a mean financial impact of £1,000 and that's quite
 20 a significant bug compared with most of the bugs you
 21 found, would you agree?
 22 A. It is certainly significant in its impact, yes.
 23 Q. It is in the top five, yes?
 24 A. Quite possibly.
 25 Q. And then you select a claimant branch a month at random,

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1 the chance of that bug occurring in that branch in that
 2 month is 16 in 8 million, correct?
 3 A. If bugs affect branches equally, yes.
 4 Q. And that's around 2 in 1 million and you have just
 5 accepted the logic, thank you.
 6 And the probabilities are obviously additive. So if
 7 there is a second similar bug, the chances become 4 in
 8 1 million and so on. So if there are 100 bugs it is 1
 9 in 5,000, yes?
 10 A. But all this is predicated on accepting that bugs affect
 11 branches equally.
 12 Q. Well let's do this Mr Coyne, let's assume that bugs
 13 don't affect branches equally. I presume you are not
 14 saying it is impossible to say -- I assume you are not
 15 saying that the claimant branches are likely to be 100
 16 times more likely to be susceptible of bugs?
 17 A. As I say I don't know the make up of claimant branches
 18 so I don't know about that. All I do know is that for
 19 the bugs that I looked at they don't appear to impact
 20 branches equally. Dr Worden referred to a rainfall
 21 across a field, that isn't a concept that I accept.
 22 Q. Which is why he changed it in his second report to --
 23 A. Lightning.
 24 Q. Do you remember? Or maybe it was the joint statement,
 25 I can't remember.

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1 A. Yes.
 2 Q. What I'm suggesting to you, Mr Coyne, is that you don't
 3 just throw up your hands and say it is theoretically
 4 possible that a particular claimant branch or particular
 5 set of claimant branches may do a particular kind of
 6 business making them more or less susceptible to bugs
 7 than other branches. You need to have -- it is
 8 possible, isn't it, to have a sense of what the maximum
 9 likely impact of that phenomenon is, yes? You are not
 10 suggesting that the claimant branch is 100 times more
 11 likely than any other branch bearing in mind that the
 12 rest of the Post Office network contain branches from
 13 large to small the entire spectrum of branches that
 14 exist in the network?
 15 A. The way I would approach this would be possibly the way
 16 that Fujitsu did when they were investigating
 17 Dalmellington by way of example, in that they know it
 18 impacted 88 different branches but a number of those
 19 were impacted multiple times.
 20 I would have a look at the make up of those -- the
 21 business process that was followed in the branches that
 22 were impacted multiple times to find out why one branch
 23 was impacted three times and nobody else has been
 24 impacted at all.
 25 Once you understand what it is within that business

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1 process, you can then see from the knowledge you have
 2 got within the Post Office and Fujitsu who else across
 3 the estate operates in that same way.
 4 Q. Mr Coyne, if we were just talking about one bug that
 5 affected a particular event or transaction, then I would
 6 understand what you are saying. But we are not, are we?
 7 We are talking about a whole range of bugs operating and
 8 being triggered in a whole range of different
 9 circumstances?
 10 A. Yes.
 11 Q. So we have bugs which themselves have a scatter gun
 12 effect and we have a scatter gun of branches all over
 13 the country, some of which peppered all over the country
 14 are claimant branches?
 15 A. Yes.
 16 Q. What I'm suggesting to you is that when forming
 17 a judgment, trying the best you can do to make
 18 an assessment on the information available, what you are
 19 going to do in the absence of a strong indication that
 20 there is some factor that justifies the inference that
 21 all of the claimant branches are very different from all
 22 of the branches in the rest of the network, is you adopt
 23 the sort of approach that Dr Worden has adopted.
 24 A. It isn't an approach that I would take. I wouldn't feel
 25 confident in undertaking that type of approach.

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1 Q. If you were making a business decision I think you
 2 accepted that you would form a judgment that would be
 3 the best judgment you could on the information you had,
 4 correct?
 5 A. Yes. I think that is in a different scenario, isn't it?
 6 You are making a business decision.
 7 Q. What it shows is that it is possible to make estimates
 8 that have some materiality and could be of use when
 9 forming judgment about human conduct, yes?
 10 A. Yes.
 11 Q. That's what Dr Worden has done and the calculation he
 12 arrives at is that, as we have said and I think you have
 13 accepted the logic of the position, that the chance of
 14 the bug we have discussed occurring in a claimant branch
 15 in a particular month are 2 in a million, and if there
 16 are 100 such bugs the chance would be 1 in 5,000. And
 17 that's what Dr Worden says at paragraph 634 on page 151.
 18 Again do you accept the logic?
 19 A. I accept the maths, yes.
 20 Q. So for a bug to have even a 1 in 10 chance of hitting
 21 one claimant branch in one month there would need to be
 22 tens of thousands of such bugs, wouldn't there, yes?
 23 A. Based on those mathematics, yes.
 24 Q. Dr Worden says 50,000 in his first report but this
 25 becomes 40,000 in his supplemental report because he has

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1 chosen a different scaling factor, correct?
 2 A. Yes.
 3 Q. If it were to be a 5 in 10 chance there would need to be
 4 200,000 bugs, correct?
 5 A. That's what he says.
 6 Q. If one were to assume that the scaling factor were very
 7 different, you would still need an enormous number. You
 8 would still need thousands of bugs, wouldn't you, to
 9 even begin to have a chance of justifying the sort of
 10 claim that is being made in this case. It is a matter
 11 of commonsense, isn't it?
 12 A. All I'm doing here is effectively just confirming
 13 Dr Worden's maths, but I don't accept the process.
 14 Q. You don't accept the process because you are seeking to
 15 suggest there might be some factor you can't identify
 16 which means that the claimant branches have a different
 17 susceptibility to bugs when doing a transaction than the
 18 branches in the rest of the Post Office network, yes?
 19 A. Yes, quite possibly.
 20 Q. What I'm suggesting to you, Mr Worden --
 21 A. Coyne.
 22 Q. -- is that even if you factored in some enormous number,
 23 a substantial number, assuming the claimants were much
 24 more likely than your average Post Office branch to be
 25 susceptible to bugs, it would still be in the thousands.

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1 There would still need to be thousands of those bugs
 2 wouldn't there in order to justify anything like the
 3 claim made by the claimants.
 4 A. I don't have the detail of the claims by the claimants.
 5 So I don't know the make up of them.
 6 Q. Do you have any evidence that causes you think that
 7 there are in fact that scale of bugs in Horizon,
 8 thousands of bugs in Horizon? I'm thinking as a result
 9 of the evidence you gave after lunch you don't, do you?
 10 A. I don't -- there is the potential for that many in
 11 Horizon but I think it will be likely somewhere lower
 12 than that.
 13 Q. Mr Coyne, the overwhelming likelihood is that there
 14 aren't more than 40 bugs of the sort that you have
 15 identified in Horizon, correct?
 16 A. Yes, but what you have got to remember is each of those
 17 bugs can have an impact on multiple branch accounts. It
 18 is not just one bug, one impact.
 19 Q. So are you suggesting that some of those bugs have
 20 massive impact? Remember, we are not talking about bugs
 21 that affect only the claimant branches. We are talking
 22 about bugs that are in operation over the entire
 23 Post Office network.
 24 A. Yes.
 25 Q. So on any view those bug impacts -- the total bug

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1 impacts is going to be very, very much greater than the
 2 specific impact that might affect the claimants, yes?
 3 A. Yes.
 4 Q. So the total impact of the kind of bug you are
 5 suggesting, to justify the £19 million claim just made
 6 by the claimants alone, the total impact of the kind of
 7 bug you are hypothesising would have to be vast,
 8 wouldn't it, in the tens and tens of millions?
 9 A. If we are using the law of averages to show that it has
 10 impacted everybody equally rather than just impacting
 11 the claimants' branches, yes.
 12 Q. I see. You are now suggesting that there might be bugs
 13 which have only affected the claimants and haven't
 14 affected the wider Post Office network, is that what you
 15 are claiming?
 16 A. I'm saying it is entirely possible because we know from
 17 the bugs that have actually happened that they have only
 18 impacted a small number of branches.
 19 Q. Is it really entirely possible though, Mr Coyne? You
 20 are hypothesising a bug which has had many, many, many
 21 effects in order to justify the suggestion that it has
 22 generated a large number of losses. That's what we are
 23 talking about?
 24 A. Yes.
 25 Q. Those bugs occur at branches because of factors that you

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1 are not prepared yet to identify, yes?
 2 A. I haven't been given the information to enable me to
 3 identify.
 4 Q. You don't have a specific bug in mind which has
 5 a particular feature which means that it only affects
 6 certain kinds of branches. You are not telling me that.
 7 You are saying that it is possible there might be such
 8 a bug?
 9 A. Yes.
 10 Q. With this theoretical bug you are suggesting it is quite
 11 possible that it could affect just the claimants'
 12 branches and not affect the branches in the wider Post
 13 Office network. Is that really your view? Do you
 14 really think that is a likely outcome?
 15 A. It may well have affected other branches in the branch
 16 network.
 17 Q. That's my point, Mr Coyne. It is all very well to say
 18 "I don't know, it is a really difficult judgment to
 19 make", but there are certain features which are just
 20 matters of commonsense. What I'm suggesting to you is
 21 that, bearing in mind the claimants represent such
 22 a small fraction of the total Post Office network over a
 23 period of 20 years, it stands to reason as night follows
 24 day that if there are bugs which justify their claims
 25 those bugs would also have incurred losses in the wider

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1 Post Office network. Would you accept that?
 2 A. Yes.
 3 Q. Would you accept, therefore, that the wider losses that
 4 would have been caused in the Post Office network would
 5 be substantially greater than the £19 million --
 6 A. That's likely, yes.
 7 Q. Yet nowhere do we see any sign of any bugs of the sort
 8 of scale that would be necessary to justify 100 billion,
 9 200 billion of losses caused by these bugs. Do you not
 10 find that surprising? Do you not draw any inferences
 11 from that fact, Mr Coyne?
 12 A. But there are bugs that we have found that have impacted
 13 many branches. So what if there is another -- I keep
 14 using the example of Dalmellington -- but what if there
 15 is another Dalmellington that has impacted 88?
 16 Q. We have talked about Dalmellington and we have agreed
 17 I think that there is no net lasting impact from that
 18 bug.
 19 A. But that was only cleared up in its entirety after five
 20 years.
 21 Q. So you are talking about a bug which affects 88
 22 branches?
 23 A. A number of which were impacted on multiple occasions.
 24 Q. So was it 114 impacts on 88 branches, is that right?
 25 A. I think that is right.

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1 Q. You are suggesting that that phenomenon would justify
2 the conclusion that there doesn't need to be thousands
3 of bugs in order to justify the claimants' claim, is
4 that right?

5 A. What I'm saying is using the profile of that type of bug
6 illustrates how there can be a large number of branches
7 impacted for a relatively long amount of time before it
8 is dealt with and with a large range of branch impacts.

9 Q. Mr Coyne, so far you have found 29 bugs and you have
10 very helpfully accepted that there are unlikely to be
11 more than 40 bugs if one were to read each and every
12 document, for which I'm obliged.

13 The supposition is that 40 bugs are capable of
14 causing £19 million worth of loss in the claimant
15 branches without causing any greater loss in the Post
16 Office network. Is that what you are suggesting? Are
17 you suggesting that's a viable scenario which might
18 explain what's happened?

19 A. You are asking me questions about the actual claim and
20 I haven't studied the claim. I'm aware of that headline
21 number that you are talking about but I have not looked
22 at the detail of the claim.

23 Q. I see.

24 A. So there is two possible scenarios. There is probably
25 many more. But that it has impacted the wider branch

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1 network as well or that it has only impacted the
2 branches which are claimants'.

3 Q. Sorry could you say that last point again? I didn't
4 hear.

5 A. What I'm saying is that there is a range of scenarios
6 that go from additional bugs or the bugs that we found
7 impacting just the claimant branches, is the start of
8 the spectrum, up to bugs, errors and defects not only
9 affecting the claimant branches but the wider Horizon
10 estate.

11 Q. I suggest to you, and my Lord bearing in mind the speed
12 with which this cross-examination has come, with
13 your Lordship's indulgence I'm not proposing to put
14 Dr Worden's section 8.7 analysis to him unless you
15 indicate to me --

16 MR JUSTICE FRASER: To Mr Coyne?

17 MR DE GARR ROBINSON: Yes, unless your Lordship indicates
18 that I really need to.

19 MR JUSTICE FRASER: No, it is entirely up to you. It can't
20 be said against you, I don't think, if you don't put it,
21 and as I made clear at the pre-trial review and in a
22 time limited trial generally a point like that would be
23 ambitious -- are you concerned that if you don't go
24 through it chapter and verse it will be said it hasn't
25 been properly put?

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1 MR DE GARR ROBINSON: Yes. My Lord, important points should
2 be put in my respectful submission.

3 MR JUSTICE FRASER: Yes, but this is really a methodological
4 difference, isn't it? So I'm not going to require you
5 to put every single --

6 MR DE GARR ROBINSON: I'm obliged my Lord.

7 MR JUSTICE FRASER: Is your intention literally not to put
8 any of it or just to put two or three headline points or
9 do you want to think about it?

10 MR DE GARR ROBINSON: Would your Lordship give me one
11 moment?

12 MR JUSTICE FRASER: Of course.

13 MR DE GARR ROBINSON: My Lord, I suspect that I will not be
14 putting any questions but I'm going to take instructions
15 overnight to see whether there might be some very short
16 number of points.

17 MR JUSTICE FRASER: Mr de Garr Robinson that is entirely
18 understood and entirely sensible.

19 MR DE GARR ROBINSON: My Lord, unless you have any further
20 points this may be a convenient moment.

21 MR JUSTICE FRASER: All right. That's fine. I mean just to
22 be clear Mr de Garr Robinson to make it -- well, to try
23 and help you when you take instructions on the way you
24 might want to or not to deal with 8.7, one way which is
25 often adopted is simply to boil it down to two or three

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1 propositions and deal with it like that. But I'm not
2 saying you have to do that because I think both the
3 experts have been quite clear about the different way in
4 which they have and haven't approached the exercise.
5 I don't know if that's helpful.

6 MR DE GARR ROBINSON: It is very helpful my Lord and I'm
7 obliged to your Lordship.

8 MR JUSTICE FRASER: I have one very minor housekeeping point
9 which may sound like a joke but isn't. Yesterday was
10 Day 14 and today is Day 15, what happened to Day 13,
11 does anyone know?

12 MR DE GARR ROBINSON: No idea. I was wondering that.
13 I think it is Day 11 actually.

14 MR JUSTICE FRASER: It is definitely not Day 11.

15 MR GREEN: My Lord, wasn't the handing down of the recusal
16 judgment which technically was counted as a Horizon
17 day --

18 MR JUSTICE FRASER: Is that what --

19 MR GREEN: I think it may have, I will check --

20 MR JUSTICE FRASER: I'm not suggesting we re-number at all,
21 as long as we are all working on the same numbering I do
22 not think it matters. All right. Thank you very much.
23 So Mr Coyne you are going to come back tomorrow.

24 A. Yes.

25 MR JUSTICE FRASER: Can I just raise one point about timing

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1 for both of you to think about. Ordinarily in any time
 2 limited trial , which almost all the trials in this
 3 building, certainly in the QB part of this building are
 4 time limited, re-examination is kept to a very, very
 5 minimum and I think I did tell you Mr de Garr Robinson
 6 at the pre- trial review that although at that stage we
 7 were looking at two days cross-examination of this
 8 witness, which was then changed to four, that you would
 9 have the vast bulk of that time.
 10 MR DE GARR ROBINSON: Yes.
 11 MR JUSTICE FRASER: Just in terms of the court staff, not
 12 for my convenience, can you just liaise between
 13 yourselves about approximately the time you will finish
 14 on Friday afternoon. I'm not making any indications one
 15 way or the other, but it would just be sensible for you
 16 to have a dialogue because Mr Green today I think has
 17 threatened re-examination on at least two and maybe more
 18 occasions.
 19 MR DE GARR ROBINSON: My Lord, yes.
 20 MR JUSTICE FRASER: So tomorrow 10.30 Mr de Garr Robinson?
 21 MR DE GARR ROBINSON: My Lord, yes.
 22 MR JUSTICE FRASER: 10.30 tomorrow morning. Thank you very
 23 much.
 24 (4.25 pm)
 25 (The court adjourned until 10.30 am on Thursday,

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