

Post Office Audio File 13017

(Audio begins mid sentence)

RON: ... finished up as 136.

IAN: [overspeaking] 150. Some were rejected on various grounds. The bulk of our work occurred during the mediation scheme and as we were working towards what became known as our Part 2 report, the Post Office wound up the mediation scheme and we were given a relatively short period to finalise our report, which we then did. And the Post Office terminated our engagement at that point.

We were subsequently engaged on a modified basis to continue work on a small number of cases, which we continued to do. But that only took a few months and at that point we were required to destroy all of our documents, hand in such documents that did exist back to the Post Office and that was really the end of our involvement.

RON: The only thing I would add to that, Ian, is that I think it is rather important -- because you will have seen in the reports -- mentioned in the Post Office's reaction to a couple of matters and the progressive narrowing of the scope, which was initially quite narrow, then it got wider, then it narrowed down again. Specifically in regard to criminal matters.

What was abundantly clear from the meetings we had with the MPs and in particular with Arbuthnot [overspeaking] what was vital that you know is that the primary focus of the MPs was to have us look for any evidence of improper conduct.

IAN: But that's outside the scope --

RON: That's outside the scope of today.

IAN: We mustn't go there at all.

RON: I'm very clear that the constraints are we mustn't mention anything to do with criminal prosecutions, civil cases, cases that aren't in the action and anything to do with privileged documentation; very clear on that. But it is vital that you understand that the scope got wider and then narrowed off very substantially.

IAN: Okay.

ROBERT: (inaudible).

IAN: Okay. Are you content with that?

ROBERT: I suppose the general question I want to ask before we go any further is, reading your reports, there is not a huge emphasis -- like you said the IT was a small part of it -- and you get the impression from your report that you kind of drilled down on the IT and you were talking to these subpostmasters, getting their side of the story and writing up the circumstances and so forth. What I expected to hear is kind of an abstraction of their viewpoint of what happened, rather than anything behind the scenes in Horizon. Is that correct?

RON: Yes.

IAN: I will comment a little on that. There were areas where we did drill into the technical aspects of Horizon in quite a lot of detail. However, Post Office and Fujitsu had difficulty providing some of the data to us. One of the key meetings that I had was with Gareth Jenkins at Fujitsu, who was incredibly helpful; was the architect of really the whole system over many years, knew it sort of absolutely backwards and was very helpful to us in terms of explaining the infrastructure and explaining the control environment and explaining change control and so on.

One of the things that we did identify at a fairly early stage was that the -- what we called, and what Horizon and Fujitsu have called the XML data was at the heart of really understanding what was going on. We can perhaps pick this up later on. It is covered in your list of questions. But one thing that we did identify was that, even if there was a major issue and a subpostmaster was calling for all of the data that was possibly available, they were never given the full XML data and it was only the full XML data that held all of the relevant transactions.

Because what became obvious was that a lot was going on underneath the surface that was not disclosed to subpostmasters arguably because they didn't need to know. These were sort of back office processes.

But one of the issues that was raised with us was so-called mysterious out of hours transactions that were

changing balances from a subpostmaster's perspective. We could see via the XML data that there were system level, let's call them corrections or transactions --

RON: Or reversals, Ian, remember some of them were reversals? We picked up some --

IAN: Well, reversals is a misleading term because of the way that the XML data was processed. One of the points that Gareth Jenkins emphasised was that there was a detailed audit trail, there were sequence checking controls and what is commonly referred to as a reversal is actually not a reversal. There would be a corresponding debit or credit transaction posted by Fujitsu, by Horizon, but with a completely separate unique reference number, that had the effect, in accounting terms, of either cancelling out a transaction or reversing it or whatever the intended purpose was. My point is that subpostmasters never got access to that level of detail.

JASON: Did you get to see XML data that showed those out of hours transactions?

IAN: Yes, and one of the documents, which I think has been circulated, was a spreadsheet. A so called unreadable document. A number of those documents in that spreadsheet were the core XML data transactions that were disclosed to Post Office by Fujitsu at our request. We identified a number of branches where issues had occurred and typically we would ask for a month's worth of data. That was provided by way of XML files.

RON: Yes, okay.

ROBERT: This is fascinating because to me Horizon started in 1998 and 2000. In those days XML was not on the scene, XML was just coming in. So my understanding has been that XML came on the scene in a big way with Horizon (inaudible) 2010. The question is what time period is this referring to?

IAN: Most of the data that we looked at, partly because of the retention of data issues, was data that arose fairly late in the cycle and it may well be that it was exclusively new Horizon rather than old Horizon.

JASON: It looks like we should be able to get hold of data that was returned, that you haven't had the opportunity to look at. Are you able to identify for us where those

particular transactions appear within the XML so we can go and look at them?

IAN: Yes. What you will have to do, quite a lot of what I would call reverse engineering -- because the XML data unsurprisingly was quite difficult to decode -- this is where Gareth Jenkins was -- and he provided us with look up tables, and other sort of assistance in terms of helping us to decode the XML data. It took some time. It probably took two or three months to even begin to make sense of it. Bearing in mind that at this point we had, what I like to call, almost sample data, rather than reeling into specific sort of transactions that were linked to losses that were identified by claimants.

Unfortunately the way the mediation schemes developed, at about the point that we thought it had actually cracked the data problem, the mediation scheme decided, right, we are going to sort of mediate, almost put everything on hold, because we have got the case level reports -- and I'm conscious that we are only looking at express cases -- we have case level reports and it was decided that they would attempt mediation on what was available at that point, rather than us continue this in-depth deep dive into the data, because clearly it was agreed it could be reached on that basis, there was no need for any further work.

RON: Ian, as I recall, the availability of the complete XML data information was pretty well restricted to Fujitsu. I got this sense, certainly when we were referred to the ARQ logs, for example, the audit trigger queries. And whenever we looked at -- if we wanted transactional history from Post Office, which they were later in the mediation process generating as part of their POIRs, the Post Office investigation reports, they would look into a case and pull transaction details.

What we were seeing there were essentially Excel spreadsheets which was driven by but was not a complete record of the underlying transactional data. That's your recollection too is it Ian?

IAN: Not quite. Let me explain that because I sort of took the lead in terms of the technical data. Fujitsu developed some scripts that would query the XML sort of data. So stage one was extracting the raw XML data. If that was in response either to a request from us, that's it, they will probably just hand over the data. If it was in response to a request from Post Office or from

the subpostmaster or as part of the mediation scheme, they would then run one or more of these scripts that produced an Excel spreadsheet that summarised the key transactions that would have been visible to the postmaster as part of the branch records.

What we found out later was, when we did a reconciliation between the two, in other words, the raw XML data and the Excel spreadsheet that was created as part of the script, there were huge sort of differences and this reflected the back office transactions.

JASON: We had done that only in a very limited form and now we have filtered data and unfiltered data, so it is the same transaction period. The filtered data sounds like the data that would go to the subpostmasters and tidied up in Excel. We have seen since unfiltered data which shows, at some level, the almost handshake between the internal systems, but we still believe that there is other levels of data -- [overspeaking]

IAN: -- one thing you may want to do is do a sequence check on the XML data because we found that there were quite significant sequence gaps, which we had been led to believe should not occur because the XML data stream was meant to reflect totality. We never got an explanation --

ROBERT: Stepping back again to the XML data, which you got, (inaudible) several years after it had happened. That presumably was from the audit data, is that right? [overspeaking]

IAN: That's my understanding.

RON: Sorry, not from the audit team. Okay, yes.

ROBERT: So amongst the audit tools there is a way to pull back some audit records and examine the XML.

RON: Yes.

ROBERT: Next question is, what sort of time period were you looking at, was it days or months?

IAN: Typically we would ask for a month's worth of data and that was sort of a fairly manageable size. There were a large number of transitions but it was manageable --

ROBERT: This is a bank's branch?

RON: What we would do is look at what we called a hot spot. We would say a branch is aware of a mysterious shortfall between that date and that date, sometimes it was as long as a month, for reasons we are going to get to later, but normally it would be within a week or several days. We would add a couple of days either side and that was our hot spot. And then we would receive the data on that basis which made sense.

JASON: We now have some of that data which has been re-extracted. I think we have the ability to have four months in total, in aggregate across all the cases.

RON: That's indicative of something we came across, which was that there seemed to have been -- we never saw it -- some contract -- of course there is a contract between Fujitsu and the Post Office, but we were told many times that that contract limited the availability of the underlying data and made it very costly, we were told, so to seek any more than minimal quantities of raw data.

JASON: We faced exactly that situation and exactly that argument. I think we are now through that and it has now become quite a bit easier to get that. Certainly barriers have moved out the way now, so we now do have access to the data. We still are not sure whether it is the true raw data or whether there is any filtering or not but, it has only just arrived with us.

IAN: If it is the XML data, that was presented to us as raw data. The one doubt that we had was, when we started running the sequence checks and we were coming across gaps, as I say, we never got an explanation for that.

JASON: In the knowledge that you spent a couple of months doing that and working that out, I'd be keen not to repeat or reinvent that same wheel that you had invented, did you keep any or did you hand back any notes on how you went through that process? Is there anything I can learn, to short cut my process?

IAN: There may be in some of the raw sort of data that we handed back to the Post Office, but our instructions at the time were to destroy everything, notebooks, even some of the sort of detailed work that we did that was, for want of a better word, experimental, that probably has not survived. As I said earlier, we did that in the so-called unreadable documents list. That includes

a lot of XML data.

CHEVAUGHN: Ian, sorry, earlier you said that if the Excel sheets were in response to a request from the Post Office for the mediation scheme and the subpostmaster, did the subpostmaster get those actual Excel sheets then?

IAN: That was certainly the intention because the sequence was: subpostmaster suffered the loss, made use of the various facilities that were available to the subpostmaster within Horizon, in order to produce sort of various reports. If they were switched on and realised that they needed sort of more information, one of the options open to them, even though this was not widely known, was to request this more detailed sort of data, as well as all these sort of mentioned. I think that was limited to 12 requests per month. That is certainly what we were told. Over and above that there were various cost implications and we were also told that the Post Office refused a number of requests to provide more detailed data.

Bear in mind that, as far as branch records were concerned, only 42 days of data was immediately available. That was then subsequently extended to 60 days. But the business cycle of branch transactions was such that you could actually -- and bear in mind that they shifted from weekly to monthly accounting -- you could quite easily reach those limits and basically run out of data.

RON: Particularly as regards to TC. TC could come in moments after the underlying transactional error, and that could pose a serious problem because if the TC came in three months after the underlying transaction that might have caused it, they were pretty well snookered because they could not draw back even later beyond 60 days and then they had to seek help. And then they would (inaudible) run into this response: you can't have help because it costs too much. That was a common response.

JASON: That's helpful. Robert (inaudible) sensitivity about getting the right raw data, because if the data that we have been given and has been extracted from the (inaudible) database and the extraction has been filtered to perhaps only include transactions entered at the branch, then that might show us one view. But if it is all transactions allocated to that branch account,

then that could include transactions that had been inserted in, potentially the balancing transactions is probably more like Fujitsu.

RON: You are actually using almost exactly the same words that we used, in our (inaudible) auditors [overspeaking]. No auditor worth their life carries out individual level testing of a population of data until he or she is assured that the population is complete. [overspeaking]. So you are exactly -- that's where we got hung up very quickly. We said, well, we don't necessarily know that we are looking at the complete population, why start sampling an incomplete population?

JASON: Of data. And we haven't quite or we haven't yet cracked that. We have been presented with filtered data, we have asked for unfiltered data, we have been given data but we have been told that it is quite not unfiltered yet. [overspeaking]

IAN: One thing that you need to bear in mind was that we were told that -- and I put this in context slightly -- we were told that had under the contract between Fujitsu and Post Office, there were financial penalties for -- I use the term transaction corrections, not in the sense of (inaudible) but adjustments to the data as a result of, again, using a fairly general sort of term, bugs in the system.

RON: Errors attributable to Fujitsu.

IAN: Yes, because this was felt to be a benefit to Post Office because it would incentivise Fujitsu to create robust software and so on. You can understand the argument. We were told that a substantial number of Fujitsu employees spent substantial amounts of time secretly -- again the words that were used to us -- making various adjustments to the data without Post Office's knowledge, because if they had disclosed this to the Post Office that would have resulted in financial penalties. That's -- we were told that on a couple of occasions.

We never were able to develop that any further but that's a further possible explanation for some of these gaps in the audit trail and, again, it is something that you may wish to fine drill into --

RON: I was told on several occasions by different sources, there is a 30 person team that was working for months on

end in order to avoid what they said was a £10 per transaction -- I never validated or verified that -- error charge that would have effectively sort of (inaudible) Fujitsu.

Now, typical of the sort of error that needed to be corrected was the calendar square issue.

JASON: Which?

RON: There was an error which manifested itself in calendar square, which was referred to commonly as the calendar square problem, which, as I understand it -- I'm going on human recollection here -- a number of payments made to let's say a water company, finished up in some Scottish local authority. In other words the payments went adrift and the reason they went adrift was the data got mashed. The sort codes of the beneficiary account numbers of the intended beneficiary --

IAN: Ron, I think it could be misleading if we are doing this from memory. I would suggest look at the [overspeaking].

RON: In other words, there was a known problem that Fujitsu was aware of. They were able to correct it. That I was told was the sort of transactional adjustment that needed to take place.

JASON: Certainly one of the documents -- I will send you a link to the particular document -- but it talks about Fujitsu making corrections and things like that and they don't actually need to be brought, those adjustments, to (inaudible) unless it reaches 100 per day.

ROBERT: You mentioned that.

JASON: So it might well be the case that the Post Office aren't aware of -- it only hit the high 90s.

IAN: We never saw that.

JASON: But we need help with the context of it because it talks about up to 100 E/91 errors --

ROBERT: We don't know what the D numbers mean yet.

JASON: We have references to that.

IAN: In the context of that, something which came as a bit

of a surprise to us was the fact that, let's call it live Horizon, new or old it doesn't really matter, we assumed that the entire sort of population of subpostmasters would be operating whatever the current version of Horizon was. At some point we were told, no, that's not the case. At any point in time there are multiple -- define multiple -- up to six different versions of Horizon sort of in operation and that reflected the sort of maturity of the software, the fact that it was rolled out incrementally. But it was a surprise to be told that not everybody was operating the same version and, therefore, if there were bugs and errors within a particular software version, it wouldn't necessarily affect all branches, it would only affect a subset of branches that had that particular --

RON: Ian, that validated or reinforced the correctness of the decision we made right at the beginning because the MPs were saying: we assume you are going to review the code of (inaudible) and we didn't laugh out loud. We said, no, I do not think that's going to work. (inaudible) trial by wire cases and things like that. We said no, we are not [overspeaking] because there will be multiple versions of the system and because the system changes over time --

IAN: To be fair we didn't know that at the time. This was very early on in the scoping negotiations. I think it was Kayla Nell, who at one point was very keen, raised the question of the (inaudible) view. Our position was no -- [overspeaking] look at outputs rather than --

RON: Yes, that was a meeting where she said you guys are going to do a white wash, you won't be interested in real current cases that have just occurred and I said, you are damn --

IAN: Ron, we are getting off topic I'm afraid. This is not about the technical aspects of Horizon, it is more about our appointment. I think it is outside the scope for today.

CHEVAUGHN: Did you ever discover whether there was a log which Fujitsu kept of which branches were on what versions of Horizon?

IAN: Yes. One thing Fujitsu I think were very good at was what I called change control, as you would expect with their engineering background and so on. My understanding was they kept very detailed, sort of,

records as to which versions were deployed when and to which branches and what the changes were between versions.

One thing that we thought of doing, but didn't do in the end, we asked at some point for a dummy system to be made available so that we could actually test at desktop level how transactions were processed, what vulnerabilities existed, if, for example, the phone line went down. One of the reasons we didn't do that was, it was at that point that we were told, ah, we need to decide which version of Horizon you want loaded onto --

RON: Ian, what I was about to say -- you are correct to interrupt me -- what I was going to say was, right at the outset, we said it is better to find instances of allegedly mysterious events and reverse engineer how they occurred, than to try and look at the totality of 64 million pieces of software.

IAN: Yes.

RON: That was all.

JASON: I think our thought process is the same. We have got the data, once we can validate that is the right and full data. We have got a number of reports from specific, sort of, postmasters about occurrences on a particular day or week or month. We hope we can trace back into the reverse engineered data. Then from there, we hope we can go through Fujitsu's change management system and find out what version they were on at that particular point in time. But then I do want to get that code and find out how that particular thing could have happened. [overspeaking].

RON: We envy you Jason because that is the way the investigation would have gone had it not been for the mediation scheme, which took it to a slightly, in a sense, more superficial level.

ROBERT: I personally think, even given a sample case of this person had this problem in this year, and even given the XML and so on, to actual drill down to code and say this bug did this, I think that is a tremendously tricky --

RON: Yes. That was fundamental to the whole case. The Post Office was --

IAN: Ron, don't forget what we said in our report, broadly accepted by the Post Office, that the majority of errors were caused by error at the counter and from the technology perspective, it could be quite difficult to differentiate between the sort of key-in keyboard type error and an alleged sort of bug --

RON: And indeed unusual combinations of circumstances, which it would be very hard to replicate. We might not even know the circumstances that led to it. Was there a power cut?

IAN: What was quite useful, I think it falls outside the scope of today, was to look at maybe the controlled environment at branch level, what system level controls existed to prevent keying in errors. One thing we were very conscious of, and saw demonstrated on a number of occasions was the fact that it was a touch screen and there was no automatic registration between points on the screen and icons.

A subpostmaster could think that he was pressing sort of one icon, but that was actually registering on the system as something completely different because there was no automatic sort of screen registration to deal with that.

RON: That's one of the reasons we made a point about paying in slips, you probably read it in the report, where we are saying, when there was a transfer of control of responsibility from the -- well, to the customer, which of course is what banks were doing for years, I'm a retired banker -- when that happened you immediately subject one party, in this case the subpostmaster, to the risk that, if the person who has got the sole control of responsibility happens to have benefited from the error, it makes it rather less likely that that person is going to volunteer that information. The Post Office never got that point. I made that point and said actually it would be great (inaudible) the control. They didn't accept that.

ROBERT: Sorry, could you run through that again?

IAN: Ron, one word of caution, that description falls outside the scope of today because we are looking solely at hardware and software issues relating to Horizon.

JASON: We are talking about control measures at the branch though.

CHEVAUGHN: Yes, data entry.

IAN: Okay.

RON: I will go over it very quickly, (inaudible). In the old days when one paid in, let's say, £1,000 into your bank account, you would use a paying in slip and write £1,000 and get it stamped, £1,000 on a piece of paper that the bank would process. The Post Office used exactly the same technique, and I'm talking about post-Horizon online. This was a Labour change that came into effect. What they did was say, now you are going to use cards, swipe your card -- banks do this as well -- then the counter part keys in the £1,000 and the customer walks away with a piece of paper. There is no retained piece of paper in the branch. What that meant was that the responsibility for picking up an error of that counter of £1,000 being keyed fell on the customer. If the customer walked away with (inaudible) with £100, he was okay, because he would come back and say: I paid in £1,000 and the teller would say, no, you didn't and so an argument would develop. But in the old days, of course, that customer would come back with a stamp paying in slip that said, no, I actually paid in £1,000. So, in other words, the control degradation for the customer for the new process but it was worse for the subpostmaster because the subpostmaster then got nothing. What had happened before was that there were controls taking place after the counter transaction, which were no longer in effect. And so I said, this is -- I'm a control specialist -- this is a control degradation. The Post Office in the end said -- first of all they said, no, it is not and there was a silly argument. Then they said actually whether it was or wasn't, it was forced upon us by Santander. We didn't take that decision. We said, well, what's that got to do with it?

JASON: That does fall possibly into our number 5. How, if at all, does the Horizon system itself prepare transactional data recorded by Horizon against transactional data sources outside of Horizon? Because there has to be a reconciliation between the Horizon system and the amount that the bank had (inaudible) been withdrawn or paid into an account.

ROBERT: (inaudible) you were talking about (inaudible).

IAN: It is a point of principle that, certainly, perhaps I need to understand. I'm looking at the court draft

order, definition 3, "Purposes of the list of issues":

"The Horizon system shall, for the purposes of this list of issues, mean Horizon computer system hardware and software, communication equipment and financial data to centers where records of transactions made in branch were processed."

Now, that is a very narrow sort of definition of Horizon. I do not think that includes human activity at branch level other than the example that I have given, which was keyboard errors, screen errors, icon registration sort of errors. I do not think that includes the business processes which actually in our report we felt were much more significant and were probably more likely to be the cause of errors, rather than software bugs in Horizon.

MALE SPEAKER 4: To pick that point up, I think one of the things you were saying was actually (inaudible) cash in the branch (inaudible) errors and that comes outside that.

IAN: This is as very narrow definition. But, as I understand it, that's the way that the case has progressed. This trial is looking solely at Horizon within the scope of this definition, hardware, software and data processing.

JASON: Yes. I think you are absolutely right what you say there. So the human handling aspect of it is not necessarily covered, but we do have a section that talks about robust controls. So that must include that validation of the --

IAN: Perhaps we need to understand what you mean by "robust controls" because that could mean either robust controls within the software environment or does it take us wider into business processes?

CHEVAUGHN: I think so because it doesn't specifically say technical controls.

JASON: So, to what extent is the Horizon system robust and extremely unlikely to be the cause of shortfalls in branches?

IAN: As we have said in our report, Horizon's system is generally speaking robust. The level of errors that

were identified -- and bear in mind the mediation process was available to all subpostmasters and former subpostmasters, 12,000 draft orders or whatever. We had 150 applications. That tends to suggest that the Horizon system, most of the time, works out as intended and arguably is a robust system. What we said in our report was that the -- and I'm conscious that I am perhaps straying outside this definition -- what we said in our report was that it was the business processes that were the cause of many of these sort of problems, rather than, for argument's sake, software coding errors.

Even though we did become aware of some transactions, one was mentioned, sort of calendar and there were others covered in our reports that did give rise to some errors, but the biggest problem overall was the way the Post Office responded to reports of errors, rather than the causation of errors by this technical definition of Horizon.

JASON: Yes. I think that latter point is almost certainly outside of what we are doing but the other two aspects --

RON: Jason, this concept of robustness, which is a comparative phase, how robust is robust? How strong is a pair of shoes? I spent much of my life designing and approving bank systems from loans to foreign exchange and so on; what we observed here was that this is a system which was used by 68,000 odd users. The abilities of those users varied enormously. As wide ranging as you can get. This is like, one wouldn't expect me to be able to drive a formula 1 racing car and you certainly wouldn't expect some of the people operating this system to be able to do that.

This was a system which, in the hands of somebody that really had huge attention to detail, huge readiness to work with the (inaudible) shortfalls, was okay. But for some of the users, particularly those that were assistants inadequately trained by subpostmasters who were stumbling around in the dark, the robustness in our view is not adequate.

We are not here to give our opinion but to recall what happened. So we found instances where errors would have been systematically repeated and because the people didn't know they were making mistakes, they didn't seek additional training to correct those mistakes. They

didn't think they were making a mistake. Therefore, they trained their own staff in that pattern of processing, which was incorrect, and in some cases acknowledged by the Post Office as being incorrect. For example ATMs, Camelot and a number of other issues.

What then happened is, where those errors were being repeated, and the system wasn't repelling them, we obviously concluded that the system was -- error (inaudible) was inadequate for the population using it. That was all. It doesn't mean to say the entirety of the system was inadequate. That's why we chose our words very carefully about determining whether or not the system was fit for purpose. Most of the time it was, but for those where it wasn't, there were life changing consequences.

ROBERT: Do you have in mind cases where the system could have repelled errors but didn't?

RON: Yes. Well --

IAN: Screen calibration. The fact that a SPM would think he was pressing one icon but the system would actually register that as a different entry and that was not necessarily sort of visible to the subpostmaster. Communication failures. [overspeaking]

RON: An even better example was the recovery process was awful.

IAN: The example we were given where, in some cases, messages generated by the system were never visible to the subpostmaster. If there had been a power failure, for example, the screen would be powered off at the point that Horizon was displaying a message. It would be impossible for the subpostmaster to know what that message was.

Some of the requests generated by the system were at best ambiguous and were impossible to answer correctly or in the way that the system intended them to be answered because the subpostmaster does not have the necessary information in order to answer.

I think that quite legitimately was a control failure within the technical aspects of Horizon that had not been sort of anticipated.

JASON: Certainly a lot of the issues that are noted in

things like the error log and things like that, relate to the recovery process of a counter. Lots of --

IAN: Recovery changed pretty fundamentally between old Horizon and new Horizon. Arguably it was more robust in new Horizon. In old Horizon there was a polling exercise between baskets held at various terminals in a multi-sort of terminal environment and that arguably was less impacted by communication and, sort of, power failures because that information was actually held at the branch.

Under new Horizon that situation didn't occur and perhaps introduced a different type of vulnerability or different type of operation.

JASON: So under new Horizon -- sorry to jump in -- what data, if any, is stored at branch?

RON: Only wild batches [overspeaking] -- been created and stored and sent. Whereas before, under old Horizon, it was sent off at the end of each day, so you had a lot of data being held --

IAN: It wasn't at the end of each day, but there was more data held locally across multiple sort of terminals.

JASON: Until the polling period kicked in~--

RON: Correct. The other thing, answering Robert's earlier question on repelling errors earlier on, you will see in our reports quite a lot about one sided transactions. This is where we said, if one goes into a bank to put money in, the totality of the software that the teller is interacting with is within the bank, whereas we had this situation where we were encountering situations where somebody had perhaps paid a tax bill using a debit card, and one side of the transaction went through and the other one didn't. In other words, if both sides go through, that is great, that is the intention. If no transaction goes through in either system, that's great. Not as good but not so problematic. But if the customer gets charged for something that hasn't gone through, sort of, the water bill doesn't get paid, he finds out about it. Whereas if the opposite happens and his tax bill does get paid, but he never sees a debit on his account, it is less likely that that's going to be diligently followed up by the customer.

ROBERT: It is a zero sum basket.

RON: Because the zero sum baskets were in Horizon whereas the link system was debiting in a separate system. Two systems running in parallel --

ROBERT: (inaudible) live, isn't it?

RON: So you could get a situation where one side will [overspeaking]

ROBERT: That is a case of what they call a recoverable transaction. If you have done something irreversible on another system and Horizon wants it -- [overtalking].

RON: Yes and no, Rob. (inaudible) if a transaction has already gone through to the bank, there is no way that the counter clerk at the Post Office can reverse that. It is unstoppable. So that transaction has gone through.

ROBERT: But there is some mechanism for recovering, for getting to the point where the customer is not screwed.

IAN: Outside of Horizon of course there were reconciliations and that's a separate area and [overspeaking]. But under the definition in the order, that's outside the scope of this trial.

JASON: It can't be, because that has to be covered by how does Horizon reconcile itself with data --

IAN: Horizon doesn't, is the short answer. [overspeaking]. It is the outputs from Horizon that are reconciled with other systems, but that's not, as I understand it, anyway --

ROBERT: I think this comes to the point about the scope of Horizon, we have to look at that robustness --

RON: You have to. We can do.

JASON: Because in very simplistic terms, if the bank is saying: you have £10,000 of deposits that were made today that are due to me, that £10,000 has to go. If that figure is different to what Horizon says the branch says has been handed over in cash, there is a reconciliation --

RON: That's what feeds the suspense accounts. That's where you get entries in suspense accounts. The simplest example of this interface between different systems is

when one looks at ATMs, which is why we concentrated on them. Taken together, although only as I recall 40 or so of the cases that we looked at involved ATMs, it may have been fewer, 36 -- because obviously not all Post Office branches have an ATM -- the differences, the discrepancies plus and minus arising from ATMs were, with the exception of foreign exchange dealings, by far the largest. They were typically 20,000, 30,000, 40,000. A good example of that we mentioned in our report that -- Ian pursued this very diligently -- we wanted to see what the balance was of the Bank of Ireland suspense account and it was £96 million covering six months' transactions.

That relates to discrepancies between what the subpostmasters were saying had been dispensed out of their ATMs and what Bank of Ireland said had been dispensed. Now 96 million, assuming 1,000 branches had ATMs, I don't have the figure, that would be £90,000 per branch as an average items --

ROBERT: Money gone adrift?

RON: Yes. It is colossal. Bankers have cleared the suspense accounts by 7.30 am on the day of the transaction. That's what I understood. These were six months old and the point being really that the way -- as we floated the air gap -- [overspeaking]. Let me refer to the air gap. This thing that some people have read.

We said isn't it strange that, so there is an ATM, if you go to Tesco's and go to the ATM or Waitrose or whatever, if you go inside the wall where the ATM is, there is a brick wall. You can't get to it. It is serviced by the bank. The bank puts the money in and if there is a shortfall, the bank suffers the loss. When the Post Office changed that process, now, the person responsible for filling the ATM with £144,000 was the subpostmaster, and the person responsible to count up at 4.30 each day how much was left and to receive from the ATM its report as to what had happened that day, that was the responsibility of the subpostmaster.

So there that data had been transmitted electronically of course to Bank of Ireland. But for some reason the postmaster had to take the printed output from the ATM and key it into Horizon and said today 45,000 was taken out of my ATM or whatever.

What then happened was Bank of Ireland took its

already supplied (inaudible) reported that to Post Office, who compared it with what the postmaster said had happened and in some cases said: you said that £45,000 was dispensed, we say Bank of Ireland said it was £65,000.

ROBERT: Are we saying that was a simple transcription error in somebody having to read a number and type it?

RON: Could be, there were about four reasons.

IAN: [overspeaking] system where completely impossible numbers were --

RON: There were billions. There were numbers coming out of those printouts that were in the billions, completely daft numbers coming out. Post Office view was, as long as it was not the cash dispenser figure that was wrong, it is probably all right. This is where the postmaster had filled in one of the cassettes, realised he had made a mistake and put the money in the wrong cassette, filled it in again, the poor bloody machine didn't know if it was coming or going and generated false data. Now, what we said that was --

IAN: That wouldn't have produced the errors of the magnitude that we came --

RON: It did produce some funny numbers, we saw multiple --

IAN: The numbers that we saw, that you referred to as billions, would not have been produced reinserting cassettes. It is much more likely to be a glitch within the Bank of Ireland system that was reported by the ATM, which was never investigated or resolved by [overspeaking]

RON: What we are saying is [overspeaking]. The way that was corrected -- and that was the phrase that was used or regularised -- was that a transaction correction invoice, a debit transaction TC, would be processed by Post Office, which was then accepted or otherwise by the postmaster. If the postmaster, as was many times the case in the matters we looked at said: I don't know what you are talking about, that money is not there, I didn't steal it, so the customers have had it; Bank of Ireland says, that is not the case; they had to receive that transaction correction and cover the shortfall. And the shortfalls typically were 20/30/40,000 or £80,000 in one instance that we looked at.

So what we were saying was, it is a bit of a strained process. Why are you accepting without question the word of a person from the Bank of Ireland who you have never met and saying that the person that is not telling the truth or has made a mistake is the person who is your appointed agent, who has been there for 25 years?

I said that is foreign in banking processes because in a bank -- I know I used to investigate lots of ATM shortfall cases -- if there is a shortfall in an ATM, the banks are all over it like a cheap suit straightaway. And you would say suspicion falls on the people who had had access to the machine that day. We would then call other banks in the area and they would say: funnily enough, we have a shortfall as well. And they would say: yes we had a shortfall, we thought it was our teller number 2. If our teller 2 wasn't there the day another shortfall occurred, so we would investigate straightaway.

We only came across one case that was investigated out of all the ATM cases and that we only learned about after all we had finished our report. In that instance, a 27,500 pounds ATM shortfall was charged to a very, very smart, very aggressive, very wealthy person who was a subpostmaster -- too case specific? Might not be a claim.

CHEVAUGHN: (inaudible).

RON: Okay. The generality then is that -- I'm only aware of one case that was investigated in 13 months and the finding at the end was that the postmaster had not made a mistake and he was reimbursed.

ROBERT: Can I ask some general questions around that. (1) when you were investigating ATM problems not to do with the Post Office, what generally turned out to be the cause?

RON: External fraud.

ROBERT: Just somebody had some fancy scam?

RON: Yes.

JASON: Whose job it was to refill the ATM --

RON: Sometimes the ATM engineer but most frequently

extraordinarily, elegant hacking cases.

IAN: What we could rule out in this case was staff within Bank of Ireland who realised that whatever numbers they produced were automatically accepted, were never challenged by Post Office, because the Post Office's default position was, if there was a discrepancy, the subpostmaster was [overspeaking].

RON: If I had been in that process in Bank of Ireland I would have committed a fraud for sure, I am used to it. If the fraud can occur it will, and if you can hit victims that won't be able to retaliate, they get hit. We said: look, why do you keep believing whatever Bank of Ireland says has been paid out? And then that, we would --

IAN: This brings us back to [overspeaking]

JASON: It also brings us back to number 5.

IAN: Other examples of (inaudible). I have flicked open a copy of the (inaudible) report. We were aware, as a result of looking at the XML data and what SPMR told us, of these mysterious out of hours transactions. However, the software ignored all of that. The fact that at 5.30 on a Monday afternoon the branch shut and then didn't open until 8.30 am the following day, there was no software control over out of hours transactions. There wasn't even any sort of error logging or reporting of those transactions.

RON: And the same person could sign on in two branches at the same time, for example.

IAN: Again another fundamental weakness over the lack of control over user ids and passwords. We came across numerous examples of password sharing and a lack of robustness within the Horizon software that prevented the same ID being used at multiple locations at the same time. User IDs were also allocated to the system and occasionally we would see their system level IDs appearing in some data stream, but again that was often not[overspeaking]

RON: That happened in automated reversals, wouldn't it? Because if the system went down during a recovery process (inaudible) that processing of a basket of transactions or a single transaction could not be completed by Horizon. Perhaps, at 6pm at night, after

the customer had gone home and the branch had closed, the system would reverse that transaction, but they allocated to that reversal the ID of the person that input the transaction.

CHEVAUGHN: If Fujitsu (inaudible) and doing these secret amendments, as you referred to earlier, essentially it would use the ID of the branch manager.

IAN: Even though the branch was shut --

JASON: That is one of the questions.

ROBERT: What Fujitsu have told us is that the audit holds a record of things done by the person in the branch who has the password.

JASON: Yes, that does appear in one of the documents. Something about the 65th something or 75th element or partition.

ROBERT: Based on an account review Fujitsu -- some of the guys in Fujitsu could not do that, could not create that record because he didn't have the password of the branch.

JASON: Possibly not to be done (inaudible).

CHEVAUGHN: If it was (inaudible) I could access the [overspeaking].

IAN: You could generate a transaction with any item.

CHEVAUGHN: -- create a password and then if they phone up and say this doesn't work I would say, sorry -- [overspeaking]

IAN: At systems level you didn't even need a password. Within the XML data stream we were seeing transactions that were allocated to IDs that were not in use and, therefore, it wasn't a matter of somebody sort of logging on with a particular password and that data entry appearing in the transaction stream. These were system generated transactions. How they were initiated, we don't know. We just saw the results of those --

ROBERT: You saw examples of this in the audit data?

IAN: Yes.

ROBERT: That's interesting because that seems to go against the way Fujitsu described the (inaudible) in the audit data.

RON: Yes, I think you might find that references to seals in data and all the rest are references to seals and controls within the Horizon software. What we were finding was that there are other pieces of software that access the data, which may not be subject to the same control (inaudible). [overspeaking].

ROBERT: I don't think they can change that. What we saw was the audit data and I'm comparing that with Fujitsu's description of how the audit data was sealed.

IAN: My understanding is that Fujitsu's position is that the transaction data, the audit data, is sealed, is controlled, and whilst they were exceptional processes that could access that and alter that, that the authorisation procedures to implement that was such that there was, in effect, sort of no risk from that. I'm not sure I agree Ron that there were sort of external systems that were altering the --

RON: I will tell you what I'm referring to and you remember how, in a sense, we got worked up about this. I asked a question, I distinctly remember the wording, we asked a question because it was so fundamental to this point: has Fujitsu -- has Post Office or Fujitsu or any of its agents ever altered branch data without the knowledge or permission of the postmaster? That was the question.

The answer that came back -- I distinctly remember every word of it -- was the Horizon system has no functionality that allows the remote accessing of branch terminals. And I went mildly ballistic and said where in the question phrases are the terms branch terminal remote access and so on? We want to know if the data for each branch has ever been modified. I don't care where it might have been done.

IAN: Remember, Ron, their answer again was quite a clever one because it wasn't that the data was being altered. What we eventually got out of them was that the transaction stream -- additional entries were being injected into the transactional stream which would have the effect of modifying balances but not amending the original --

RON: I take issue with you Ian. I love you but it was not

at all clever. To investigators like us that was a really stupid response because it was so crafted to be -- essentially to cause us to say (1) why would you come up with such a carefully crafted answer. Sorry.

IAN: But it was true. We absolutely established that if they wanted to modify a balance at branch level, they would not try and amend the original entry, they would inject additional entries into the transaction stream.

ROBERT: How do you get that into the audit, that is the question?

IAN: It was going into the audit trail. It was being reflected in the XML data.

JASON: We do have it from the document that explains it quite well. It actually shows you as a screen shot of the screen that Fujitsu used to inject the transaction.

ROBERT: I think it is one of the ones you sent --

JASON: It has a massive disclaimer at the top saying: warning, anything you do on this system will have a direct effect on branch accounts.

RON: We didn't see that. Well done.

IAN: Well, we did, we did get this submission where they were correcting --

RON: I never saw that screen.

IAN: We referred to it in our Part 2 report because this was one of the documents we found fairly later in the day, where they had three options to correct --

RON: That was the internal memo.

IAN: -- a problem and one of the options was accompanied by this warning that if it doesn't become public knowledge --

RON: It will undermine the confidence in the system and cause all sorts of --

JASON: Shall we break for some chips?

RON: Fish and chips ...

JASON: My only observation (inaudible) the agenda. What we might do is we will grab something and try and step through and we will allow ourselves to go in different directions.

RON: We would prefer you to go through our report and say, we have highlighted these 25 items, can you give us some more granularity about that.

IAN: But unfortunately we are constrained by the report and that's why (interference) straying outside the agreed definition.

CHEVAUGHN: I think, as Jason said earlier, looking at the big picture is important. So you are right that the definition (inaudible). [overspeaking].

There are two cases here, there is protocol and the Horizon issue. If you are straying outside the Horizon issue, that's entirely what (inaudible). The only concern I would ever have [overspeaking].

(Off the record discussion).

MR WARMINGTON: So Ian you experienced the BBC sandwiches yesterday or the day before?

IAN: Yes, they are good. (inaudible).

MR WARMINGTON: (inaudible) photographic memory of the stuff.

ROBERT: I was desperate to find this one document.

JASON: It is just the reference number appears in a (inaudible).

ROBERT: Is it (inaudible)?

JASON: Probably not.

ROBERT: (inaudible) Fujitsu?

JASON: I'm not sure, I mean he has (inaudible).

IAN: I think he may have retired by now because I have a feeling he was asking to stay on just at about the time we were wrapping up (inaudible) all the rights. But he may not be readily available now. But he was very impressive and I felt that he was the ideal sort of

engineering sort of person. He was objective, he had huge technical knowledge and he wasn't sort of (inaudible).

JASON: I had seen places where he made comments about bugs not being apparent in the Horizon system, it was part of the transcript.

IAN: An example is one of the questions I asked him was about remote access and he immediately said: of course we have remote access direct into branches; sometimes we need to (inaudible) to fix it, even though when we subsequently went on the record about that with the Post Office rather than Fujitsu, we consistently got the answer there was no remote access --

RON: They may not have known. [overspeaking].

ROBERT: Between the Post Office and --

RON: Yes. The funniest aspect of this was in following up on the allegations about Brackwell. We asked the question: do you have any people in the Brackwell building in Fujitsu? And the answer was, no. We said: we think you do. The person we were dealing with was Simon Baker. Nice chap. Who was our connection to sort of (interference).

He called me one day and said: I have got good news and bad news. Good news is we found the department did have people from Fujitsu in the building and there were Post Office people. I said: what's the bad news? He said the bad news is they have apparently been reporting into me but I didn't know they were there.

MALE SPEAKER 4: I wondered who they were ... [overspeaking]. Out of sight. [overspeaking]. I'm probably pronouncing people's names differently to the way they do. Is it Chevaughn?

CHEVAUGHN: Some people do say Chevaughn, which is like the Irish. It depends where you are in Ireland. (Pause).

(Inaudible conversation due to eating and overtalking.)

MR WARMINGTON: Did you make the box car?

JASON: We did. (inaudible). He is obviously not serious. (inaudible).

RON: Was that Red Bull --

JASON: The Local (inaudible section).

CHEVAUGHN: Okay.

RON: What happens is you walk across the square (inaudible) and the family will say: "Hey Ron," and you turn around and somebody you haven't seen for 25 years and it is a real memory test.

JASON: Yes.

ROBERT: (inaudible).

RON: Yeah (inaudible).

ROBERT: There is a bunch of us who kept in touch since college for years. (inaudible).

RON: You were in Logica, weren't you?

ROBERT: Yes.

RON: Were you MD at Logica?

ROBERT: No I was MD at Cambridge for the research branch. Then Martyn Reed came in and (inaudible).

JASON: Martyn and I worked together in Logica in 1976.

RON: That was the year after I went off to CitiBank. I was in CitiBank from 75.

ROBERT: When banking was respectable. [overspeaking].

RON: [overspeaking] investment management business.

CHEVAUGHN: (inaudible).

RON: Before heading an investigation which was by far the most interesting thing. [overspeaking].

JASON: It looks to be a document that talks about how you access what looks to be a front end form in (inaudible) and all the elements of a transaction on that and you can bring something up on the left-hand side and it basically over types something on the right-hand side or alternatively you can inject like a balancing transaction.

CHEVAUGHN: Yeah, I think this was for the SAP team.

JASON: POL SAP. Quite possibly.

ROBERT: Their accounting.

CHEVAUGHN: Following the manual [overspeaking] they would fix what was on [overspeaking].

JASON: But that ultimately would then flow into a branch account.

RON: Yes.

CHEVAUGHN: It would into the -- yes.

ROBERT:

IAN: (inaudible). They did run a separate accounting system which -- I forget the name -- POL SAP.

ROBERT: They renamed it POL SAP in 2010. Originally named POL FS in about 2005. What happened before that?

JASON: They probably moved to an SAP (inaudible). When Horizon first [overspeaking] in the 98 POL FS -- [overspeaking]. What they actually did was they had POL [overspeaking].

MALE SPEAKER 4: Jason, I think what the history is that POL FS came in in 2005. SAP ADS had been around and that was SAP for [overspeaking] in 2010 they merged those two, called them SAP --

JASON: Right well [overspeaking]. Because the process of transaction corrections is ultimately started in POL SAP and then that balancing transaction gets pushed out and gets accepted by the Postmaster.

ROBERT: The interesting question is whether anything started in POL SAP has to be pushed out and accepted by the postmaster before it can --

RON: Yes. That is a good question.

JASON: Following on from this document that we can't find, one of the suggested requests for information, Robert, is that we say: how often was this process evoked? [overspeaking]. It might be a modification to a branch account that the postmaster has no knowledge of

whatsoever.

CHEVAUGHN: Yes.

JASON: It is different from the TC process.

RON: In any modification branch account, the ultimate impact of that is that it changes the amount of cash and items of value that that branch has to have to balance the books.

JASON: So if that transaction is auditable, there is two ways of getting at it, you can either ask Fujitsu how we follow that process and how many transactions per day or per month go through or alternatively they tell us how we identify those transactions and then we can then look at a branch account, and we might be able to spot the particular accounts that are -- that have been (inaudible).

CHEVAUGHN: But I think it is those (inaudible) part of reconciliation.

JASON: Reconciliation of what with what --

CHEVAUGHN: Client systems to --

ROBERT: I think that's what creates TCs and --

CHEVAUGHN: No, I don't think it is --

RON: That was not the impression we got. The impression we got was that process that we are talking about invoking, this sort of secret process, was really Fujitsu trying to cover up or deal with, in as quiet a way that it could, the errors that its software had generated, not had arisen from relationship with clients.

CHEVAUGHN: It could be this scenario, that Barclays have a record of a transaction and the authorisation code and it is the amount that's debited but that electronic time stamp for that transaction is corrupted. So it will be 0. So then the counter will have that transaction that was requested as a credit, the authorisation code that was provided from them, with the correct time stamp. So somebody will literally sit there and manually correct the time stamps, so the reconciliation against those (inaudible).

It is not like it is something that then knocks

the transaction correction. It is so that the data is in --

RON: You are both right because the proper procedure, the disclosed procedure, would be that, if there is something surfaced, manifested itself by reason of the reconciliation of a client such as Santander, the same with investments, Royal Mail, blah, blah, blah, any reconciliation there threw up something which seemed not to have been processed correctly or in the same way, in a matching way, the proper procedure for correcting that is through the transaction correction process.

So, I would be intrigued to see why they would use a process other than the TC process to do something that was the result of --

CHEVAUGHN: Because I think there was simply far too many of them to issue TCs put forward --

ROBERT: It is a lot of TCs --

CHEVAUGHN: -- I think these are happening on a daily basis.

RON: I'm not going to argue with you on that, you have gone deeper into it than we have. As Ian agreed, we'll articulate it, our sort of in-depth technical penetration of the (inaudible) was virtually terminated as we got involved in the mediation process.

IAN: The same document talked about the repair cash account.

RON: Okay. (Coughing) you are not expendable, so be careful. (**Pause**). Have you ever been to Tombstone in Arizona?

IAN: No.

RON:

IRRELEVANT

IRRELEVANT

MALE SPEAKER 4: You went to Tombstone Arizona and bumped

into him --

RON: (inaudible) thought it was going to change his life and it did, but it wasn't (inaudible).

JASON: The definition of widespread errors in 100 branches being affected --

RON: So the key word was systematic versus systemic. We were very, very reluctant to refer to anything as systemic. We did in the end because systemic meant to us something that could occur right across the **entirety of the** system as opposed to being occasionally systematically repeated.

MALE SPEAKER 4: Ian pointed to that with what 16 --

RON: There was a huge volume of transactions going through that system. It can be pretty robust, pretty reliable. But if a strange combination of events causes an individual error, it is the follow up to that individual error that is consequent (inaudible) if it is a life changing amount.

JASON: With that number of transactions over an infrastructure that is relatively complex (inaudible) across a wide area with a lot of connections, there is bound to be [overspeaking] a number of those transactions that are not properly logged or missing or whatever [overspeaking].

It is, as you say, it is how that is then dealt with that to me is (inaudible) the nub of the issue. If they are all dealt with correctly, then it is not likely to have any impact. If even some of them are dealt with incorrectly, then there will be an impact and it depends whether that impact will ultimately affect particular branch accounts.

RON: Will this cause you to lose even more hair for jumping around, the famous paragraph 12.12 of the 144 points contract, which refers to responsibility for losses, uses the word "caused" twice in the paragraph. It basically says caused by, (inaudible) losses caused by negligence of the postmasters or, worse, caused by their staff. It doesn't mention (inaudible).

Our responsibility is for the postmasters to correct. The whole nub of this case is: who determines who has caused that error? In other words, is there

an assumption that, if there is an error, it was caused by the postmaster or the staff? Or is there an investigation to determine who or what actually caused the error? That's the whole -- it is the core of this case.

CHEVAUGHN: Was there ever a response when you -- going back to the ATM and said: why are you always trusting what the Bank of Ireland always say, was there ever a response where they say: we have an express agreement where (inaudible).

RON: No, because the same question applied to the trust in Camelot, the National Lottery, National Saving Investments, HMRC and all the other clients.

IAN: It might have fell into the (inaudible) black hole of suspense accounts and as soon as we started asking questions about suspense accounts, that was it --

RON: I said if you have got -- it was the wording that Ian picked up, which was [overspeaking] in suspense accounts were either debit or credit. So if it is a credit entry, it means that the Post Office potentially can benefit from that credit entry and my position was there are only four legitimate beneficiaries of entries -- assets in those suspense accounts. One is the customer, who has been short changed. Two is the Post Office itself. It really was due the amount sitting in its own suspense account. Three is the client, you shouldn't have sent them money but it did. The fourth genuine beneficiary would be the subpostmaster. And my position was, if you leave entries for considerable periods of time and then trouser the contents of those suspense accounts, you are by definition sometimes trousering money that was due to subpostmasters. And if you are delaying that process, you are subjecting the subpostmasters to the temptation to false account because they are faced with a shortfall, (inaudible) sitting around in a suspense account that they cannot recover, and therefore they have to do something about it. And therefore I think some were tempted to do something they shouldn't. That was why the suspense account issue was so hugely significant.

JASON: The other by product for that suspense account, that, if only one of the possible scenarios shows that the subpostmaster has done something wrong -- I'm not sure wrong is the right word.

ROBERT: Suffered a loss.

JASON: Then that means that the net effect is three out of four of the transactions --

RON: That's crude -- sorry. You don't know what the frequency error was --

IAN: The real problem was the suspense account balances were not disaggregated. There may well have been billions of transactions which came in total to 25million or whatever it was. We never got a clear explanation --

RON: It was 96 million on the Bank of Ireland and 66 million on the Santander --

IAN: They had a policy of taking credit balances back to the P&L after three years. We know, for example, when we looked at it, that something in excess of 100,000 was credited to --

RON: I was shocked how small that was frankly [overspeaking].

ROBERT: I have got a misunderstanding about the suspense account. I was looking at the monthly balancing process and there my impression was, if the postmaster [overspeaking] imbalance, he could either pay it off or he can shove it into the suspense account.

RON: I can clarify on that easily. Originally each branch had available to it an in branch suspense account to which it could post entries.

IAN: Ron, I don't want to stop you but there were at least two types of suspense accounts. What we were talking about were third parties but what you are talking about were the [overspeaking].

RON: I am covering it. What then happened was clearly that was over used, as it was bound to be destined to be over used where people said I know (inaudible). The Post Office said this was getting out of control, so they actually withdrew that facility to the branch office. They later reinstated it but for a large amount of time in relation to the cases we looked at --

JASON: Do you know approximately how long?

RON: 7 years. I am counting it going from --

JASON: That's fine.

RON: So let's say that it is in place, so the branch suspense accounts. That is entirely different from what we are referring to. When I first said to the Post Office -- Sir Anthony Hooper posed the question during the mediation process, he said: is it possible that a surplus in one branch could manifest itself as a shortfall in another? And he kept on about this until he was blue in the face. At every meeting he would raise this because I would say, yes, and he immediately (inaudible). That's when I said you will have suspense accounts and Post Office said we haven't got them. And I said, don't be daft, you will have suspense accounts. Post Office said, no, we don't have them. Then Ian goes -- then they said yeah we have one, we have one suspense account. I said that will be the overall suspense account; you will have a suspense account for every client relationship you have because, when you have a lot of transactions with any counterparty, there will always be differences. And therefore eventually they said: you are right, we found we have got those. But that was like (inaudible). We then met with Campbell, the new finance director at that time. He called in a chap called (inaudible), who was the person I think in Derbyshire responsible for reconciling the main suspense account and its subsidiary account and it was a bit of an eye opener. I don't want to say any more than that, and that was our last meeting because we said: it sounds to me as though you are not reconciling those accounts and that was about it.

But we would have got to that stage much earlier had we not been diverted off for the mediation. Does that accord with your recollection?

IAN: Yes.

RON: You are looking a bit puzzled.

IAN: I was just thinking that the one thing that they challenged in our Part 2 report, was they wanted us to change from the wording "in relation to suspense accounts". But actually what we reported was a quote from an email from this account, so we said no. It was interesting that he (inaudible).

RON: I'm not allowed to go into cases. There were

instances where we really wanted to -- where we knew of instances where a customer had done something, something had failed, a cheque had rebounded, the postmaster had got charged with the effect of that bounced cheque, the customer then in one case corrected the situation and made a payment to Inland Revenue, the postmaster never got reimbursed.

We knew the Revenue got paid twice. Something happened to that second payment. It either resides within the national coffers or, more likely, (inaudible) they would have sent it back to the Post Office, who would have dropped it into the HMRC suspense account. But it was never reconciled so it finished up I think, I suspect -- too far? We don't know. That would have been worth investigating.

IAN: What I would suggest now is we canter through the --

RON: Yes.

ROBERT: We will try to keep up.

JASON: Number 1. This is the first issue that we will have to deal with. (inaudible) possible bugs, errors or defects to cause apparent or alleged discrepancies or shortfalls in the branch account?

CHEVAUGHN: This is page 4 of the lists of issues.

JASON: So what we are looking to do is find evidence or evidence to the contrary that there are bugs within Horizon at various points in time and that by looking at those bugs, we can determine that they could have caused a shortfall. Now, we are aware of a system called the known error log. We have got the data for that. We are aware of the PEAK system, which is all the (inaudible) calls, whatever, is determined that a software code change was required as a result of that.

RON: Is that what PEAK meant?

JASON: Yes, it is.

RON: It is not synonymous with bug?

JASON: It is.

RON: We just wondered why they coined the term.

JASON: It is the name of the system. What does it stand for? [overtalking]

RON: I was always intrigued as to why they called the term PEAK.

JASON: I think PEAK does stand for something. I can't remember what.

IAN: To answer your question, it includes the word: was it possible? Of course it is always possible. The only bugs, errors or defects that we became aware of were the ones that were disclosed to us, that we refer to in both our reports, initially in our interim report, and then some further references in our final report.

CHEVAUGHN: (inaudible).

JASON: How was that small number arrived at? Because I don't accept that there can only be at that point in time that number of errors.

IAN: No, but those are the only ones we knew about and we knew about them because they had been disclosed to us. We didn't become aware of them as a result of some fantastic investigative work that we did, other than we were trawling through large numbers of documents and certainly in one place I came across references to correcting these items, and then when you back tracked we got this further disclosure.

JASON: Do your reports say where you found that reference that had been corrected?

IAN: Certainly the Part 2 report does go into quite a lot of detail. The interim report slightly less, but we do go into quite a lot of detail (inaudible) what the bug was and the impact on it. And the other thing that we noted was that, in one case at least, it took at least 12 months for the bug to be detected. So that begs the whole question -- [overspeaking]

ROBERT: To do with some annual check (inaudible).

RON: Right. Okay.

CHEVAUGHN: There is also Dimensions, that that's supposed to record all of the documentation. So there ought to be release notes and things --

JASON: And it is from Dimensions that we got these particular documents that talk about correction and reconciliation processes. I think it is those processes that reference particular systems to do reconciliations and things like that.

ROBERT: So it is Fujitsu's files.

JASON: Yes. So we have got the first on the 18th. I think we get the next drop of documents from Dimensions. So there's going to be literally thousands of documents there. We have already got 18 of them, which were based on a key word search. The (inaudible) at the moment is following the meeting we had the other day, we have added some more requests for information to the bottom of that document. We haven't finished it yet but we are going to submit it by tomorrow. We will share it with you anyway but --

IAN: Is that the one I have asked you to stick an extra column in?

CHEVAUGHN: Yes.

JASON: We will stick the extra column in and there are extra requests at the bottom. It would be great if you supported us in asking those questions but if not we are going to ask them anyway.

IAN: Sure.

JASON: They are all based around trying to determine bugs, errors and defects.

RON: Presumably you want to know when it was detected, whether it exists and whether that bug -- how long it is likely that bug existed prior to being detected and how many branches and to what extent that bug may have impacted the branches? What was done about correcting it? Who was told about it etc?

JASON: Yes.

RON: I can see a spreadsheet.

JASON: The focus at the moment has been the documents that outline the process of dealing with the impact of the defect. So, it is sort of like, Fujitsu saying: there's clearly a problem, we are trying to find out what the problem is, until we sort out what the problem is, this

is how we correct it, we have set up a new screen etc. What we are saying at this stage is: when did that start? How many of those were you doing a day and the hope is we can tie it back to a particular (inaudible).

CHEVAUGHN: I found a document this morning which said the (inaudible) were recorded and QC'd, which is Quality Centre [overspeaking].

JASON: I think Quality Centre was the tool that was used before they migrated to PEAK.

CHEVAUGHN: The document refers to all those. (inaudible).

MALE SPEAKER 4: Quality Centres are generally used for testing, for capturing test scripts and test result.

CHEVAUGHN: It says (inaudible) defects would be recorded in there. [overspeaking]

ROBERT: They may also record operational defects. I'm not sure about that.

JASON: Even where the Quality Centre was one of the document (inaudible) that was mentioned on the (inaudible).

CHEVAUGHN: Kathy Bick is Fujitsu's internal repository.

RON: Chris, what you just said there is kind of interesting because in the same way as you would expect and it turns out to be true, that Fujitsu would keep a list of bugs detected, ordinarily, what I'm used to, is the corporation itself, the Post Office would keep a similar log of operational glitches; things that were not working.

IAN: (inaudible) didn't want to know, that was the whole problem. There was a breakdown between the two.

RON: No I'm talking about (inaudible) was keeping a list of the (inaudible). I'm talking about the Post Office keeping a list of things that weren't working properly, such as the ATM, such as the out of sync situation that arose on Camelot on lottery tickets, where they repaired processes that were found to be deficient.

JASON: We believe that the Post Office had input into the known error log because when they were dealing with their password and the help desk, they would search the

known error log to find out whether it was known and if they couldn't deal with it at a business process or training level, then it would be passed onto Fujitsu. Fujitsu would look at it and the systems (inaudible).

I think the tone of the documents that talk about issues arising, are very much in the spirit of what you just mentioned there Ian, that the Post Office don't really want to know unless it triggers this widespread issue affecting more than x hundred --

RON: They were clearly extraordinarily concerned about the brand and the danger to their entire business probably in the event that Horizon was in any way discredited. That is abundantly clear. It came out in the Governmental investigation process.

JASON: The other route that we could take for bugs, errors and defects is to recreate the process that these guys have been through, looking at the Excel data. We just (inaudible) yesterday back at base, one month of data, to try and pass through it and try and recreate, in a sense, (inaudible) accounts from the raw data. And then we can look at the specific complaints about that period and see whether (inaudible) on 14th February whatever, we have got the 14th February in there --

IAN: You could ask for a copy of the script that they ran to generate the Excel spreadsheet because -- whilst I was going to provide them with that script, I did get for the same period the raw XML data and the spreadsheet and it was actually quite useful to be able to compare the two.

JASON: Yes, and I think we might have been tripped up a little bit because there was a discussion about: do you want filtered or unfiltered? And I said completely unfiltered and that's what we think we've got but then we have never been told that actually we might not have got unfiltered, it might have been filtered. But I think we will know more about that in the days to come. Do you have any more we need to ask about item 1?

ROBERT: Not really.

CHEVAUGHN: Sorry, what did you say (inaudible) have you got any specific logs that anyone is aware of or names that spring to mind --

JASON: I think what would be good is the data that you have

already looked at, that we should be able to get hold of because it has been returned back to Post Office now and it in disclosure --

IAN: It is not in disclosure because it is in the unreadable list.

JASON: We can just get the unreadable file and hopefully just deal with that. Is that disclosable to us?

CHEVAUGHN: Yes, it is.

IAN: But they haven't physically handed it over. The correspondence I saw said: these documents are unreadable and (inaudible) not disclose them.

CHEVAUGHN: There could be a number of reasons why they are unreadable. So it all depends on --

JASON: I'm pretty sure it is because they have put it in a relativity system, it is not Word, it is not Excel --

CHEVAUGHN: We will just make a request --

RON: I do not think we can make a quality evidence based opinion, any input on that. Of course it is possible, it has happened.

IAN: But look at our reports because we have identified all these -- [overspeaking]

RON: We didn't discover -- we would love to have -- but we didn't discover any bugs.

JASON: When we get that XML data, it might well be the case that, once we start to understand it or we get to the stage where you got to with that data, we might need to talk again about what I can see from that data and see whether if we are understanding it in the same way.

RON: I would draw your attention to the fact that it is not really bugs, errors or defects. The whole business about running branches that were in sometimes countryside locations, with very weak or interrupted telephone connections, sometimes the system reverted. In one case this lady was running on emergency generator power and kept turning the system on and off to save money. [overspeaking]. And the system kept going -- twice a day the system would go down. [overspeaking]. Using mobile phone signals to carry out really quite

complex multi-operator system just -- there is a certainty that that was causing defects; it was a source of defects.

JASON: Number 2: did the Horizon IT system itself alert subpostmasters of such --

RON: No. The nearest you get to that is the recovery process that said, "Look, I have gone down and we need to do something about that." We have reported on that. There was a false assertion that we had cleared that in our interim report and said it was okay. We didn't.

IAN: There were some Post Office generated newsletters that occasionally made reference to [overspeaking] and so on.

JASON: That's interesting.

RON: That's true. We didn't spend a lot of time (inaudible).

JASON: There wasn't a screen from Horizon in the bottom saying "you have been migrated to the new version".

IAN: We weren't Horizon users. We went to Horizon training and we saw various Horizon screens but we didn't spend a lot of time using Horizon.

RON: Branch Focus was the magazine. Branch Focus elaborated on the problem with Camelot lottery tickets, where quite clearly there were a mass of errors and out of sync situations. Particularly if you are running a corner shop, the Post Office is only open at restricted hours, but the (inaudible) are behind the counters all the time selling lottery tickets that you can only process the following morning. And they were getting out of sync. So there were TCs flying around, always for £160, because that was the price of a lottery pack. The Post Office twigged that and said clearly this is not a functional process that worked. So they put that in Branch Focus and then came up with some software called PNG, to automatically do something which historically had to be done by people in the branch and where they had been consistent in -- or in many cases -- they were getting it wrong to their own detriment, PNG corrected that. But it took several years for that to be put in place. They saw the problem, reported it in Branch Focus, put it in a temporary change and two years later put in PNG to actually sort it.

ROBERT: If we look at TCs we will see a bunch of Camelot ones and [overspeaking].

RON: Yes.

IAN: When we looked at the numbers it was thousands, if not tens of --

RON: It was serious, very serious.

ROBERT: If you can imagine, if it was impacting on a number of important branches.

RON: The numbers were pretty dramatic.

IAN: It was the closest we came across to a systemic error because it was a process failure [overspeaking].

RON: They rolled out a process that's not perfect. Banks do that all the time. Of course the difference is the bank -- (inaudible) myself on many occasions -- but we do that -- but the bank suffers the loss. In this case the point that we made was that, if a decision to roll something out saves money to the roller outer, but it actually bundles risk and cost onto somebody else's shoulders, it is not necessarily an unimportant decision.

JASON: With regard to whether the system itself alerted to any (inaudible).

IAN: Generally, no (inaudible).

RON: So through the robustness question, I have cross referred all the questions to our report.

JASON: Right okay. [Overspeaking].

RON: I did that on the train this morning. The handwriting is not very good.

ROBERT: That's okay, we'll figure it out.

JASON: Now number 4, part A of it.

IAN: Again it depends -- this is the errors of major --

JASON: Yes.

RON: It is all over the place depending on the sort of

transaction. There were a number of transaction types that the Post Office processes --

IAN: To cut a long story short, a problem we were told about quite frequently was the decimal point problem. Something that was being entered as 10.00 was recorded by the system as 1000.

JASON: Right. (inaudible) isn't being pressed or isn't --

IAN: Well, isn't being recorded --

RON: You have got 10, 100, whatever, and that [overspeaking] would cause the wrong number.

IAN: But this was a feature or a function, to a certain extent, of the touch test screen and the icon representation, where, if the icon sort of got out of sync and there was no automatic calibration, frankly, anything could happen. And since so many discrepancies were linked to errors of the counter, I think we felt that data entry errors were a significant part of that.

RON: It is sometimes hard work -- I know this jumps ahead. For example, although I don't believe for a moment -- we had no -- the conclusion reached was that postage stamps and postage labels were not the cause of huge errors, but they were a cause of numerous errors, not large in terms of finance. But what was happening there, in many instances for sure, was somebody would process a parcel label; Mr Customer that's going to be £12.50, hit the Horizon terminal, the postage label would get screwed up or fail or be invisible. So they would have to process it again. The customer had to see he got his label. What was meant to happen then is there's meant to be a process saying, it failed, keep that to one side. That was frequently going horribly wrong but it was mainly driven by hardware problems. For example the label printers. But of course the Post Office was deeply suspicious or the investigations team was, that people were abusing this process and some were for sure. Some were saying actually it didn't print well, when it actually did.

IAN: They weren't controlling the raw label paper. In other words [overspeaking] wasn't in --

JASON: Pre-numbered form --

IAN: Yes, it wasn't an accountable item, sitting in

a drawer somewhere [overspeaking] had any value, which always struck me as a rather strange definition. Because, again, if I was a fraudster, if I could get hold of the stock of the raw sort of label, I'm pretty sure I could write a programme to print something.

RON: We did find a bug on exercise licence because they don't do it anymore, when you are able to retax your vehicle. We found one instance where a customer got a six month tax disk instead of a 12 month one and that was because the barcode was screwed up [overspeaking].

IAN: [overspeaking] Whoever printed those made a mistake in the barcode and it was a six month disk which when it was scanned was registered as a 12 month.

RON: You would have to have the eyes of a peregrin falcon to notice that sort of thing, so that sort of thing was occurring, as it is bound to in [overspeaking] products.

JASON: Would that lead to a shortfall?

IAN: It certainly would lead to an error because for financial purposes it would be treated as one thing, but physically it was being sold as something else. In other words, they were selling [overspeaking].

JASON: But only receiving £60 from the customer.

CHEVAUGHN: I think there is detail in your report --

IAN: Another example was -- and again I don't want to get into the weeds -- but a lot of people would regard a First Class stamp as a First Class stamp and that was the end of it.

RON: It was a Christmas stamp.

IAN: The Post Office would then issue these special stamps and some would sell it as a First Class stamp but actually on their accounting system it was recorded as something completely different.

So again that would give rise to discrepancies because the Post Office sensibly was accounting for it one way and the branch was selling it on a different basis.

MALE SPEAKER 4: (inaudible) a six month licence is treated as a 12 month licence. Does that come out in the wash

in a transaction (inaudible). Does DVLC actually keep track (inaudible).

IAN: Where it should show up is on the reconciliations and we didn't get into that level of detail.

ROBERT: It should have happened but did the DVLC at the end of the month, somehow, the gap would get spotted and put back?

JASON: Yes, in theory it should. The licensing authority should say it is a six month licence, you have only collected the cash for a six month licence rather than a 12 month licence. So therefore we won't pay. You owe us -- it would be a TC in the value of the net difference between the two in theory. Some of that is in your report anyway, so we can have a look at that.

Right. So part B is transfer of data or processing of data in Horizon. I do not think the difference matters for this conversation, does it really?

ROBERT: Not hugely, no.

IAN: Again, I think that is a level of detail which we didn't really get into other than suspense accounts and reconciliations. I'm not sure we really sort of understood some of the Post Office management accounting systems and so on and we mentioned POL SAP before. Whilst we were made aware of those, exactly how they operated, how they were integrated and generated entries that ended up in Post Office's financial statements, again, (inaudible) to look at.

JASON: Yes. Okay. Number 5, we touched on this before. How does Horizon prepare itself ... (inaudible). So its data within Horizon, comparing itself with transaction data outside of Horizon. Now, I see this reasonably simplistically as Horizon comparing itself or, actually, data that's generated by Horizon or at the counter --

IAN: Being reconciled to third parties.

JASON: Yes. The bank, Camelot --

RON: I wrote the manual intervention.

JASON: At the back end?

RON: Manual intervention was predominantly manual processes to compare the results of data entered in the branches into Horizon, with the transactional summaries or balances generated by outside clients.

JASON: Now banks will know because of the link system or whatever it is. So they will know how much they should be paid. Camelot will do the same. Is that the same for all of the customers? Will they know how much they should be paid or --

RON: I think it is a pretty good generalisation -- [overspeaking].

JASON: Sorry?

[overspeaking].

I think that's good that. It makes the argument simpler, doesn't it really? So none of them trust the Post Office system, they have their own view of the world. Horizon has a view that it presumably aggregates across all branch accounts --

ROBERT: I was interested in your remark that it is manual. I thought it is always file A, file B. [overspeaking].

RON: [overspeaking] as a result of that comparison trigger manual processes to generate TCs. There are feeds from which they arise. [overspeaking].

IAN: I do not think that was happening in Horizon. My understanding was there was a monthly sort of BACs total operation that extracted daily totals from Horizon that then went into POL SAP or some other system and its the external system that was the starting point for counter reconciliation.

RON: It is not part of Horizon. There is a process called Harvester, isn't there?

CHEVAUGHN: I thought that they were in the bucket of Horizon. [overspeaking]

RON: We never saw any evidence of that reconciliation process, automatic triggering manual creation of TCs. We never saw any evidence of that.

IAN: What we were told was Horizon was basically driving branch accounting, but that was then the end of Horizon

and the start of all these centralised systems within the Post Office.

JASON: Because one of the architectural backgrounds I have seen, it shows that, that you have got all the branches who have a hundred different types of transactions in them and there is a process, I don't know whether it is called Harvester, but it goes on and it takes all of these and rescans them into customer accounts and then adds that up. If that reconciles with what the Bank of Scotland says, happy days and everything goes. If it says, no, it is £12.50 difference, then you have to do something with these. Then, at that point in time, it might be a one to one reconciliation of every transaction and then there will be one transaction that's wrong or ten that are wrong or whatever and then perhaps that's where human eyes get on those ten transactions and say: what are we going to do with these ten? And it will have a branch indicator next to it which says --

IAN: I think they lost the branch (inaudible) at that point. As such reconciliations were done (a) they were done fairly late and (b) I vaguely recall being told that at transaction level they lost the ability to link it back [overspeaking] transaction.

RON: That's why there was such a delay in the creation of TCs because had it been entirely automated then TC related to an ATM shortfall, lottery scratch card shortfall, would have come out the next day. They didn't. They came out months later.

ROBERT: I think TCs coming out later may be due to factors beyond the Post Office control. [overspeaking].

RON: Why did you charge me this amount, I didn't ever get the goods? I know people said my electricity was cut off, my phone was cut off but I have got the stamped receipt from the Post Office, from the postmaster, from the branch. I just noticed they were never charged for it. That might occur three months later.

JASON: Right. Okay.

RON: So that was simply because again a one sided transaction had occurred and in some cases where there was a power failure or something, the postmaster would stamp the person's tax bill as having been paid, or his water bill or rate or council tax, and the customer

would say: has it gone through? I don't know the system is down. Well, I got to go, I have got to catch me bus, has it gone through? I don't know. I have got to catch the bus and then the system is saying it didn't go through. Now the customer has gone out with a stamp receipt, but it hasn't gone through.

ROBERT: And it is three months before it gets sorted.

RON: Yes. The postmaster doesn't know who that customer was --

IAN: I'm not sure it did. When we started looking at suspense accounts, we were given the balances that were still overdue or outstanding at that six month point. That presumes that much larger amounts were unreconciled for a shorter period, but very substantial amounts were still unreconciled after six months.

RON: That tied in with this key phrase we have not mentioned so far "don't worry it will sort itself out". The question that arises is -- they were going to answer is: when will it sort itself out and what am I supposed to do with a £20,000 shortfall, which I have to make good today and you are not able to tell me when it is going to sort itself out? Or am I going to hide that because otherwise I can't open the accounts or --

JASON: Did you get to the bottom of why some of these second ones were delayed by six months or more?

RON: No.

IAN: Just that it was a fact that (inaudible).

JASON: I wonder whether that is a -- you said there is a document somewhere that talks about that process. I wonder whether that is a Gareth Jenkins type question?

IAN: No, I think this was more POL SAP internal accounting. [overspeaking].

RON: As in Titanic, the one that was the coward that got on the boat. If you watched the film or read the book ...

ROBERT: Never saw the film, I missed the reference.

RON: "Jack, Jack". (inaudible).

JASON: Right. Okay. Number 6: to what extent did measures

and or control that existed in Horizon prevent, detect, identify, report or reduce to an extremely low level of risk data entry errors? Which I think we have covered. Data packet or system level errors. I do not think --

IAN: Again that changed between new and old Horizon. According to Gareth Jenkins, he was quite proud of some of the error correction. I mean things that we were specifically told were user check digits, the ability to reconstruct failed to (inaudible). And at the system level, obviously some thought was given to building that into the design and into the system. The empirical evidence was that certain things could happen, like a communications failure or a power failure, and the system would not recover quite as precisely as Fujitsu expected it to, in some circumstances.

RON: I'm going to criticise your questions now. You miss out the word "fraud".

JASON: No, the questions have been handed to us.

RON: When you design systems, financial systems, you not only have to reduce to as low a level as practicably feasible the errors; you have to reduce the option of fraud and I raised this in paragraph 20.15. We say, again I mentioned it earlier, where you allow customers the opportunity to commit fraud, perhaps in collusion with a counter assistant, there is not my point in stealing from one's own branch because you will have to make up for the shortfall, unless you run a temporary loan, but the detection of fraud by counter assistants is bloody serious because if a customer comes in and pays £100 and processes £10,000, that immediately creates --

IAN: What we are talking about here is technical error correction. What I'm saying is Fujitsu designed what, on the face of it, was quite a sophisticated error correction procedure but the empirical evidence from branches was that it didn't work as was sort of -- as well as Fujitsu sort of claimed that it did, and that errors did occur as a result of power and communication failure.

JASON: The evidence of that we can go to your report which references specific (inaudible).

IAN: In part, yes. But, again, we were relying on the evidence from the subpostmasters, not all necessarily

who are claimants. So you need to be a bit careful.

CHEVAUGHN: Did Gareth Jenkins ever say --

IAN: Gareth sort of took the party line, we built error correction into the system and we are satisfied that it is pretty robust.

CHEVAUGHN: He never said but not always?

IAN: No.

JASON: We have logged while we were at Fujitsu -- sorry, at the Post Office mobile office and then conversations we had with Fujitsu since that, I'm pretty content that, certainly on the new version of Horizon, the communication between branch and Horizon back office is pretty robust. It's got (inaudible).

IAN: (inaudible).

JASON: The problem is once it gets in Horizon, that's only in the intermediate area before it goes off to all of these businesses and it is at that point in time when all of the control seems to fall away.

RON: We used the phrase, the worst errors were the errors corrected when correcting errors. We refer to it in paragraph 12.6 where we say that, time and time again, we were being told and of course we didn't believe it, was, you know, I had an error, I had a shortfall, it was £3,000, I called the help desk they told me to do this and that, they lost me and I did what they said and now it was £6,000. Goodness it doubled. They said: don't do that, do this, this and that and now it is £12,000. And we heard that so many times. What we --

IAN: Ron, that's different from this question. What you are describing is process failures not technical --

JASON: To be fair it does say measures or controls that existed in Horizon and that has to mean and the operation of Horizon. So I think it is fair to cover that.

RON: I do concede that it is an extrapolation of the question to this very serious error issue, which is that the help desk was trying to help people, clearly; but the combination of probably not doing exactly what the technical help desk said or in some cases did what the

help desk said --

IAN: A common response was: I have done what you said but my error has doubled.

ROBERT: Did you reach the bottom of that as to why something happened with a plus rather than a minus?

RON: [overspeaking]

IAN: [overspeaking]

ROBERT: There is not a minor sum somewhere? Is there a binary thing that you are either positive or negative [overspeaking].

IAN: In as much as press this, press this again, press this again [overspeaking]. But actually the system has [overspeaking].

RON: I did hear, just hearsay, people would say: when I called them back -- the same thing happened a month later; I called them back and I said to the person, "Last time I did this, this, and this" and they say, you shouldn't have done that. "You didn't seriously do that, that would have doubled the error". And they say, "yeah, it did".

So they were saying -- I could not confirm it because we never got -- the conversations were recorded but we never got the recordings, so we desperately wanted to hear some of these conversations and of course the so-called transcripts, which weren't, they were simply notes taken by the help desk of what they had told the people to do -- and when we made the point that anyone who has ever called the Apple help desk -- and I do sometimes -- will get an email which says: we had this conversation, what we asked you to do was x, y, z was that satisfactory?

IAN: But they weren't even contemporaneous notes. What they were was they record sort of issue codes to categorize the type of issue being raised. It is not somebody writing down or typing verbatim what happened. Again, it lost the level of detail.

RON: So we couldn't validate -- attest to the reliability of those albeit multiple quoted inputs from the help desk.

JASON: One of the E codes we were looking at in the document is duplicate transaction identifiers. That is to do with the reconciliation on the banking side of it.

So I don't know whether it is saying the transaction has been entered twice or as a result of putting the transaction in, and the technical defect, we have ended up with two transactions.

IAN: The impression I got was that because of timing delays within the system, and it could be linked to communication problems, subpostmasters at branch level would think -- would enter something, would get no response from the system and then they would repeat that and I'm not sure that there was any effective control preventing genuine duplicate transactions being --

RON: That was the issuance of a £30,000 saving certificate for a premium bond --

ROBERT: To me the question about that would be, if the postmaster erroneously does something twice and gets £3,000 out, because it is done in double entry transaction, zero sum plus, will that come out in the wash?

RON: No because the customer would only pay in once. In other words, the customer comes in and says: I want the biggest investment (inaudible). What about a £30,000 premium bond? That would do nicely, I will use my debit card.

He will only pay once for sure. But if he gets -- bad example, a premium bond, because a piece of paper changes hands -- but if it is some other benefit he gets later or deposit into his account, and he has paid £1,000 in in cash, but gets three lots of £1,000 in his account, he is going to keep quiet about that. He is only going to pay once, the customer will pay once, but might benefit thrice.

ROBERT: I was thinking of the direction of errors. Is that the same scenario you are talking about? You know this: ring the help desk. Is it the same scenario?

RON: The correction of errors ought to be zero sum because it is solely within Horizon. Then you would be right.

IAN: Yes. But the advice from the help desk, to a certain extent, I felt it was generating single sided

transactions. Often it was quite a long time after the originating event. It was often quite late at night. I think they were told to do various things, but the results lost were not always reflected immediately in whatever information was available to the subpostmaster. At best he might subsequently then have to run some of the reports after that are available to him. It is not as if he is looking at a real time live sort of banking system. He may get told to do some so-called error corrections, but it would be some time later before he knows what impact that had on the branch transactions.

JASON: The question is, does it come up (inaudible).

CHEVAUGHN: I thought you were asking then -- so if I -- if you come to the counter and say: I would like to withdraw(inaudible).

IAN: No. Somebody ringing the help desk at the end of the day is not a customer.

CHEVAUGHN: No.

RON: -- is there some sort of gain? Because I can't imagine any situation or I never came across one where the help desk would say: in order to do that, you have got to make a payment through the link system. They won't, they will just make entries within Horizon. And I'm pretty confident that that's a reliable process.

No evidence that that process will go wrong, but there is plenty of testimony that the help desk was worsening situations and we don't quite know how that happened yet. Again, we didn't have a test system to say how would that work?

ROBERT: To test the help desk?

RON: To test the help desk, exactly.

CHEVAUGHN: I think they feed from the (inaudible) so they look to see if something has been reported in a similar vein, they reported steps against those and it just followed --

RON: Yes, because everybody said the help desk was trotting out script. They said no, no [overspeaking]. Script waste support.

CHEVAUGHN: If you have two similar tills, where the remedy

completely breaks things rather than fixes it for the second one and then that's quite simply (inaudible) could fall down quite badly.

RON: Yes. I saw lots and lots of printouts from extracts from the conversations that allegedly took place involving the help desk, but that was typically a little paragraph and it would say it was resolved. A little paragraph that had been typed out by the help desk person on the phone while in the conversation. It was pretty superficial stuff.

CHEVAUGHN: I mean --

RON: It didn't say: I told the person to do that and that, then they made a mistake and I told them to do that because they pressed the wrong -- it didn't have that stuff in it.

CHEVAUGHN: I think it is where you are limited to get through so many calls --

RON: And also you have got to remember that the help desk -- first of all, the hours the help desk was open were reduced down and then they realised they had reduced them too much because, clearly, when they went to monthly balancing, over a trading period -- originally it was weekly. We said: hang on, why did you do that? Because by definition you have got four times as many transactions. If you have got an error, you could have compensating errors within that month. It is much more difficult or more risky to check branch accounting monthly than it is weekly. And if you are doing it monthly, by definition, you are going to have lots of people all calling the help desk saying "I have found I have got problems". So the help desk wasn't open long enough to pick up the people that were finding an error in the trading period. They did stagger the trading period slightly. So not all 11,000 people were calling the help desk at the same minute, but it was still a hell of a bottleneck. So I think they were time restricted on those calls.

ROBERT: I just warn you, I have a meeting I have to get to shortly after.

RON: There is a chance we might finish by (inaudible).

JASON: Let's crack on.

ROBERT: I will just duck out.

JASON: Were the Post Office or Fujitsu able to access transactions remotely? Now, we have taken this in two different ways. Either the remote control of what was going on at the branch to affect transactions that would appear in the subpostmasters' name or, in the alternative, not necessarily remotely but back at Fujitsu's base and having an impact on branch accounts --

IAN: Cloning the subpostmaster's ID and generating sort of transactions --

JASON: Less about the ID and more about the -- having some impact on the branch --

RON: (inaudible) I think under old Horizon, pre-Horizon --

IAN: No. What Gareth Jenkins told me was they had the ability to log onto a terminal at branch level, irrespective of old or new Horizon, and they would sometimes get the subpostmaster to log off, Fujitsu would then take control of that [overspeaking] remotely.

JASON: That's how (inaudible) every single help desk --

CHEVAUGHN: So the subpostmasters would be aware then because they would have to come out of the system.

IAN: Where it was a bit sort of a grey area was what happens overnight, when the postmasters isn't at the branch, but they left the machine on and I think they were required to leave the said machine on overnight for updating or so on --

RON: Or it was one of the assistants because the subpostmaster has the contractual legal responsibilities, but it wouldn't necessarily be the subpostmaster who would be the person who was told: can you leave the system on.

IAN: Yes. The default position was that the machines generally were left on. If they are left on, connected to the network, what Gareth Jenkins said to me was Fujitsu had the ability to remotely connect to those machines and control those machines.

CHEVAUGHN: And you saw those out of hours transactions?

IAN: That was a separate issue because connecting remotely to a machine opens up all sorts of issues. Quite separately, what I saw within the XML data, was transactions occurring outside of core hours. At this stage removed, I can't remember what user IDs were associated with that. The significant issues to my mind at the moment was the Post Office shuts at 5.30, 11 o'clock at night I'm seeing transactions going through.

JASON: So the possible scenarios there is, whilst the Post Office is shut, the postmaster or his assistant is putting through legitimate transactions.

RON: They deny that. They would say: I locked up, the building was off and I came back in and saw transactions had gone through while I was [overspeaking] and nobody was there.

IAN: No. What they would often see is that their opening balances were different from the closing balances. They would not necessarily at that stage be able to identify the transactions.

RON: There was one that did. But you are generally right, they would say: I closed Saturday lunch time, ran a balance snapshot, everything was in order. Opened it up again at 8.30 am on Monday morning and I have got a shortfall.

CHEVAUGHN: Did they report these ones or were they to you?

RON: They would report that saying something had happened --

IAN: Not necessarily. They would start investigating it, but often that investigation would (inaudible) say that [overspeaking].

JASON: Presumably the difference between opening balance and closing balance at branch level should be something we can get from the data? Do you think?

IAN: Something I tried to do was to reconcile day to day using just the XML data and I got pretty close. So in theory it is --

MALE SPEAKER 4: Did some of that XML data include periodic balances that you were reconciling --

IAN: Yes because the XML data incorporated the periodic balances.

JASON: Was there a running balance?

IAN: This is what I tried to do with the XML data. I opened it into an Excel spreadsheet and had an additional sort of column trying to track the net balance as a result of line-by-line transactions. I wouldn't say I achieved total success with that but I got fairly close.

RON: We know Ian, don't we, that where the system recovery was invoked and the system itself reversed a transaction that it couldn't complete, it did that in the identity -- with the identity of the person who initiated the transaction, even though they had not initiated the reversal?

IAN: Yes.

RON: The fact that that happened, meant that would have altered the branch balances after hours. But that wouldn't account for all of the entries that I think you --

IAN: No.

JASON: Right. Okay.

CHEVAUGHN: Now, surely, if Fujitsu were doing these things to carry out fixes without bothering the Post Office, if the subpostmaster phones on Monday morning and says: my opening balance is £6,000 different to what it was when I closed it.

IAN: They wouldn't use to do that. What they would tend to do in that scenario is produce other reports and try and investigate it themselves. And that --

CHEVAUGHN: The subpostmasters?

IAN: The subpostmasters. Their attitude towards the help desk was that it was hopeless. And that actually reporting something like that, which on the face of it sounds a perfectly sensible thing to do, in the context of the Post Office it was a complete waste of time.

RON: Worse than that, a lot of them were fearful. They said they knew if they raised their head about the

parapet, they stood a very high likelihood of getting a cash count and they had heard that that was the courier of death. So they were reluctant to call --

IAN: [overspeaking] they would tend to try and investigate it themselves and that would often go on for many days if not weeks. It was only when they were getting close to the end of a trading period that they would really start to panic.

RON: Also very, very few of them, I can only think of a handful, four, had thought through to think that there could be such a thing as a transaction executed that they hadn't executed. It just didn't occur to them. So they immediately suspected themselves as having made a mistake and that invoked the process Ian described.

CHEVAUGHN: I'm trying to think of a scenario where if Fujitsu are carrying out these activities and they are making a difference, if that is without Post Office knowledge, how would they investigate or what would they see?

RON: That was fundamental Chevaughn. What I was used to in business, in banking certainly, was, whenever an error occurred, even more importantly if you benefited from the error, you would dig into it and find the underlying cause in order to invoke the virtuous circle of finding the problem, fixing the problem, mending the processes and systems and training, making sure it didn't happen again, recovering the money. And that process takes you to a higher plane in terms of building more robust, error repellent systems. We were saying because of the infrequency, put it that way, of investigation and the fact that the postmasters didn't have investigative skill or ability, that virtuous circle was never started.

JASON: (inaudible) motivation to start that circle.

RON: Precisely. Because in any organisation, where an error causes losses, the organisation suffers from it, it funds that process. In this case there is no such reward for spending money on investigating if actually you don't need to suffer the loss.

CHEVAUGHN: I know we are coming onto transaction corrections, but it worries me if there is, on a Monday morning, a £6,000 discrepancy and on Tuesday you accidentally make £100 discrepancy --

RON: That's why we say reading a month's transaction is so much more difficult than reading a week's, because you then get compensating errors and what was a £6,000 shortfall is now £400 surplus and you think you are okay, and you can pocket the 400, but you can't, because then you get all services later, by which time it is too late to investigate.

JASON: What transaction data reporting functions are available to -- this is the Post Office.

IAN: The Post Office did some quite clever monitoring. (inaudible) reports or something.

RON: OCH. Overnight cash holding reports, for example.

IAN: Occasionally you would see signs of semi-brilliance from the Post Office because one of the -- I thought -- quite intelligent things they did was, presumably, write a programme that calculated the theoretical balance each night at every branch [overspeaking].

Let's assume, hypothetically, that transactions going through the branch follow a normal sort of pattern. A branch in Hampstead might have an average cash balance of say £25,000. A branch in deepest Somerset might have a cash balance of £5,000. What they would look for is the outliers that were not following the norm for either that individual branch or indeed that type or sort of branch. And the intelligence coming from the overnight cash holdings report would generator or would trigger audit visits, for example.

RON: They were quite good at spotting falsifications of cash balances, exaggerations of cash balances, because you would have a branch that would predominantly in a poor area be paying out and another one that's normally receiving in, and that was all quite cleverly put together.

JASON: Did the postmasters declare their cash holding on a daily basis?

RON: Yes.

IAN: I'm not sure. They had the facility to declare holding at any point in time because they had (inaudible).

RON: Well, the strict requirement was they did it monthly.

But I guess there were different procedures. That's the way it operated. But good practice was to --

JASON: It was the submission of that cash holding that triggered these processes.

RON: Yes.

IAN: But I think my point in fact was a wider one. Because the Post Office had this overview of the entirety of Horizon, they could in theory look at anything everywhere.

RON: Clive is right. The system, centrally Post Office would know minute by minute with Horizon on line what the cash balance was meant to be.

MALE SPEAKER 4: One of the reasons they needed to was for remittances. So they could look at the typical pattern of branches, some branches made a lot of cash, or they pay a lot of cash out -- by calculating what actually happened in that branch, you could revise your estimate of how much cash needed to be sent to it.
[overspeaking].

IAN: The Treasury [overspeaking] gone into, including foreign currency. At a corporate level there was a lot they could potentially do with the billions of cash that was sloshing around.

JASON: It is also the case that -- we have seen part of the agreement between Post Office and Fujitsu about the reports that have to arrive by 8am in the morning and gives all the names of the reports and what has to be reported and what time you have got to be there and all that.

RON: The key complaint wasn't whether the Post Office was getting reported to centrally, it was that the postmasters, there was one particular person who is quite central to the case, said: why can't I have a report generating facility in the branch, rather than having to look at a 8cm list, as long as a cricket pitch.

JASON: We have a question about reporting subpostmasters?

IAN: The next question, top of page 5. I think we have probably dealt with question 8.

JASON: Yes, we have.

RON: Our paragraph 13 in the report, limitations to the transactional audit trail, really goes through that quite thoroughly. I can say that because Ian wrote that bit.

CHEVAUGHN: Which paragraph sorry?

RON: Paragraph 13. I will give you this later, this cross-reference.

IAN: Anyway your question 9, what transaction data reporting function was available through the Horizon system to subpostmasters? We have touched on the 42 day, which was then extended to 60 days. I mean, apart from that, there wasn't a lot, is the short answer.

CHEVAUGHN: One of the things that you (inaudible) was receipts.

JASON: Yes, there is a certain type of transaction that is either marked not for subpostmaster retention or --

RON: Yeah, that was the giro pay out. I mention it in the report, where we say it only produced one piece of paper and that had to go to the customer, which is really bad if the customer is colluding with your assistant and says: when I come in and pay £100, can you credit me with 10 grand please? And the customer would get the piece of paper that said 10 grand had been paid in. There is no evidence of the customer's collusive fraud because he has not had any cross paying in slips saying that £10,000 in his own handwriting. The customer has walked away with a £10,000 deposit in his account and a slip of paper that says 10,000 and there's nothing in the branch that says that the actual deposit was only £100.

IAN: What we were told by some subpostmasters is that [overspeaking] they would keep a desk diary and they would write significant transactions into a hard copy diary because Horizon was so hopeless in terms of failing to provide them with --

RON: Then, if they were suspended, that diary was confiscated by the investigations team and they never saw it again. So that disadvantaged them and you covered that very well in the report Ian by saying that it was not very good at the best of times, but if they

were suspended, the one thing that they wanted was their notebook, their personal notebook, their own record, but that had been taken away from them and they never got it back.

CHEVAUGHN: There was also a discrepancy (inaudible).

JASON: Yes.

CHEVAUGHN: At one point we were aware of some discrepancy reports that then didn't exist. I have seen it in a document.

IAN: What often gave rise to a discrepancy being identified, when they were doing the daily reconciliations, for want of a better word, there is a point at which you have to enter the amount of cash on hand, but there was a report that was run which would tell you what your cash balance should be. And in practice what happened with some subpostmasters is that they would run the cash on hand report and again --

RON: Balance snapshot was the main one. [overspeaking].

IAN: [overspeaking] onto the system.

RON: What the balance snapshot said, that is right.

IAN: Actually it was one of the ways that the Post Office would detect false declarations because the theory was, even the best run branch is likely to have some minor discrepancies and if they always match to the pennies, that was the red flag.

RON: Interestingly, let's say the balance in my Post Office tonight should be £12,911. If it was £13,911 I was meant to enter that figure and then I would be entitled to keep the thousand pounds. Of course nobody did that. They would run the balance snapshot, it should be 12,911. So they would say let's keep to the figure of 12,911 and keep the £1,000. We may laugh but that choked off a critically important source of error detection. Because it meant that the Post Office only became aware of shortfalls and it was blind to surpluses. And that to my mind, in terms of control design, was extraordinarily significant. But I couldn't really ever convince the Post Office of that for some reason.

IAN: Just for completeness, to answer that question, on

request subpostmasters could ask for this more detailed reporting from Horizon, but as often as not it was turned down on grounds of cost.

JASON: And they are the ARQ --

RON: Yes. I think basically the audit team said we have only got 12 a month. We need 14. The last thing we are going to do is give it to Jo Bloggs that doesn't know what he is doing anyway, why should we give him that, so they didn't do it.

JASON: (inaudible) TC.

RON: Yes, I don't think I came across any cases where that request was fulfilled.

JASON: Right. Okay.

RON: In the event it has been fulfilled, such as in instances I'm not allowed to mention, then what was actually supplied was the distilled Excel spreadsheet stuff and very few of them had the nouse, only those who had come from a programme background or background like yourself who had retired and decided they would run a Post Office, people did that, they would say: I want the XML data. But of course that got nowhere. So very few of them recognised that what they were seeing was unfiltered data.

JASON: Number 10 is -- we covered that. 11, I think we covered that as well.

RON: We don't know, do we? The Post Office first of all said it couldn't be done. Then they said it can be done but it is subject to [overspeaking].

IAN: Are you talking about 10 or 11?

RON: I'm on 11. If they did, did Horizon (inaudible) commission controls. We were told, yes. It was extraordinarily rarely deployed and there were high security levels over who could deploy it and how that audit trail.... We never saw that. I don't question there were but --

JASON: Did you have that demonstration about how it is done, about how it is a secure terminal through layers of concrete, things like that? And it has only ever been used once to create a transaction?

RON: I think that was the tone of what we heard.

IAN: What would be very interesting would be to ask what were all these people doing in Fujitsu, including the 60 Post Office staff. The closest I got to understanding that was when I asked for all the email records and we got them. I saw the emails but I thought not the (inaudible) we asked for. But looking at that, it was clear that there was a lot of what I might call behind the scenes activity going on that was beginning to cause me concern. There was a lot of activity that was unexplained.

RON: You asked for 2008 and you got 2011. Then you eventually got some of --

CHEVAUGHN: The name (inaudible).

IAN: There was quite a lot of emails in the list, but I think they were encrypted and at one point we were told that the Post Office had lost the passwords.

RON: Then they withdrew -- because we had been offered unlimited access to that stuff under the previous general counsel. Then she left and then it tightened up considerably and they said, no, you are not going to have that anymore.

JASON: I also think (inaudible) the protocol says that (inaudible).

CHEVAUGHN: No. We are not in the schedule -- we are not --

FEMALE SPEAKER 2: I think there are two things being spoken of here. In the staff (inaudible). The basis for that is understandably searching emails (inaudible).

RON: Yes. We said we want to know the names of the people. We knew the name of somebody Rolf, who is the chap who met with the postmaster who said he had seen all this funny stuff going on --

IAN: That was only part of it. We were asking for emails trying to dig into that specific allegation but once we discovered there were 60 Post Office people in -- we were trying to work out what were they doing and we felt one of the best ways of actually, from a contemporaneous perspective, finding out what they were doing: well let us see what they were saying in emails. And we never got that.

FEMALE SPEAKER 2: (inaudible).

CHEVAUGHN: Yes.

ROBERT: (inaudible).

JASON: Okay, good, good.

IAN: 12, we don't know what the answer is.

JASON: I think we are going to simply ask the question. We have got enough documentation to support the process going on.

IAN: Yes. If it was used it could affect the branch accounting.

RON: The business model impact, credibility impact was massive. That's what's reflected in that internal memorandum that we quote quite extensively in the report, where they are saying: if this gets out the impact could be quite disastrous. Because it would clearly generate copycat claims and that would seriously undermine the profitability of our system.

JASON: So onto number 14.

IAN: 14 (a) there was a basic reporting function to compare stock and cash and it was regularly used by subpostmasters.

JASON: Does that show all of the transactions that --

IAN: No, it wasn't the transactions. It was more of a balance report showing that, according to Horizon, your cash balance is x, for example.

JASON: So if it says you have got three first-class stamps, you can't say: give me all transactions that included first class stamps?

IAN: I think that is a question for a subpostmaster rather than us.

JASON: It might be in the operating manual as well.

ROBERT: I think as you say this is a balance report. We have seen it.

JASON: Okay. Enable/require subpostmasters to decide how

to deal with dispute, accept or make good discrepancies.

IAN: It wasn't so much how to deal with it, it was the fact that, according to the system, there was a discrepancy. It was then down to the experience and judgment of the subpostmaster of how to deal with that and the option ranged from phoning the help desk to you will be accounting cash or stock.

RON: Also there was a very widespread perception, which was incorrect, that unless one closed off balanced and processed all the -- you couldn't open the following morning without being in breach of contract. You could actually because you could continue to operate in the month that was supposed to be closed. But there was a limit how long you could do that. Not many people know that. But then you get into this issue of could you invoke the settle centrally dispute that you are referring to and the answer is, yes. But it is limited.

(a) if you have already (inaudible) -- I think it was the third of net salary. So if you were on £21,000 a year, you could put 7,000 quid of stuff in there. But once you wrote 7,000 you couldn't put anything else in. Once you put something in (inaudible) you were effectively saying: I am making a contractual commitment to pay this if the dispute doesn't settle. Basically I'm putting this into my personal account, with you Post Office.

JASON: [overspeaking].

IAN: A number of subpostmasters told us they had a petty cash till and [overspeaking].

RON: That was correct practice.

IAN: And if it was £200 that would work, but if it was suddenly £5,000, it doesn't work.

RON: There was something else I'm trying to bring back to memory. There was something to do with -- there were three options. They could pay in in cash; pay a cheque in and clear that week. Settle centrally. It emerged, if I were to believe everybody who told me this and there were a lot, that some of them didn't even know they could do that. They didn't know there was a settle centrally function at all.

IAN: There was another option that had to be agreed by

their area manager or something like that.

RON: And you couldn't do that because it was 7 o'clock at night.

IAN: And you were putting your head above the parapet.

RON: The key issue was, if you had a shortfall larger than you could -- you were allowed to put in central settlement, you had to pay it in in cash that day. That's easy, or you had to pay in a cheque and you couldn't dodge that. You had to pay in a cheque that would clear immediately and that was an impossibility. That was the terrible dilemma that some of these people faced. Especially when they called the help desk. They said: don't worry, it will sort itself out. When, tonight? No, it might take three months. What am I supposed to do, I am supposed to pay this off tonight?

Frankly, that's what is the core of this case.

JASON: But that only came in with the advent of Horizon?

RON: No, it came in with the closing of the branch suspense accounts because obviously -- well I don't know, but (inaudible) imagination to realise that, since they opened the door to do that, it must also --

IAN: It was made worse when they changed from weekly to monthly. Because obviously the balance [overspeaking] were caught much earlier. One weekly accounting.

RON: So I think the branch suspense accounts, the impression I got, I haven't anything reliable to evidence it, was it just ballooned out of control and they said, stop that. The moment they did that, this whole situation started to get worse.

ROBERT: (inaudible).

RON: You got me. Do you want me to guess?

ROBERT: Give us a guess.

RON: I guess it was between 2012 and 2016, but I'm guessing. So reliability of about 30%. It is quite easy for us to detect that. I wouldn't do that in the witness box, don't worry.

JASON: (inaudible) reflect the consequences of raising

a dispute. We have talked through that. Does raising a dispute with the helpline cause a block to be placed on the value of the alleged shortfall?

IAN: I do not think it was the help desk. I think it was -- what we have just gone through -- how you deal with the shortfall, for example, settle centrally, make a false cash declaration and so on. I do not think the help desk --

RON: I have never heard that terminology used, so the answer would be no. The inference of your question is by putting a block on something, it was subject to investigation and there would be no punitive action taken in respect of it.

JASON: Yes. I mean [overspeaking]

RON: No, there was no such [overspeaking].

ROBERT: Many thanks that has been --

RON: Robert, lovely meeting you.

ROBERT: Thanks a lot.

RON: You don't want to take some sandwiches with you?
A large carrier bag.

(Pause).

JASON: Right. Okay. Is that recorded on the Horizon system as a debt due to the Post Office?

RON: Yes. The moment you enter something settled centrally is a debt to the Post Office, which is either disputed or not disputed, and it can either be paid off over a period of time through a deduction of salary, provided it doesn't exceed one-third of salary or you can pay it off next (inaudible).

JASON: This is something about whether anything changed at a particular point in time that enabled some subpostmasters to produce a cash account before 2005 and then a branch trading settlement after 2005.

RON: Pass.

IAN: (inaudible) we don't know.

JASON: Enabling subpostmasters to continue to trade if they did not complete the branch trading system.

RON: This is the "not many people knew that." They could but only by extending the trading period that was meant to have ended and that would trigger a warning bell or red flag at Post Office centrally. So they were reluctant to do that because that would bring down an air strike.

JASON: The last one, they are talking about transaction corrections and that process. What we know about transaction corrections or what I can adduce is that somebody back in Post Office does some sort of reconciliation -- a customer, whatever, puts a journal entry on POL SAP, presses a submit. The following morning when the till boots up, it drags this transaction --

RON: Strictly it should be approved by the subpostmaster.

IAN: They have to accept or reject --

RON: What I'm getting at is, as far as I can recall, there was no system check that checked that the identity of the person in the branch that accepted the transaction creation was the subpostmaster.

IAN: Well, that was more to do with the idea of log on. If you logged onto the system by default you could --

RON: The reason we raise that, Ian, is because there were one or two postmasters at several branches and some were known to be absent from the branch. You were allowed to do that and you would appoint the manager. The point we made was, look, if you issue a transaction correction of substantial size and you send it to the branch, and muggins accepts it, there is a manager or less in the branch, did you not think it would be a good idea to send an email to the actual postmasters saying --

JASON: Who is carrying the liability.

RON: That's what happened in one of the ATM cases where the correction -- I mentioned earlier the person was repaid 27,500 -- that was repaid in the form of TC, credit note, that was misprocessed by -- in fact it triggered a fraud -- by the manager. The postmaster didn't even know that after 13 months of fighting he had actually got his money back. He never saw the TC. So, clearly,

in designing the system, you would expect the system to say wouldn't it be a good idea if the postmaster gets note of everything material happening in the branch and it didn't do that. Again that's part of the (inaudible) story.

CHEVAUGHN: So there's also like a relative description, is there, this is a section for the banking transaction --

RON: Yes, this relates to Santander --

IAN: It refers to the originating transaction with a reference number and short description as to what the TC --

RON: And an invitation to challenge it.

JASON: Have you got any screen shots of that or printouts of that?

IAN: No, sorry. [overspeaking].

JASON: Might you have had any of those and you returned those?

IAN: We were told about them but I do not think --

RON: I saw some in the working papers. We saw thousands and thousands. The 35,000 pages that we returned, there was a lot more stuff that we saw in the work papers I think and on the POIRs and that sort of thing. I looked at the transaction corrections. The most frequent and largest TCs that we looked at related to ATMs.

JASON: And that is that the amount that the ATMs says it should have within it, doesn't match the amount --

RON: The postmaster said was in it.

JASON: Right. Okay.

RON: That's exactly it.

CHEVAUGHN: Were there any corrections that then had to be corrected?

RON: Yeah, because the invitation to challenge sometimes resulted in the TC being -- another TC being issued to cancel out the effect of the first TC.

IAN: We heard of some TCs that were written off.

RON: Yes.

JASON: That leads to more questions really, how many of the TCs that were issued.

RON: There are all sorts of statistical questions like for every hundred TCs were issued, how many were credits, how many were debits and what were the amounts of each? That is a good question and how many did you reverse? Did you reverse more debits than credits?

CHEVAUGHN: This is what we discussed with Robert last week but we didn't know if there were any specific document names or anything they might --

IAN: The Post Office had reports covering TCs.

RON: There was a lot of this investigative process that we did not complete because we went onto looking at lots and lots of individual cases. That took us away from some of (inaudible).

JASON: There is some TC material arriving this week, isn't there?

CHEVAUGHN: Yeah. About the number and extent of transactions issued, TCs issued in (inaudible).

RON: What we found with ATMs frequently was it would just yoyo, see-saw. A person would get a £20,000 debit TC and then next month they would get £30,000 credit and then a £10,000 debit one, and they were swinging all over the place and that was causing them immense difficulty in working out other errors that sat below those because the amount was so huge.

IAN: Yes.

RON: That things were being (inaudible) in plain sight.

MALE SPEAKER 4: Was that because of timing?

RON: Yes.

JASON:

MALE SPEAKER 4: -- examples being taken --

RON: This has to do with: do it at exactly 4.30 wasn't -- [overspeaking]. It was just not always achieved by people who were rushing around putting parcels together and also of course to do that you have to open the ATM, which meant you had to shut the branch. [overspeaking]. If you have got a queue of people going out the door -- which often they did -- and you said: do you mind all clearing off for 10 minutes, while I open the back of the ATM? Go on.

So they would put off opening the back of the ATM, by which time the money was taken out of it, and the report was going to say: that was the figure at 4.30 but you are doing it at 5.15, by which time the figure is different and that's what threw me.

JASON: Surely something as simple as that could have been corrected by modifying the actual process.

RON: That's a good idea. Why didn't I think of that? Okay. But again, see, the point fundamental is, again, if you go back to Tesco's or Waitrose, those people inside have got no responsibility for what's going on in that ATM. When that decision was taken to involve the subpostmasters in something extremely risky -- you are not talking about change, you are talking about £144,000 in that ATM -- that was a profoundly risky thing for some of these people to take on, way beyond their (inaudible).

IAN: And they didn't have much choice in the matter.

RON: They had no training. The only training they had got was from (inaudible) who told them about filling cassettes. (inaudible) were strictly under instruction to not train them how to deal with the entries into Horizon and they never got training on that.

IAN: It was worse than that because when ATMs were first introduced, there was a third party that dealt with the topping up of cash and everything else and --

RON: There were suspicions of step theft by some of those individuals.

IAN: Subsequent to that the Post Office said, no, we can't (inaudible) for the subpostmasters to do all the work and a number of them didn't want to do it.

RON: The Post Office itself quoted the numbers in the

report, I can't remember what page, we quote the number, it was massive. Prior to improving or streamlining the process for ATM handling -- sorry -- the handling of these output reports from the ATMs and input into Horizon, there was a massive -- Branch Focus reported on a massive amount -- number of errors of huge magnitude and they said: when you correct the process to the new process we are now describing, you will have cash shortages. They warned the branches about that. So it was clearly a recognition that the process that had been in place was not particularly error repellent; subject to a lot of mistakes that were of serious magnitude and then they put in the new process, which was better but it was not full proof.

JASON: It is very helpful from the complex perspective --

RON: You appreciate under every sentence of our report, every paragraph of our report, there is a mass of knowledge that is quite carefully worded and minimised because we were immersed in this for three years.

CHEVAUGHN: Please don't be offended if it is in the report, I have had that much stuff I have literally lost things. This reduced reboot clause. What is that?

RON: This was all about the recovery process. When the system clearly went down through a power failure or a telecoms failure, the Post Office's position was: no loss can be incurred unless the postmaster makes a mistake in carrying out the reboot process. Now, I can't remember exactly what they meant by the reduced reboot process, but it was obviously an attempt to simplify the reboot and recovery process. But Ian made the point earlier that the real issue was that following -- to use a subjective word here --

CHEVAUGHN: You can't see the screens.

RON: Not just that but it wasn't easy. When the system has gone down and you have to do this and do that, the screen is going to tell you this and then the screen is --

IAN: [overspeaking].

RON: Have you lost any giro transactions? And the person will say: I don't know. So they would say: yeah. They'd say: which transaction did you lose? They haven't a clue: let me say no and see what happens.

CHEVAUGHN: Do you think that this is to handle recoverable and non recoverable transactions within the recovery process?

RON: It is part of it. Yes. Because they did use that terminology of recoverable and non recoverable transactions. That's to do with internal processing.

IAN: It is also potentially triggering reconciliation issues because you might have had a bank payment --

RON: Which is not recoverable.

IAN: -- which has not been fully processed in Horizon.

RON: In other words, you can't do anything if it has gone down the pipework to the bank. So you can't recover that, you can't reverse it. So you have got to do something about the other side of it.

IAN: One of the system errors we have not touched on is pin pad problems. Again we both remember being told about problems with pin pads, which was sort of the hardware fault and, again, often the subpostmaster would be unaware as to exactly what had happened, whether transactions had been duplicated and so on.

RON: And it is a source of fraud because time and again, with the criminally minded postmasters, you can persuade the poor old lady at the counter, or old chap like me, who has just drawn down his pension and they say: Did I draw last week's pension? No. Rather, yes, you did, when they didn't. And there is no doubt that there was an opportunity for fraud at the counter against customers.

IAN: Yes.

RON: Actually what we were told was a number of evil minded postmasters found it quite easy to cover the shortfalls in the system because they would simply make the money off customers and that was particularly loathsome.

MALE SPEAKER 4: Surely that was being reconciled with the benefits payment system of pension --

RON: You can't. Literally what would happen is the customer would come in and draw £90 but be two weeks behind. So would simply say, "I can't remember whether I came and got the money last week." And they say,

"Yeah, you did, you are up to date." But, yes, you would think that would be picked up by the system --

MALE SPEAKER 4: (inaudible) pension in that week --

RON: What they were doing was putting it through twice.

IAN: There was some benefit vouchers that weren't being cancelled and I think the procedure was [overtalking] this is before POCA.

RON: Even after POCA some would say I have lost my card can I use [overspeaking] so they would invoke a backup process for that.

IAN: There was quite a big investigation into the recycling of, I don't know whether it was benefits, cheques or vouchers, because the process was that they were effectively not being cancelled at the time that they were being submitted, and they were being processed through multiple branches.

RON: Referring to pin pads, if a customer was withdrawing money, it is very easy to say: right, I want to withdraw £100. "Put your card through. I'm afraid that didn't go through, could you do it again." There is no doubt that some daft old people are targeted by some awful branch staff --

MALE SPEAKER 4: Making them take two transactions?

RON: Yes. "That one didn't go through dear, can you try again?"

IAN: Even on the screen I think one of the icons was for number of [overspeaking] say 00 and again that would give rise to [overspeaking].

RON: I just said part of the rebalancing you would ordinarily build in would be to detect a flag to get rid of the transaction coming in and that isn't in place. So that is again part of a policy that you would have in a --

JASON: We saw that with fast cash when we were in the local office. The fact that you could easily hand £100 to somebody. If you don't press fast cash complete, (inaudible) you process it, but then Horizon tells you it is 200. So you (inaudible) 200. You give them 200. So you accidentally give out £300.

RON: With something as inevitable with the complexity of that nature, we like to say how many transaction types can you carry out in a typical high street bank? It is not 170. You can't get a fishing licence in a high street bank.

IAN: I have tried to do that.

CHEVAUGHN: Do you know, the actual transaction print that the postmaster would print. So if you have a basket, these baskets, [overspeaking] yeah. So if I buy three items, those -- the numbers allocated against that item, they should all be sequential, shouldn't they? So it should be my branch ID log on and then it should have its own transaction ID and that should be 1, 2, 3?

RON: Yes.

CHEVAUGHN: Then if customer 2 comes in and they're served by a different person, it would be under the second person's log on and theirs should also be sequential. So then the person who goes to that second till person, their basket should effectively follow on from that previous basket, shouldn't it?

JASON: Yes.

RON: They are sequential by stock unit.

MALE SPEAKER 4: So if you are operating a till, every transaction you carry out through your machine should be recorded with a unique sequence number, which is one higher than the previous one on your PC, and the person next to you is in a separate series.

JASON: I'm not sure though. They call it a master slate set up?

RON: This is where you get what is called individual or separate stock unit balancing. Smart people would from the get go set up individual stock unit balancing. So that each till can be checked. So if you have got a badden, you can identify straightaway which person has come out short every month.

Most branches were not set up that way and it was rarely -- sometimes it was recommended that they did that -- but it does bring extra complications, but sure as hell brings lots of advantages. We thought it should be almost standard practice to always do that.

JASON: So that -- we saw that when we looked at some of the data. But we saw missing what appeared to be missing sequence numbers, but then you see it far later on and it is because that missing number was actually part of the transaction of another (inaudible).

IAN: I seem to remember when I was going through the XML data, there were some sequences that actually turned out to be complete, but they weren't in sequence.

JASON: That is right, it is because one transaction might have been done very quickly on one counter and on another counter it might have been added to the transaction stack a fraction of a second afterwards, but that whole basket might not have been completed [overspeaking] and therefore it was much later down --

CHEVAUGHN: But there would still be no missing numbers.

JASON: I think that is right.

MALE SPEAKER 4: When the numbers are assigned, the basket may be completed five or six minutes later, and that's why, when the other transactions have happened in between, they appear in that sequence and the next one after this would be a long way down.

CHEVAUGHN: When it is saying there is a power failure and that till goes into recovery and that points to those transaction IDs; that should match what exactly that transaction was. So if I have bought a stamp or withdrawn £200 and that has a sequence number 1, then my recovery ticket should say this is relative to transaction 1.

MALE SPEAKER 4: You were processing transaction 1.

CHEVAUGHN: It won't increment as its own unique number.

MALE SPEAKER 4: If it did there would be a fault in the recovery process.

RON: Later on you ask about how things operated prior to Horizon. A number -- some people I spoke to, third, fourth generation of running a Post Office, 30/35 years running branches -- many of whom spoke highly of the Post Office and of Horizon. They said it was difficult in the old days, but one thing we could do was we had all these envelopes with all the tickets in. So if we had a shortfall, we had everything in our control and we

could go back and look through them. We can't do that anymore. That's really what -- another core issue. That's just (inaudible) technology --

RON: It is. But when you hear somebody, a lady who is third generation, running the Post Office for 30 years, the first question I always ask them is: prior to Horizon, what is the largest shortfall you have ever had and what was the typical shortfall? It was 30 quid. Then you say: well what happened? You have got a £20,000 shortfall. And then they would say, after running the Post Office for 90 years as a family -- you would say: right, so why was it so difficult to find it? And that's when they say the system was working well, it was fantastic, it was really good, and this is a person, an old lady sometimes. But when it comes to investigating things that have gone wrong, "I couldn't do it".

MALE SPEAKER 4: I want to make sure I have clarified something because I thought I missed a point. I think it was you, Ian, who said we missed pin pads (inaudible). And when we discussed the issue with pin pads, it wasn't the hardware problem I heard, it was fraud, getting the old lady to enter her pin in twice. That isn't a hardware problem.

RON: Correct.

IAN: I do recall being told that there were hardware problems with pin pads.

RON: There were. Because there was a swap out process. So the pin pad --

MALE SPEAKER 4: I see.

RON: It wouldn't work.

MALE SPEAKER 4: You type in your pin correctly [overspeaking].

RON: It wouldn't register so they would do what's called a swap out. They were outdated, no longer manufactured. Fujitsu would send a new one. People said it was filthy when it came out; "I didn't want to touch it".

IAN: This is a general criticism of the hardware. It was recycled, it was old, it was unreliable.

RON: Some people would say: we had three sent out before I got one of them to work.

IAN: Even the hard drive, I think there was no -- they would often find sort of five year old hard drives in the terminals. Surprise, surprise, it didn't work.

JASON: Even now the current terminals are still Windows NTL version 351.

RON: They were using XP for a long time?

IAN: No. NT.

RON: New technology.

JASON: That's 1995. It is quite scary. [overspeaking].

IAN: No anti-virus.

RON: I can remember (inaudible) and 360. [overspeaking].

JASON: Do you want to take us through the other --

MALE SPEAKER 4: I checked with Robert about these. To do these -- are you thinking of question 3, Jason? Particular --

CHEVAUGHN: Yes.

JASON: Yes.

MALE SPEAKER 4: I am sure everyone can see from this the kind of things that Rob was hoping to get at. We covered quite a few of them. To actually try and go through each of these thoroughly will probably take a bit of time, so I just checked with Rob before he left if there were any particular ones he had to call out and the answer was, no. So unless there are -- looking at that list prompts either of you to --

RON: Again, coming back to what Chevaughn said about this reduced reboot clause that you mentioned here. I can't remember what exactly the reduced reboot process was. I can remember the recovery process. But I can't remember what the reduced reboot process was.

MALE SPEAKER 4: Is that how it is cited in schedule 3 (inaudible).

CHEVAUGHN: That's taken literally from the protocol that we are allowed to discuss. So that is from the legal document.

JASON: It must be (inaudible).

RON: It rings a bell.

MALE SPEAKER 4: I think your guess Ron is probably right, that it was a simplified --

RON: Improved --

MALE SPEAKER 4: On question 3, just if you wouldn't mind casting your eyes over those and see if that prompts any other important comments.

RON: I'm perfectly happy to give up a copy of this. What I have done is cross referred to the report. For example, investigate any discrepancies --

IAN: I am not sure we should. I think we need to maintain (inaudible) not for any adverse or (inaudible) concern, but you have got your job to do. We are appearing as a witness of fact. We will probably (inaudible) witness statements at some point.

RON: Actually it is not complicated to do. I simply went through our report. By the way, nobody has mentioned the Part 1 report. Some of your questions relate to right at the beginning here, where you say the system architecture, the insulation, Horizon online. The whole purpose of the Part 1 report was to say how things are meant to happen. Also sort of commonly account of errors, things you would expect to see. The Part 2 report which got much more attention because it is in the public domain is more focused on what we found, as opposed to statements of what Post Office said was meant to happen.

IAN: There is really the three reports are the --

RON: Interim.

IAN: Yes, and actually revisiting it, our so-called interim report, I think, is one of the more interesting sort of reports because we were focusing on a small number of very specific issues and we go into quite a lot of detail and that was when we first learnt about sort of programme errors.

JASON: What did she say we can't have?

IAN: The only reference [overspeaking].

RON: While I was on the train I cross-referenced --

JASON: Can't we just go down the list, and if you don't want to hand it over, just shout out the references --

RON: Just take a photograph of it.

IAN: There isn't anything else on it?

RON: No.

MALE SPEAKER 4: There is no opinion, no other cases --

RON: Have a look. It is rather untidy because I did it while the train was bouncing around.

JASON: It is only because after you said I could have it, I stopped writing down --

MALE SPEAKER 4: So did I.

RON: It is simply and no more than me saying --

CHEVAUGHN: Sorry, Ron, how about you give it to me and I just literally tidy it up.

RON: Yes, because you might need to check them. It will say [overspeaking].

IAN: I'm just nervous that if it goes into quite a lot of detail it is more than just paragraphs and references. I don't want us to be criticised at some point for influencing you or telling you what to do.

RON: Fair enough.

CHEVAUGHN: I think the best way is if I --

RON: It is commonsense. I only got this because of chairing a meeting the last couple of days, so as I looked down there I thought we have covered that and that as well. I thought it would be nice to know which paragraph addresses the point you raise.

MALE SPEAKER 4: We will get a sanitised version of that.

CHEVAUGHN: Literally --

MALE SPEAKER 4: If anything you feel is dodgy --

RON: Although we looked at 19 thematic issues in the original master spreadsheet, in the columns across, we only I think put paragraph headings in the Part 2 report for about eight of them.

IAN: No, I think everything was marked across.

RON: I know one wasn't and that was the assertions that there had been skullduggery in transfer of branches, for example. That was under the master spreadsheet. We never put anything in the report about that.

IAN: That's in the unevidenced assertions made by people that had been quite -- that's in the list of documents that has now been disclosed.

RON: Yes. Ian prepared a very thorough, very nicely indexed in section summary of the documents that were returned. We had a case reference number for every case and within that all the documents relating to each case. So, that was the structure of the report --

IAN: One of the things we have been unable to do, and I know you and I are going to discuss this, when I handed over the 34,000 documents or whatever it was to the Post Office, the detailed schedules and (inaudible) documents; the document listing disclosable to the documents was only around 30,000. Because of the way that that was produced, which was from the (inaudible) presumably, it doesn't match the formatting and description of the original sort of file list that I produced. Therefore, we haven't been able to cross-reference the (inaudible), which, as an ex-auditor or as an auditor, I just felt uncomfortable about. I would prefer to be able to reconcile the two lists and we haven't been able to do that at the moment.

RON: Yes.

JASON: I'm not sure there is a great deal we can do about that.

RON: One thing that I have suggested is, if the original documents were handed back to us, we probably could do that, but we can't do it just from the list of documents.

JASON: Yeah, because some of the names are meaningless --

IAN: Yes truncated and everything else.

CHEVAUGHN: (inaudible).

JASON: In a sense, at the moment, they are Post Office documents, aren't they?

CHEVAUGHN: Yes, Post Office's documents identified in the Post Office (inaudible) and as per our disclosure obligations to each other. But I am sure there are some things we can do to --

JASON: (inaudible).

CHEVAUGHN: Yes.

IAN: At the moment it is about 4,000 documents missing and we don't know which ones they are, which is not explained by the unreadable document list.

RON: Some of those unreadable documents are documents which were encrypted with a password. I do not think there were any instances where we were unable to read a document --

IAN: Every encrypted document we were given by the Post Office we were able to decrypt.

CHEVAUGHN: I think this is probably a lawyer to lawyer conversation about to what extent we can recover those documents and the (inaudible) document.

IAN: I'm just mentioning there is a discrepancy and we don't know what that is at the moment.

RON: Good. All right.

JASON: That has been a reproductive and interesting --

RON: Thank you. You over did it on the catering. [overspeaking]. I enjoyed meeting you all. [overspeaking]. (Interference).