WOMBLE BOND DICKINSON

RESPONSE TO RICHARD ROLL (TO BE TURNED INTO A STATEMENT BY STEVE PARKER)

1. References to paragraph numbers are to paragraphs of Mr Roll' statement.

1 2. I worked with Mr Roll while he was employed by Fujitsu in the Software Support Centre (SSC).
2 Although I did not have the formal title, I acted as team leader.

3. I found Mr Roll to be a conscientious worker and provided him with a reference [PS1] for a position that he applied for after leaving Fujitsu. As described below, he was not what I would describe as a
3 technical person and [SH3] he was mainly tasked with undertaking standard work arounds: e.g. Advising a PM to reboot when a counter was non-polling (not communicating with the centre), changing an outlets end of day state to ensure harvesting takes place, changing outlet configuration to facilitate change in number of counters.

   [PLEASE PROVIDE SOME EXAMPLES]. [PS2]

4. As Mr Roll was employed between 2001 and 2004 [PS4] his references to Horizon are to the original Horizon system (sometimes referred to as Legacy Horizon) as opposed to Horizon Online/HNG- X. When deal [GJ5] with matters in this statement I am describing the position between 2001 and 2004 unless otherwise stated.

5. [I have reviewed paragraphs [xx] [GJ6] of the witness statement provided by my colleague Torstein Godeseth which describe the core audit process in Legacy Horizon and I confirm that they are accurate to the best of my knowledge and belief.] **[TBC]**

Structure of Fujitsu's support teams for the Post Office Account [GJ7]

4 6. There were four lines of support for Horizon while Mr Roll was employed by Fujitsu and this is still the case in the current Horizon support structure, albeit names have changed and some responsibilities have moved around teams. A multi-level support model is common within the industry, as you move up through the levels of support the skillset required changes as does the cost of the staff providing the service. To provide efficient support your objective is for an incident to be resolved by the earliest level possible. The following points define the names, responsibilities and qualities of the Horizon support lines at the time to the best of my recollection. There is often overlap of skills between adjacent lines of support. While a team may be responsible for a particular level of support, staff within that team often have skills which allow them to perform a role outside the team's level. **[is this still the position?]** [GJ8]

   [**FJ - please can we flesh out the descriptions of the four levels of support? How many people are in each group?** [PS9] **Do they follows stated processes to ensure quality and consistency of delivery? Is the setup industry standard?**]

5 6.1 1st line: the Horizon system utilised a joint 1st line helpdesk as the first point of contact for issues.

6 6.1.1 The National Business Support Centre (NBSC) being a Post Office staffed helpdesk tasked with resolving business issues.

7, 8, 9 6.1.2 The Horizon Service Desk (HSD), a Fujitsu staffed help desk a helpdesk that
10, 11 branches may contact with issues relating to the Horizon application or the hardware
12 provided in branch by Fujitsu to run the Horizon application. The helpdesk dealtals [PS11]
13, 14, 15 with straightforward issues such as password issuesresets, and hardware replacement and engineer scheduling. The 1st line helpdesk refers other issues to the 2nd line
16, 17 support function. [PS12] NOTE: Names have changed over the years, HSH (Horizon System Helpdesk) and HIT (Horizon incident team) have also been used but the combined functions remained the same as HSD described aboveteam;

18 6.1.3 Communications Management Team (CMT). A 1st line team specifically focused on communication incidents.

Page 1 Comments

PS1 "personal reference". FJ do not allow staff to produce references on behalf of the company.
Parker, Steve, 16/10/2018 02:54 PM

PS2 Change of wording: As described below, he did not undertake a lot of detailed diagnosis of new issues. His skills were mainly in the accurate application of known work rounds to configuration and storage issues resulting from routine outlet change activities (reducing / increasing numbers of counter at outlet …..).
Parker, Steve, 16/10/2018 02:55 PM

SH3 In order to justify the conclusion that Roll was not technical (which is important) we need to be specific about what he did, where this fitted in to the overall team and why others were far more engaged in technical work than him. Are we trying to make any further point here i.e. that as a result of his role he would not have understood aspects on which he is giving evidence?
Simon Henderson, 15/10/2018 09:39 AM

PS4 Analysis of his incident updates show that he was working in the SSC from just before March 2001 to Sept 2004. I say "just before" because prior to answering incidents himself he would have been shadowing an experienced diagnostician but his name would not have been applied to the work being completed.
Parker, Steve, 16/10/2018 02:59 PM

GJ5 Missing "I".
Gareth Jenkins, 15/10/2018 04:28 PM

GJ6 tbs
Gareth Jenkins, 15/10/2018 04:29 PM

GJ7 Probably sensible to also refer to POL's NBSC and how that fitted in with Fujitsu's HSD

Covered at point 13 below?
Gareth Jenkins, 15/10/2018 04:30 PM

GJ8 Presumably it is?
Gareth Jenkins, 15/10/2018 04:29 PM

PS9 I do not have numbers for staff in SSC 2001 – 2004. Best I can do is end 2009 when there were 25 SSC staff. An estimate of 25-30 is reasonable.

1st line FJ was around 80-90. We don't have people (Sandie Bothick, one of the "longest servers" I know on the helpdesk, only joined in 2009) who can give better figures.

NBSC: No idea. Post Office may know.
Parker, Steve, 17/10/2018 07:50 AM

Page 1 Comments (Continued)

GJ10   With Riposte there was no capability of password resets. There was a one-shot password capability for "global" accounts which allowed a SPMR to log on with the privilege to allow them to reset a password locally.

      Was this HSD or NBSC?
Gareth Jenkins, 15/10/2018 04:31 PM

PS11   HSD
Parker, Steve, 17/10/2018 12:01 PM

PS12   Deliberate use of "function" not team. The second line function was spread over HSD, SMC and SSC (Software Support Centre). SSC also fulfil a third line function.
Parker, Steve, 16/10/2018 03:48 PM

19   6.1.4   1st line support was also responsible for monitoring the live estate and taking corrective actions defined in knowledge documents, based on the content or frequency of those events. This role was fulfilled by two units:

20   System Management Centre (SMC): Data centre events

21   Counter Eventing Team (CET): Post Office counter events

1) 2nd line: search knowledge articles and apply simple, well-defined work-arounds (often on the phone) such as guiding branch staff to return to the Horizon home screen if they get stuck in part of the system. There was no single 2nd line support team for Horizon. 2nd line functions were

22   fulfilled by 1st line or 3rd line teams. 2nd line support of the Horizon application was executed by senior members of the HSD, SMC and junior members of the SSC. [someone mentioned monitoring systems on our call - can you expand on that please?];

23   6.2 3rd line: 3rd line support staff apply analytical skills to the symptoms and evidence gathered by the 1st and 2nd line functions and undertakes in-depth investigation into incidents. They have detailed knowledge of the application based on documentation and source code inspection. 3rd line staff design, test and document work rounds for previous levels of support. They undertake complex (which may require the generation of special tooling) configuration and data fixes. Design, write and document new support tools. Undertake source code examination, complex diagnosis and documentation (including method to recreate fault) of new application problems before sending them to the 4th line support group for root cause software fix; and

write the knowledge articles used by the 2nd line support team, carry out fixes in relation to configuration type issues (as opposed to software fixes, an example being where the system crashes while [when?] and the branch required assistance to unlock it) and examine some code [for what purpose?]; and

24, 25, 26   6.3 4th line: system development of and software fixes. Have intimate knowledge of narrow areas of the system and are ultimately responsible for the production of permanent fixes to repair the root cause of an incident or problem in the live application. 4th line support staff have knowledge of one of more computer languages which they utilise to amend source code to fix problem in the live application code. There is often overlap between 4th line and Developers, who add new features into the application. [can we describe the qualifications required to be a member of 4th line and their calibre?].

26   7.   The 3rd line support team is only ever engaged when there has been a problem that all previous
27   support functions (1st line, 2nd line) were unable to resolve. Where the 1st line helpdesk might receive 13000-14000 calls per month from Post Masters the majority (e.g. 95%) will be answered by that helpdesk. Input to the SSC was approx. 1000 calls per month. Output from SSC to 4th
28   line, approx 20 per month. NOTE: [Insert section re metrics around various lines of support. 1st line – 90-95% of issues; 5-10% to 2nd line and less to 3rd line. Metric = 3% of input to 3rd line should go to 4th line (development). A mature system now, but still worth saying that you have to bear this thing in mind. Need figures from Sandy Borthwick (HSD days). PN/DI to chase up.]

Mr Roll's role

29   8.   Mr Roll was a member of the Software Support Centre (**SSC**) team which is described as the 3rd line support group. Functionally the SSC provided both 2nd and 3rd line support for the Horizon
30   application (which primarily provides the 3rd line support (see previous comments, there can be
31   some overlap between the four lines of support) and SSC does provide some 2nd line support).

9.   As with any mix of people, there are various levels of talent within SSC. Mr Roll was primary utilised in Operational Business Change (OBC), which involved supporting the engineers who were opening and closing branches and also increasing and decreasing the number of counters
32, 33   in branches and correcting the application environment after engineers replaceding failed counter hardware. As part of that role he may have spoken to Postmasters from time to time. **[Can we describe the sorts of things he would not have routinely seen as part of his role?**

Page 2 Comments

GJ13 This was probably me. SMC should monitor unusual events from all Live systems (including branches) as they went through the event management system and raise calls in unexpected events (or as defined by KELs)
Gareth Jenkins, 15/10/2018 04:33 PM

GJ14 4th line was normally the original development team who would do this alongside developing new code.
Gareth Jenkins, 15/10/2018 04:35 PM

PS15 Still not accurate, my recollection. Sandie Bothick has provided HSD stats from Dec 2008 - Jan 2009 which support the 13000-14000 figure BUT

a) this does not include the NBSC (POL)

b) By Jan 2009 Horizon was mature and HNG-X was being developed (introduced 2010)

Person who can drag out the SSC stats is on leave. Need to either tie down these figures from the incident system OR use current figures and explain that they only indicative as the current system is mature.
Parker, Steve, 17/10/2018 10:03 AM

SH16 Worth making the point somewhere that there is a degree of overlap between the various lines of support i.e. not clear cut distinctions
Simon Henderson, 15/10/2018 10:04 AM

Is there a possibility that his witness statement covers things which he would not have had first-hand knowledge of? If so, please provide examples.] ^PS17^

10.   Mr Roll was not involved in the provision of 4th line support. Some members of the 3rd line support group (but not Mr Roll) identify the need for software fixes and pass this on to the 4th line team for a code fix to be written. Such a code fix would not be written by anyone in the 3rd line team.

Branch discrepancies

11.   Mr Roll states that "*software issues*" which "*could, and did, cause financial discrepancies at branch level, including "shortfalls" being incorrectly shown on the Horizon system*" were "*routinely*" encountered (paragraph 10). It is true to say that as with any system, software issues in Horizon may cause the illusion of a discrepancy in a branch's accounts from time to time. However, it does not happen "*routinely*". [**can we give an anecdotal estimate of how regularly such issues arise?**] Further, in the vast majority of cases such an occurrence would cause a receipts and payments mismatch that would be flagged [**by who?**] and investigated [**by who?**]. [**Why most bugs? What type of bug would not cause a receipts and payments mismatch? How would they be identified?**]

12.   **[Explain KELs and Peaks/how errors are identified and spotted? Note GJ's comment that it is "quite difficult" to check how many issues caused discrepancies in Old Horizon, but FJ is "tracking things better in new Horizon" (e.g. the three known bugs)]**

13.   Post Office operates its own 1st line helpline for branches called the National Business Support Centre (**NBSC**). If a branch requires assistance to attempt to determine the cause of a discrepancy they may contact NBSC. However, Horizon records the data that is entered into it by branch staff and that may not reflect what actually happened in the branch. For example, a user may enter a deposit of £100 into a customer's bank account on Horizon but rather than taking £100 from the customer, they may make a mistake and give the customer £100 as if it had been a withdrawal. Therefore, NBSC could not always help branches to identify the cause of a discrepancy and they would sometimes ask SSC to assist. One of the reasons for this is that SSC has access to transaction data whereas the NBSC does not. Mr Roll' statement that "*[i]f an error was referred to us then it was extremely unlikely to be due to a mistake made by a postmaster*" is simply not correct. [~~**Can we say roughly what proportion of issues that made their way through to SCC between 2001 and 2004 would have been due to software issues and how many were presumed to be human error because no other cause could be found?**~~] ^PS20^

14.   Mr Roll suggests that he would investigate financial discrepancies that had arisen in branches by "*work[ing] sequentially through all transactions over the relevant period, and also work[ing] through thousands of lines of computer coding*" (paragraph 7). To the best of my recollection Mr Roll would not have worked through thousands of lines of computer coding to investigate a discrepancy in a branch. While SSC has access to Visual Basic (VB) code [~~**what is this code and what other types of code exist that SSC did not have access to?**~~], it was rarely used [~~**what purpose was it used for? Can we explain why RR would not have needed to look at it?**~~]. Mr Roll would follow work around processes designed by other people and was never a detail person [which would not require him to review VB code - ~~**is this correct?**~~].

15.   Mr Roll states that "*[s]oftware programs were written by us to strip-out irrelevant data, to enable us to more easily locate the error.*" I am aware of two ~~programmes~~ support tools (AKA software programs) that were written while Mr Roll was employed by Fujitsu:-

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15.1   the Smiley support tool ~~program~~ written by my colleague John Simpkins. This tool ~~which~~ amalgamates information from various sources (e.g. databases) into a single view pertinent to a particular support task and provides a unified interface to run various tools to achieve a single support outcome [~~**describe what it did**~~]; and

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37, 38

15.2   the ~~[insert name]~~ progra~~mmme~~ (Can't remember the name) written by my colleague Richard Coleman to extract messages from the correspondence server to local text files for examination.

39, 40, 41
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Page 3 Comments

PS17   His statement suggests that he undertook detailed analysis and code examination. Not correct, if he was involved in this way once I would be surprised. Yes, that is one of the expectations of a 3rd line function, yes some of his colleagues would be doing this work, it just wasn't Richard doing it.

Best way to dispute this is by analysis of the incidents Richard answered. In progress.
Parker, Steve, 17/10/2018 02:14 PM

GJ18   By the branch system as part of the balancing process (and also generate alerts that would be picked up by SMC)
Gareth Jenkins, 15/10/2018 04:37 PM

GJ19   Initially by the branch, but there wasn't much they could do – and the SMC should then raise a call and pass it to SSC to investigate it properly.
Gareth Jenkins, 15/10/2018 04:38 PM

PS20   We should be able to get this data from the incident management system (Peak). Analysis would have to be driven by the code (final response code) allocated by the person who finalised the incident, which is subjective. Within these constraints, yes possible.
Parker, Steve, 17/10/2018 03:52 PM

GJ21   The counter code was written in VB
Gareth Jenkins, 15/10/2018 04:40 PM

GJ22   Data Centre code would be in other languages – primarily C and Pro SQL and I assume SSC had access to all of this if required. However it was primarily 4th line that looked at code fixes.
Gareth Jenkins, 15/10/2018 04:41 PM

PS23   Yes, SSC have access to all source code
Parker, Steve, 17/10/2018 03:47 PM

PS24   Source code access used to confirm exactly how the application would process a given input and what the outputs would be. Used when investigating specific issues and general education on how the system works.

RR was not working at a level where this would be required. The majority of his work was the application of known work rounds / configuration changes.
Parker, Steve, 17/10/2018 03:48 PM

PS25   Yes.
Parker, Steve, 17/10/2018 03:51 PM

42   A predecessor to Smiley whose functions were eventually subsumed into the Smiley support tool.

16.   [**What errors is Mr Roll talking about in para. 7 of his statement and how did these programmes help to spot them?**]^{PS26}

17.   I do not accept that SSC "*regularly*" identified issues with the computer coding. As with any application, there were some coding errors in Horizon. A lot of the stuff we saw was [misuse of the system, actions to ensure that dataset system was using was complete][**please expand on this**].

18.   Mr Roll states that if SSC was "*unable to find the cause of the discrepancy then this was reported up the chain and it was assumed that the postmaster was to blame*" (paragraph 10).

43   That is not my experience: It is a simple truth of support that the majority of issues reported in a system are attributable to user action or user misunderstanding of system functionality. Hence, anybody working in a support environment analysing a new issue would examine the possibilities of user error as a first hypothesis but any final conclusion is only generated based on the

44   evidence. Where the evidence does not support a conclusion the SSC feeds the existent factual data back to Post Office and might say something along the lines of "*all indications are that the

45, 46, 47   branch has made a mistake*" if there is no other explanation, but SSC neither does not attributes

48   "*blame*" or agrees the final conclusion with the Post Master. .

SSC between 2001 - 2004

19.   I agree with Mr Roll's recollection that there were around 30 individuals working on the 6th floor in Bracknell at any one time during this period. [**How many were part of SSC? How is the 30 split?**]^{PS27} However I strongly disagree that much of the work being carried out could be described "*as "fire fighting" coding problems in the Horizon system*." There would be times when SSC would be firefighting when, for example, a data centre went down. However, as described

49   above, SSC would primarily provide 3rd line support including [writing the knowledge articles used by the 2nd line support team, carrying out fixes in relation to configuration type issues (as

50   opposed to software configuration fixes, an example being where the system crashes while

51, 52   [**when?**] balancing a stock unit and the branch required assistance to unlock the stock unitit) and examining some code.

20.   [**Can we give some anecdotal evidence as to the proportion of software issues that could create the illusion of a branch discrepancy?**]^{PS28}

21.   There were Service Level Agreements for issues such as stuck transactions (Fujitsu had 10 days to retrieve transactions that had got stuck in a counter). I do not understand what Mr Rolls means when he says that "*any discrepancy in the post office accounts had to be resolved speedily*"^{PS29} (paragraph 12). [**Is this correct or do you know what he means?**]

22.   While it is correct that there was a limited number of opportunities to release software updates and it could be six weeks before a fix could be released, but in the vast majority of cases it did

53   not take six weeks to do this. I do not understand what Mr Rolls means when he suggests that a bug could reappear several weeks after a coding fix had been released due to software issues (paragraph 14), although I am aware of cases where a fix regressed [**how many times has this happened?**].

23.   [**What proportion of issues are: (1) software; (2) hardware?**]^{PS30}

Remote access

24.   Mr Roll claims that "*[d]uring the course of resolving the software issues, we would frequently access a Post Office counter IT system remotely*" (paragraph 15). By remotely I assume that Mr Roll means accessing Post Office counter IT systems while not in a branch.

25.   The first point to note here is that a level of such access was required in Legacy Horizon

54   because it was a distributed system. The counter hard disk was used to store application

Page 4 Comments

PS26 Need to break down the para:

He is referring to the investigation of discrepancies by the SSC. A number of points to be made here:

1) Discrepancies, general. Discrepancies impact all retail systems, rarely will the contents of the till match up to the entries made onto them by the person serving.

2) Discrepancies, value £5000. Would be unusual in a system where your single item cost is low, e.g. packet of Polo's 40p. In a system where you are also dealing with high value items (e.g. commercial volumes of tax disks), £5000 would not be unusual.

3) Discrepancies are normally a business issue, not a software issue, and hence the NBSC would deal with them not 3rd line support.

4) In a small number of cases the NBSC would be unable to resolve a discrepancy with the Post Master. That could result in a "well I can't find the problem so it must be software" attitude resulting in the incident coming to the SSC. The SSC generally had better access to the data and support tools than the NBSC (hence "Software programs were written by us to strip out irrelevant data") to examine the sequence / value of transactions made in a branch. The result of our investigation was generally an explanation of which legitimate transactions, made by the Post Master (sometimes in error) caused the discrepancy.

5) In very rare circumstances a discrepancy could be caused by a software issue. In this case it might be necessary to "work through thousands of lines of computer coding", however this would be a 4th line function not 3rd line.

6) When the root cause is identified the support teams would be able to identify the outlets impacted and advise on a corrective action or even make that corrective action in co-operation with the Post Master.
Parker, Steve, 17/10/2018 02:34 PM

PS27 25-30 is a reasonable estimate of SSC staff during Richard's employment.
Parker, Steve, 17/10/2018 12:31 PM

PS28 The system carries out self consistency checks. Failure of these checks results in a report of a "receipts and payments mismatch" and could create the illusion of a discrepancy. Results in a support follow up and reconciliation of issue. Spreadsheet available to document.
Parker, Steve, 17/10/2018 03:16 PM

PS29 There is a process run by the Management Support Unit (MSU) which involves that examination of various system reporting and may result in BIMS (Business Incident Management Service) entries that go to Post Office. An incident may also be raised by MSU with the SSC to provide support to the MSU in resolution of the BIMS. These subject to strict SLAs.

Page 4 Comments (Continued)

PS29+

There are no SLAs associated with general incidents raised via the Post Master / Helpdesk support route.

I think RR is confusing the two incident streams.
Parker, Steve, 17/10/2018 03:23 PM

PS30   I can only do this for the incident management system used by SSC (Peak). Information from the HSD systems (where the majority of hardware issues were closed) is not available to me.
Parker, Steve, 17/10/2018 03:56 PM

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55, 56

configuration information and Post Master transactions. The latter where then replicated to central servers over communication links. ~~(i.e. [please explain what this means])~~. This means that such access was required in order for Fujitsu to support users.

26. The example given by Mr Roll ("*when a binary bit would "flip", thus a "1" became a "0"'*") relates to a configuration item~~flag~~ which can become locked in the wrong binary setting (1, 0). One example of which would be a stock unit lock which, in the wrong state, would ~~,~~ prevent~~ing~~ updates to stock units within a branch. Correcting t~~T~~his does not~~t~~ involve accessing or editing transaction data in any way or re-creating databases. ~~The tool used to correct this issue is described in [exhibit DEV/APP/LLD/0202]. [I understand from Post Office's solicitors that this document has been provided to the Claimants as part of these proceedings.]~~

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61, 62

27. Where Mr Roll refers to re-creating the database I understand him to be referring to the process that Fujitsu would follow if data became corrupted [**how often would this happen?**]. As explained by Mr Godseth in paragraph 35 of his statement, in Legacy Horizon:-

27.1 all counter data was held in a bespoke message store[1] and the data was replicated within each branch to a~~i~~ll counter positions and from each branch to the data centres where it was held in the correspondence server message stores;

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27.3 any data inserted into the message store at the data centre (for example reference data or authorisations for banking transactions) would be replicated back to the branch counters; and

27.4 selected data was then extracted from the correspondence servers to update Post Office's back end systems.

28. If one of the sets of data became corrupted [**how would FJ know it had been corrupted?**] on a counter SSC would delete the entire set of data on that counter and replace it with a copy of the data from one of the other sources that had not been corrupted. While this process involves deleting and replacing a set of data, no new data is produced; all that happens is that the correct data is used to replace the data that has become corrupted. [It would have been necessary for SSC to inform a branch before carrying out this task.] [**why? would it have caused a problem if the branch tried to use Horizon while this was happening?**]

29. Mr Roll also claims that:-

29.1 "*some errors were corrected remotely without the sub-postmaster being aware*" (paragraph 16); and

29.2 there were some errors where it was necessary to "*download and correct the data and prepare it for uploading back on to the post office computer, then call the postmaster to inform him that there was problem and that we needed two or three minutes to correct it*" (paragraph 17).

30. It is not clear what errors Mr Roll is referring to or how he says they were corrected. As explained by Mr Godseth in paragraph 36 of his statement, users with sufficient access permissions could inject additional messages (i.e. data) at the correspondence server and the fact that such data had been injected in this way would be clearly identifiable. [**Note - GJ now says that SSC could inject data at the counter. Need to bottom this out ASAP and explain whether such injections were clearly identifiable**] [**Need to say whether or not these things could be done without informing the branch**]

31. It may be that Mr Roll is referring to issues relating to the end of day concept in Legacy Horizon. Essentially there was a cut-off point for transactions every day [**what time?**] and each counter had to write an end of day message to the branch's master counter to enable the master counter to harvest messages (including details of transactions) to Post Office's back end systems. Occasionally a counter in a branch would fail to write an end of day message and there was a process for correcting it. The issue would be reported to SSC by way of a Peak (either as a result of a call to HSD or sometimes FJ could spot issues via system events). In lay terms, SSC

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[1] A message means data and transaction data is a subset of the data in the message store.

Page 5 Comments

PS31   Suggest this is removed since the document pertains to HNG-X. While it has the same
effect on HNG-X systems it was not the tooling used on the Horizon system Richard
was working on at the time.
Parker, Steve, 17/10/2018 01:21 PM

GJ32   That sounds like an HNG-X doc so probably not the correct one.
Gareth Jenkins, 15/10/2018 04:44 PM

GJ33   Godeseth
Gareth Jenkins, 15/10/2018 04:45 PM

would force the counter to generate a report based on the data already in the counter; this would not alter the transaction data. A message injected in this way would go into the audit trail.

32.　[In summary:-

32.1　Fujitsu could not change transaction data; and

32.2　Fujitsu could inject transaction data and such injections were clearly identifiable.] [GJ41] [**Why would FJ want or need to inject transaction data?**] [GJ42]

33.　I do not understand what Mr Roll means when he says that SSC had the ability to "*transfer money remotely*" (paragraph 18). [SH43] Nor do I understand how a third party could have accessed the system and I note that Mr Roll has not attempted to explain this (paragraph 18). It was not (and is not) possible for Fujitsu to do anything with money in a branch. [As noted above, the only thing they Fujitsu could do in theory was inject transaction data and it would only do so [**insert explanation**]. [**Could FJ in theory manipulate a branch's transaction data in a way which was detrimental to a particular SPMR and undetectable is simply wrong.**]

Page 6 Comments

GJ34   Events picked up by SMC and usually a failed counter that would not restart (hence a call to HSD from the SPMR)
Gareth Jenkins, 15/10/2018 04:46 PM

GJ35   Yes it would. However it is likely that any attempt to use that counter would fail.
Gareth Jenkins, 15/10/2018 04:47 PM

GJ36   It was always possible. I had originally though that this was not routinely done, but John pointed out last week at least one example of when it needs to be done at a counter. NB that example is NOT transactional data.

We are now in the area of "normal practice" v "malicious coding", which Torstein excludes as "with malicious coding anything can be done".

However I'm concerned that RR is implying that some people in SSC were being malicious and I don't know how we defend against that.
Gareth Jenkins, 15/10/2018 04:48 PM

PS37   Processes in place required that such transactions can be identified, usually a unique node number (that could not come from a normal counter) or a unique user name. Process again dictates that the branch is informed.

Transactions would be visible in Post Master reporting and audit trail.

Don't know how to defend against the suggestion that a person with high levels of access could act maliciously. It is true of any computer system that you have to trust your "super users" and that the peer group would detect that "something wasn't right"
Parker, Steve, 17/10/2018 03:40 PM

GJ38   There is no need to inform the branch and they might be unaware of it.
Gareth Jenkins, 15/10/2018 04:51 PM

GJ39   7pm
Gareth Jenkins, 15/10/2018 04:52 PM

GJ40   Add: to write a Branch EOD message, which would then trigger the data Centre to
Gareth Jenkins, 15/10/2018 04:52 PM

GJ41   Yes if done in process, but not necessarily if done maliciously
Gareth Jenkins, 15/10/2018 04:54 PM

GJ42   Main reason is for transactions stranded on a "dead" counter. There may have been some cases where transactions were injected to correct a bug that had been identified. Not sure if that was the case or not.
Gareth Jenkins, 15/10/2018 04:54 PM

Page 6 Comments (Continued)

SH43   Need a more robust rejection here. The position, as I understand it, is that FJ could not do anything with money in a branch i.e. could not in any way transfer it into or out of a branch and this needs to be explained. The only thing they could do in theory was inject transaction data (not amend existing transaction data), that there was no point in doing so (i.e. it was something they would only very rarely want or need to do) and that it was anyway a pointless exercise since it would immediately be picked up by Horizon's checks. The key point, which I think does not yet come across in this draft, is that the suggestion that FJ was able to manipulate a branch's transaction data in a way which was detrimental to a particular SPMR and undetectable is simply wrong.

Simon Henderson, 15/10/2018 10:44 AM

Track Changes

1	Change	Parker, Steve,	17/10/2018 07:54 AM
2	Change	Parker, Steve,	17/10/2018 07:54 AM
3	Insert	Parker, Steve,	17/10/2018 02:06 PM
4	Insert	Parker, Steve,	17/10/2018 07:44 AM
5	Insert	Parker, Steve,	16/10/2018 03:25 PM
6	Insert	Parker, Steve,	16/10/2018 03:26 PM
7	Insert	Parker, Steve,	16/10/2018 03:26 PM
8	Insert	Parker, Steve,	16/10/2018 03:27 PM
9	Change	Parker, Steve,	17/10/2018 08:00 AM
10	Insert	Parker, Steve,	16/10/2018 03:27 PM
11	Insert	Parker, Steve,	16/10/2018 03:27 PM
12	Change	Parker, Steve,	17/10/2018 09:46 AM
13	Change	Parker, Steve,	17/10/2018 09:52 AM
14	Insert	Parker, Steve,	17/10/2018 09:52 AM
15	Change	Parker, Steve,	17/10/2018 09:46 AM
16	Insert	Parker, Steve,	16/10/2018 03:30 PM
17	Change	Parker, Steve,	17/10/2018 09:43 AM
18	Insert	Parker, Steve,	17/10/2018 09:02 AM
19	Insert	Parker, Steve,	17/10/2018 09:11 AM
20	Insert	Parker, Steve,	17/10/2018 09:14 AM
21	Insert	Parker, Steve,	17/10/2018 09:11 AM
22	Insert	Parker, Steve,	17/10/2018 07:52 AM
23	Insert	Parker, Steve,	16/10/2018 04:30 PM
24	Delete	Parker, Steve,	16/10/2018 04:24 PM
25	Change	Parker, Steve,	16/10/2018 04:24 PM
26	Change	Parker, Steve,	16/10/2018 04:26 PM
27	Insert	Parker, Steve,	17/10/2018 10:03 AM
28	Insert	Parker, Steve,	17/10/2018 01:37 PM
29	Change	Parker, Steve,	17/10/2018 10:39 AM
30	Change	Parker, Steve,	17/10/2018 10:39 AM
31	Change	Parker, Steve,	17/10/2018 10:40 AM
32	Insert	Parker, Steve,	17/10/2018 02:28 PM
33	Change	Parker, Steve,	17/10/2018 02:28 PM
34	Change	Parker, Steve,	17/10/2018 12:13 PM
35	Change	Parker, Steve,	17/10/2018 12:07 PM

Track Changes (Continued)

36	Insert	Parker, Steve, 17/10/2018 12:07 PM
37	Change	Parker, Steve, 17/10/2018 12:07 PM
38	Insert	Parker, Steve, 17/10/2018 12:09 PM
39	Delete	Parker, Steve, 17/10/2018 12:14 PM
40	Change	Parker, Steve, 17/10/2018 12:13 PM
41	Insert	Parker, Steve, 17/10/2018 12:15 PM
42	Insert	Parker, Steve, 17/10/2018 12:16 PM
43	Insert	Parker, Steve, 17/10/2018 12:23 PM
44	Insert	Parker, Steve, 17/10/2018 12:25 PM
45	Delete	Parker, Steve, 17/10/2018 12:26 PM
46	Change	Parker, Steve, 17/10/2018 12:26 PM
47	Insert	Parker, Steve, 17/10/2018 12:26 PM
48	Change	Parker, Steve, 17/10/2018 12:26 PM
49	Delete	Parker, Steve, 17/10/2018 03:01 PM
50	Insert	Parker, Steve, 17/10/2018 01:11 PM
51	Insert	Parker, Steve, 17/10/2018 01:12 PM
52	Change	Parker, Steve, 17/10/2018 01:12 PM
53	Delete	Parker, Steve, 17/10/2018 03:36 PM
54	Insert	Parker, Steve, 17/10/2018 01:15 PM
55	Delete	Parker, Steve, 17/10/2018 01:15 PM
56	Delete	Parker, Steve, 17/10/2018 01:15 PM
57	Insert	Parker, Steve, 17/10/2018 01:15 PM
58	Change	Parker, Steve, 17/10/2018 01:19 PM
59	Change	Parker, Steve, 17/10/2018 01:20 PM
60	Delete	Parker, Steve, 17/10/2018 01:20 PM
61	Change	Parker, Steve, 17/10/2018 01:21 PM
62	Change	Parker, Steve, 17/10/2018 01:21 PM
63	Change	Simon Henderson, 15/10/2018 10:22 AM