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Witness Name: Anne Olivia Chambers

Statement No: WITN0017_01

Exhibits: None

Dated: 15 November 2022

POST OFFICE HORIZON IT INQUIRY

FIRST WITNESS STATEMENT OF ANNE OLIVIA CHAMBERS

I, *Anne Olivia Chambers*, will say as follows

1. This witness statement is made to assist the Post Office Horizon IT Inquiry with the matters set out in the Rule 9 request provided to me dated 6 October 2022. It relates to matters that occurred between 2000 and 2016, at which point I retired. As I have indicated throughout the witness statement, I have tried to assist to the best of my ability despite the difficulties of recalling all details of events across that period at this remove and given my limited access to contemporaneous documentation.

2. I graduated from University College of Wales, Aberystwyth in 1978 with a 2:1 degree in Statistics with Pure Mathematics, and started working for Dataskil, the software house of International Computers Limited (ICL). I coded and supported various packages, mostly statistical or database related. From 1986 I was home-based, working part time for ICL as a Software Diagnostician, investigating errors reported by users in various software products and producing code fixes.

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During the 1990s I increased my working hours but remained home-based, continuing support work but also checking various external systems for possible Year 2000 issues.

3. From around 1997 I also did some coding and support in respect of part of the new Pathway system for the Post Office concerning the transfer and validation of files from the DSS / Benefits Agency. This work was subcontracted to my department. Most of this part of the system was abandoned in 1999.

4. I have been asked to explain my role in relation to the Horizon IT Project. In October 2000 I joined the System Support Centre, also referred to as EDSC or 3rd line support ("SSC") as a System Support Specialist, working full-time in the office, providing 3rd line support (technical, software not hardware, but not responsible for code fixes) for the Post Office Horizon systems which were just being installed at branches across the country.

5. Initially it was intended that my role would be in supporting the parts of the system which extracted data from all the branch transactions and passed it to 3rd parties, for example to TV licensing, but I gravitated towards support of the branch counter systems, whilst learning much about the whole system and the many changes that were introduced over the years.

6. In around 2002 ICL, which had the original contract with the Post Office for Horizon, was taken over and rebranded by Fujitsu.

7. I remained a System Support Specialist but was often treated as a technical lead, both within SSC and the Fujitsu Post Office team generally.

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8. From around 2012, in addition to providing general support, I was responsible for producing reports checking that the system had sufficient capacity for the transactions being done.

9. I retired in January 2016 having reduced my working hours over the preceding couple of years.

KEL system

10. I have been asked to explain the purpose and operation of the KEL database. KEL stands for Known Error Log. The KEL database was a set of documents describing the symptoms and solutions for problems and bugs. It was intended for use by Fujitsu support at all levels. The Horizon support desk ("HSD"), which received calls from branches, the System Maintenance Centre ("SMC"), which monitored Events, and the Management support unit ("MSU"), which monitored Reconciliation Reports, on receiving a report of a problem, were each expected to check for relevant KELs for a solution before passing service tickets to SSC.

11. KELs usually included a hot link to the associated PEAK(s) (see paragraph 18 below) and often to other related KELs. Sometimes a master KEL would be created with guidance on distinguishing between several problems with similar symptoms.

12. When a service ticket was passed to SSC, a person in the role of Pre-Scanner (an SSC Administrator, replaced later in my time there by members of SSC staff on a rota) would check whether HSD or SMC had found an appropriate KEL, and possibly add to or amend the KEL before allocating the service ticket to a particular SSC diagnostician.

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13. Within SSC, we were all meant to able to handle any type of service ticket, but in practice most of us specialised in particular aspects of the system and would be familiar with many of the known errors of a particular category. The vast majority of KELs were written by SSC staff, and we would edit KELs to improve the instructions as to what evidence to look for and what action to take. We were users of the KEL system too, but primarily we were the authors.

14. Some KELs were written by the Development team, to record the existence of a few known errors which were not going to be fixed before the revised counter software system, HNG-X, went live.

15. The KEL system was redeveloped by SSC at some point, but I cannot remember when. The purpose of the system remained the same.

16. I am asked whether I consider that the KEL system was adequate for its purpose. Overall, I think the KEL system worked well although there were some problems. For example, many KELs documented similar symptoms, and service tickets could be passed to SSC with the wrong KEL quoted.

17. Further, SSC and Development did not always know how many branches had reported a particular problem because once it was being investigated and had a KEL raised, generally further service tickets were not meant to be sent to SSC for the same problem. This did not apply to MSU-raised reconciliation calls which were always looked at, and many KELs specified that any new occurrences should be passed over to us.

18. I am asked to describe the process a person would follow to search the KEL database to determine if there was a pre-existing KEL for a problem. I cannot remember exactly what the 'Search KEL' interface looked like, but it was a web-

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based service and all the KEL text was searchable. I usually had a good idea of what I was looking for and so could find it.

PinICL and PEAK systems

19. I am asked to explain how the PinICL and PEAK systems worked. The service ticket system used initially for Horizon was PinICL, which had been used for other ICL projects. At some point it was rewritten and renamed as PEAK. I cannot remember much about the former, or the differences between the two systems, but the user interface was similar, so I shall just refer to PEAK here.

20. I am asked whether I considered that the system was adequate to manage active service tickets. I did not consider that the system impeded our work but I am asked specifically as to whether I think there were potential changes which would have improved the systems. The problem I would identify was that the system assumed only one person or team needed to be actively working on the PEAK ticket at any one time whereas this was not always the case. If the Postmaster who raised the service ticket telephoned for an update, HSD might put that request on the Powerhelp call system which they operated and that might not get copied to the PEAK, depending on which option was chosen, which might not be noticed by the developer or tester who owned the call at that moment, who would not expect to give an update to a postmaster.

21. Similarly, if a problem had a financial impact, then it was necessary to inform Post Office (often via the MSU team), whilst separately, it was necessary to look for the root cause(s), which might involve passing the problem to the Development team for consideration of a code fix, and also to check whether

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any other branches had been or might be affected by the same problem. That might result in two or more people trying to work on the same PEAK.

22. It was possible to clone PEAKs so then one could go to MSU and a second to Development, which is something I used to do to try to manage things better and that practice could have been more widespread. Looking back I can see that basing the whole process around a single PEAK (arising from an incident) per problem was not good and it is likely there is a methodology in existence somewhere for handling this type of situation better.

23. I am asked how service tickets were assigned. HSD and SMC would raise service tickets on their own system which was called Powerhelp (Later Powerhelp was superseded by Triole for Service (TfS). For simplicity I will refer to both as Powerhelp in this statement). When they decided to transfer the ticket to SSC, they pressed a button which automatically created a PEAK call and copied in the information from the Powerhelp ticket. This interface was called the OTI. The Powerhelp ticket remained open until the underlying PEAK was closed.

24. The PEAK call would be on the SSC stack (for historical reasons called EDSC), and the SSC Pre-Scanner would review the information provided and then either return it to the originator if there was insufficient information on it or allocate it to an SSC technician – so it moved onto their individual stack. The Pre-Scanner knew, as we all did, who specialised in which areas of the system. It was not unusual for someone to tell the pre-scanner that they would like a particular call to be allocated to them.

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25. The PEAK would be updated as the investigation progressed. It might be routed to one of the Development teams; if they did a code fix it would then go to Release Management for scheduling, then possibly through the test teams and back through Release Management. The PEAK would always come back through SSC to be closed (which would copy the response back onto the Powerhelp call). This could be many months after the service ticket was first logged.

26. SSC, developers and testers could also raise PEAKs directly.

27. I am asked how service tickets were prioritised. These were set by the original service ticket logger and were normally prioritised from A to C, with A being the most urgent. We could alter the original priority level in the course of our work as the situation developed.

28. 'A' priority was normally for a system-wide problem where many branches had lost functionality, for example problems with debit card payments, or where a branch was completely unable to trade, or for some reconciliation issues with a likely financial impact. Anything affecting or likely to affect a large number of branches would probably be looked at more quickly than something affecting a single branch, especially if it was still able to trade normally.

29. Any major problem affecting the entire estate would probably be taken on by several more senior people, regardless of whether it was allocated to them or what else was going on. Something that looked potentially serious to members of the SSC, even if not given a high priority by the original service ticket logger, would be investigated quickly.

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30. I am asked about the ways in which information was obtained, stored and accessed. Evidence came from various sources, depending on the type of problem and whether it was during the period of operation of Legacy Horizon or HNG-X. In relation to counter issues for Legacy Horizon, the primary sources of evidence would be:

- Riposte messagestore for the branch, extracted from the data centre messagestore;
- Application event log from the counter;
- psstandard.log from the counter;

and for HNG-X:

- Data for the branch from various tables in the Branch Support Database;
- UNIX application events from the counter;
- Log files from the BAL.

31. For HSD raised service tickets, i.e. those instigated by a call from a sub-postmaster, sometimes we would call the branch to get a better first-hand description of the problem or some clarification.

32. Over the years various people in SSC developed tools to help extract and analyse evidence from these and other sources. Some of these were available to HSD too, so they could check for known problems more effectively. This evidence could be attached to the PEAK and would be if it was passed on to Development. Details of SSC investigation and analysis would also be added, either as a Response section or sometimes as an attached spreadsheet or Word doc. Otherwise, evidence was kept in our area within the server.

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33. A service ticket was designated as closed on PEAK when an SSC investigation was complete. This could be due to a number of factors:

- System working as designed; user error or misunderstanding;
- Something wrong but not software, for example a printer problem;
- Something wrong but already being progressed on another service ticket;
- Investigation could find no indication of any problem with the system;
- Software or reference data bug identified and fixed;
- Problem acknowledged but not fixed (root cause not found or found but too risky to fix, and very limited impact and/or frequency).

34. I am asked whether I was aware of any contractual requirements or contractual penalties that that Fujitsu was subject to in respect of its processing of service tickets. I believe there were various requirements and penalties but I cannot remember the details. It was not something that drove the way we worked, although, subject to what I have said above, 'A' priority calls did take priority.

System Support Centre (SSC)

35. As set out above, I joined SSC in October 2000 and left in January 2016, working reduced hours for a year or so prior to that.

36. I am asked questions as to how the SSC operated in practice. When I joined SSC in late 2000, Horizon had been installed at some but not all branches. There were about 25 diagnosticians and an administrator, all reporting to the manager Mik Peach. Different people specialised in different parts of the system (for

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example, on counters, or on several different central databases), though we were all expected to handle any type of incident if necessary.

37. There were always five or six of us, including me, who would be most likely to handle any service tickets to do with counter balancing.

38. Everybody in SSC could see all the PEAKs allocated to team members and we often cooperated or shared knowledge, for example if a problem appeared to be a side-effect of something we had already been working on or another instance of a known error.

39. Through the 2000s, some staff left and fewer arrived, but it was a relatively stable team with a lot of knowledge of the system and of each other's strengths and weaknesses. In the year or so before the introduction of HNG-X in 2010 there were a few extra joiners. Mik Peach left around this time, and I think was replaced by Tony Little for a few months, before Steve Parker, who had been Mik's unofficial deputy, took over. Not long after that, four or so team leaders were appointed. My team leader was Mark Wright.

40. After a very busy period of about six to seven months when HNG-X was introduced in 2010, the workload decreased somewhat. Over the next few years some additional, non-Post Office work was taken on, SSC took responsibility for the production of capacity reports for the system and various other tasks. The FJ reference data team and MSU team were merged into SSC. By the time I left in 2016 the team was probably around 12 to15 people.

41. SSC, also referred to as EDSC or 3rd line support, was the only team with full access to live systems. The team was responsible for investigating system problems that could not be resolved by HSD/SMC/MSU, maintaining KELs for

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use by all the support teams, gathering evidence sets to be passed to 4th line support for code-level investigation where there was sufficient evidence of a software problem. From around 2007 a real-time monitoring system was developed (by SSC) to alert us to system-wide problems, for example if there were large numbers of failing debit card transactions; this system was tweaked and extended over the years. We also sometimes handled ad hoc requests for data extracts from system architects and Post Office. SSC provided 24-hour, seven day a week support but I was never on the out-of-hours rota.

42. SSC interacted directly with all the following teams except the Network Business Support Centre:

(i) **NBSC:** This was the Post Office's business support team and was outside Fujitsu. I understood NBSC was responsible for business-related queries from postmasters, including discrepancies, and questions as to how to use the system. NBSC had no direct interface with SSC, and the two teams had no access to each other's call logging systems.

(ii) **HSD** (Horizon Support Desk) (IMT (Incident Management Team) was a subset of HSD): This was a Fujitsu-run helpdesk for branch-raised system problems, hardware problems, and any suspected software problems. For the latter, postmasters would often have talked to NBSC first then been told to telephone HSD if the issue could not be resolved, for example because there was an inexplicable loss. Late on in the period, I believe, HSD was renamed HSH and run offshore by ATOS. All incidents were logged by HSD on their system which, certainly initially I recall, was called the Powerhelp system. HSD were meant to get a clear description of the problem then

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search the KELs and, if they found a match, follow the advice there. If the KEL instructed that the matter be referred to SSC, or if HSD could not find an appropriate KEL, the Powerhelp call would be routed to SSC via the OTI, creating a PEAK.

(iii) **SMC** (System Maintenance Centre): This team was responsible for monitoring system events and messages generated by the live system (from numerous backend servers as well as counters), to pick up on anything that was not running as expected. This service was later outsourced to a team in India, but I cannot remember when that happened. Incidents were logged on Powerhelp, checked against KEL database and if appropriate, passed to SSC through OTI automatically raising a PEAK.

(iv) **MSU** (Management Support Unit): MSU monitored Reconciliation Reports generated by the system each day to check the integrity of data, for example the TPSC250 report (there were a suite of such reports) and banking/debit card reports which showed any anomalies in such transactions (cross-checked with data from the banks). MSU raised PEAKs so SSC could investigate cause and impact of every entry on the Reconciliation Reports. My understanding is that MSU informed a team in Post Office of any such errors which potentially had a financial impact on a branch, via a BIM report and that it was then up to Post Office to notify the branch and make any necessary correction.

(v) **4th line support**: handled by the Development teams. These support teams varied in size and number as the system evolved. Most of the Legacy Horizon Counter software was maintained by the EPOSS (electronic point

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of sale system) team. Much of HNG-X was developed by GDC in India who then provided 4th line support too, with some technical expertise still retained in the UK.

(vi) **Fujitsu Problem Management Team** – liaised with Post Office when problems affecting a major part of the system occurred.

(vii) **Team based in Belfast** looking after the central servers and databases. For Legacy Horizon these were at data centres in Wigan and Bootle. I cannot remember where the data centre for HNG-X was physically located.

(viii) **Fujitsu and Post Office reference data teams**. Much of the counter information (for example, price of products, which branches could sell what, what buttons appeared where and on which screen, and much more) was controlled by reference data rather than code, so sometimes a bug would be identified which was caused by incorrect reference data.

(ix) **MSC** – I am asked about MSC but have no clear recollection of there being a team of that name. There was a process called MSC which involved the application of changes to the live system. SSC (or another team) would raise a request, for example, to get a server restarted. This had to be authorised variously, sometimes including authorisation directly from Post Office, before being actioned.

43. I am asked as to the minimum level of skills and expertise required of SSC staff. I was never involved in recruitment so cannot answer this question. In terms of the required training, I can say the following. In 2000, I and some other new joiners attended the same counter training course as was provided for postmasters. I think all SSC members would have done this course if they joined

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in the first few years, and the course notes were given to all who joined during the life of Legacy Horizon. Some of us also attended a Riposte training course. Each new joiner would be assigned a mentor and they would work together for several weeks. When new functionality was introduced to the system, the Development team or designers would give training sessions which we were all expected to attend.

44. I am asked how members of the SSC were briefed or updated on potential problems, bugs, errors or defects within the Horizon IT System and on how to rectify those. We did this by talking to each other, perhaps also via email to make sure the whole team was alerted to a new problem and knew which KEL to use if there were likely to be many service tickets for the same bug.

45. I am asked whether I considered that the SSC had sufficient resources and / or expertise to meet its purposes and / or provide an adequate service reliably. Specifically, I am asked this with regard to the level of demand. My response is that generally SSC had sufficient resources to handle the volume of calls received and to provide cover 24 hours a day seven days a week, albeit there were only a couple of people on call for the central systems overnight and at weekends. We were stretched when HNG-X was being piloted in early to mid 2010. Subsequently, at times we were over-resourced, though the need for 24/7 support meant the team could not be reduced too much. As a result, the team took on some additional work streams. Most of the team were flexible; if there was an urgent ongoing problem then people would work at it for as long as required.

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46. I am asked whether I considered that the Horizon Support Desk, NBSC and / or SMC referred an appropriate proportion of issues to the SSC for investigation. NBSC did not refer issues directly to SSC, though they may occasionally have made a request to HSD that SSC investigate. It is impossible for me to comment as to the proportion of matters that were never brought to the attention of SSC. My sense was that generally matters were correctly routed.

47. I am asked whether, if I consider there was sufficient resources or expertise, and if not, what effect that had on the service provided by the SSC. As I have stated, I do not consider it can be said that we were under-resourced or lacked appropriate expertise.

48. I am asked whether I ever felt under pressure to avoid finding bugs, errors and defects in the Horizon IT software. I never did; that was my job.

49. I am asked about FUJ00086462 which is a short email chain which concerns the performance (i.e. processing speed) of the Horizon system. I cannot remember exactly when it happened, but at some point, weekly Cash Accounting Periods were replaced by four-weekly Trading Periods, optionally split into weekly Balance Periods. This was supposed to have the benefit that branches need only produce Balance Reports every four weeks, but the design and implementation resulted in a process that could take hours to complete on Horizon, in addition to the time taken to do the associated paperwork. Many sub-postmasters complained about this, particularly busy branches with several counters operating a single stock unit. As I recall, at the point in time at which these emails were sent, the Development team had been looking at this issue for some time, initially saying the system was working as designed and as

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agreed with Post Office. I had gathered data from several branches to show the time being taken and was aware of the frustration being caused, so when invited by Graham Welsh (FJ service management) to comment to John Burton (counter software development manager, I think) I made my point forcefully. I am asked whether there was guidance provided on performance issues and I do not recall there being any.

50. I am asked to set out any further recollections of my time working on the SSC which I think are relevant to the Inquiry, including details of any positive or negative aspects about the service provided by the SSC. In general, I would say that we provided a good service, keeping a very complex system up and running. We were proud of what we did, and skilled at finding every bit of evidence we could squeeze out of the system to help our investigations.

51. However, when it came to branch problems, we could only work on the basis of what was recorded on the system and any extra information which the postmaster or clerk could provide. We could not see what had physically occurred in the branch; whether for example, there was an inputting error that was not evident from the pattern of Riposte messages. Sometimes that meant we could not provide an answer to explain a discrepancy because none of the forms of evidence available to us gave any indication and there were no inconsistencies in the figures recorded and calculated by Horizon. In those circumstances we would have to record that we could not find any evidence of a systems error.

52. I am asked to explain the process Fujitsu would follow when a bug was identified or suspected. SSC would make sure a KEL was in place to document the

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symptoms and the action that was required if there were any further occurrences. SSC might also try to reproduce the problem on a test system. 4th line / Development would look for the root cause with a view to producing a fix. SSC and other teams might work out what if anything needed to be done to sort out the consequences of the bug, for example, on branch accounts or the backend systems. The Problem Management team might be involved and might liaise with Post Office. If the bug was in newly released software, the software might be regressed.

53. I am asked whether Fujitsu took pro-active steps to identify bugs and / or discrepancies in branch accounts caused by the same. The automatic cross-checks made and reported on the TPS, APS and banking reconciliation reports highlighted inconsistencies which might indicate a bug. These were always investigated, and MSU informed Post Office via a BIM report if the bug had affected the branch accounts, or accounts with other third parties. If a bug was found to be affecting branch accounts which had not caused a reconciliation report entry, we would do our best to identify all branches affected, as we did for Bug 3 (see PC0223870). However, I cannot say that this was done consistently for all bugs ever found, especially in the early days of the project.

54. I am asked whether there were any written or unwritten practices, policies or procedures to restrict what information about a bug or potential bug could or would be shared with others, either for limited periods or indefinitely. I was not aware of any such. If I spoke to a postmaster about a problem and I identified it had been caused by a system error, I would say so.

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55. I am asked how a fix would be implemented if it involved changes to the Horizon system's code. The code change would be made by the relevant Development team, tested by them, tested by LST (Live System Test) and then released to the live estate. Anything very complex or having little impact would probably be kept for the next scheduled release (e.g. S70, T10).

56. I am asked in what circumstances a work-around would be offered for an identified bug, rather than a change to the code. Changing code to fix a bug was potentially risky; in fixing one thing you might unwittingly break something else, despite extensive testing. So occasionally a change would not be made even if a code bug had been identified. In other cases, there might be insufficient evidence to find the root cause, especially if it was not possible to reproduce the problem. Thirdly, there could be a delay of several months between identification of a bug and a fix being applied. In such circumstances a work-around would be offered if available, else SSC or other teams would have to continue to deal with the consequences of further instances as they arose.

57. I am asked to look at FUJ00080215 which is a document entitled Reconciliation and Incident Management Joint Working Document. My name appears on the internal distribution list within this document because I had helped its author, Penny Thomas, and her predecessors understand the flow of data through the system, in particular for Network Banking and the DRS, which checked for each banking / card payment transaction to see that the branch outcome matched the bank outcome and reported any transactions where this was not the case.

58. My attention is also drawn to FUJ00080213 which describes the HNG-X Reconciliation Report Suite. There were similar documents for Legacy Horizon.

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59. I am asked to explain my involvement with the task of reconciliation and/or with the Reconciliation Service. I had no formal involvement with the Reconciliation Service, except as a member of SSC investigating PEAKs raised for report entries. Informally I gave support and advice to various MSU / Reconciliation Service staff members over the years.

60. I am asked to assess the efficacy of Reconciliation at identifying discrepancies and/or bug, errors or defects. There is an explanation of Reconciliation in section 1.1 at page 9 of FUJ00080215. A Reconciliation Report entry was generated whenever there was an inconsistency between data recorded in the branch accounts and data recorded elsewhere in the system, i.e. in:

- the central messagestore;
- customer's bank account;
- automated payment client such as BT;
- data sent to Post Office's financial databases;
- a difference in Receipts and Payments; or
- branch transactions not netting to zero.

I would say the Reconciliation process was an effective means of identifying bugs, errors and defects. These inconsistencies were all investigated, and sometimes were caused by a bug, and would sometimes have caused a discrepancy at the branch accounts. The Reconciliation process has nothing to do with the investigation of discrepancies between the physical stock and cash declared in branch and the system-calculated cash/stock value.

61. I am asked to speak to the BIM system: when was it introduced; how did it operate and how effective it was. I had no visibility of the BIM system. At some

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point I became aware that MSU usually just cut-and-pasted SSC's PEAK response into the BIM report, so I and others tried to make sure we wrote our responses in a way that would be clear to Post Office staff.

Bugs etc identified in Appendix 2 of Horizon Issues

62. I have been asked to comment on most of the items identified in Appendix 2. I do so with the following caveats. I retired in January 2016. I have no access to any contemporaneous information other than what has been provided to me by the Inquiry, and a few PEAKs and KELs disclosed by the police. My explanation is based purely upon my memory, aided by this information and by reading Mr Justice Fraser's Horizon Issues judgment (No. 6) and Appendix 1. I am not able to provide accurate dates nor certainty as to who knew what when. I cannot meet in full the request set out in paragraph 20 of the Inquiry's request. I am asked about further bugs I recall. There were other bugs, which were reflected in PEAKs, but it is difficult for me to speak to them now without the documentation.

Receipts and payments mismatch (bug 1 in *Horizon Issues*)

63. A Receipts and Payments mismatch is a symptom of an underlying system problem. Over the years there were various underlying problems which caused this symptom. Every Final Balance Report included Receipts and Payments totals. Receipts (money coming in, and stock/cash held at the start of the period) should be equal to Payments (money paid out, and stock/cash held at the end of the period). The postmaster would move any Discrepancy (a difference between the cash the system thought should be held, based on transactions

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recorded, and what the postmaster actually held) to Local Suspense when the Final Balance Report was produced.

64. As a very simple hypothetical example, sale of a single £1 stamp: there would be a pair of transactions £1 stamp out and £1 cash in. Each set of transactions must always net to zero. But if only the stamp transaction was stored, with no cash element, you would have a Receipts and Payments mismatch when you produced a Balance Report. If you had taken the cash, you would also have a discrepancy (£1 gain) but even after accepting the gain, you would still have an R&P mismatch. If Receipts and Payments were not equal on the report, this might be noticed by the postmaster. It would in any event be flagged centrally by Legacy Horizon on one of the TPSC reconciliation reports (monitored by MSU) and by HNG-X as a critical system event (monitored by SMC).

65. In respect of the specific problem identified in Appendix 1, a Receipts and Payments mismatch occurred where the balancing process was cancelled by the user at a particular point and then completed apparently successfully (not the only or most likely point for the balance to be cancelled, but perfectly valid). The amount of the mismatch was the discrepancy being moved to Local Suspense (this is not a simple case like my example above but a much more complicated instance of the R&P mismatch problem).

66. This would be evidently a bug in HNG-X which needed to be fixed, and in the interim monitored to make sure that all instances were trapped. Post Office would have been informed of each instance, I am not sure whether this was via a BIM report or some other route. Fujitsu would not have contacted branches directly unless the branch had raised a call in the first place.

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67. FUJ00081062 is an email exchange between Gareth Jenkins and me of 6 May 2010 in which Gareth Jenkins asked me whether there was a KEL for Receipts and Payments mismatch events. I replied to Gareth that there was a KEL created by a colleague which required SMC to raise a call if they saw this event, but I had seen no such calls from SMC. Gareth had access to the SMC event system and had noticed two occurrences of the Receipts and Payments mismatch event. POL00029425 is KEL ballantj1759Q, which SMC should have found and followed when confronted by this type of incident.

68. I am asked what would have been my initial thoughts on the cause and / or likely symptoms of the reported events. I would have concluded that we had a system problem and would have expected SMC to have raised a service ticket. I think SSC did subsequently make further regular checks for these events, by looking at historic records and on an ongoing basis, and that could well be because SMC had missed these at the time.

69. Looking at the documents now, I am not sure that these two events noted by Gareth were caused by the specific bug 1 discussed in paragraphs 128-140 of Appendix 1, which was apparently investigated in September 2010. I cannot remember who looked at them nor any details. KEL ballantj1759Q lists three possible causes of HNG-X R&P mismatches that were found.

70. I am asked specifically to expand on the use of the phrase "*PM-raised call from a few weeks back*". I do not remember it but infer that I must have had a PEAK assigned to me in Spring 2010, where a sub-postmaster had noticed a difference in the Receipts and Payments totals on his balance report, which I had not yet

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investigated. It certainly should not have been left for weeks, but the HNG-X pilot was over that period and it was an exceptionally busy time for us all.

71. I am asked to expand on the use of the phrase "*The branch accounts may need to be corrected*" in KEL ballantj1759Q. I am asked to identify who would correct the branch accounts and by what method. Without seeing KEL wrightm33145J and the associated PEAK, I cannot be certain what had to be done to correct the accounts.

Callendar Square / Falkirk Bug (bug 2 in Horizon Issues)

72. This issue became known as the Callendar Square bug because the sub-postmaster at the Callendar Square branch encountered a problem with Transfer of cash several times in 2005 and 2006, had a loss because of the underlying problem, was understandably very unhappy with the way it was dealt with, and shared his concerns with other sub-postmasters.

73. Within SSC we referred to the underlying problem as the Riposte Lock problem. Normally Riposte messages were automatically replicated between counters so each counter held an identical set of all transaction and reference data relating to that branch. But occasionally one counter would fail to accept any messages from any other counters. This usually seemed to be triggered by something early in the declaration or balancing process. Repeated application events were generated which were not visible to the user. The event storm and failure to replicate would persist until the counter was rebooted or Cleardesk was run. Cleardesk was an operation which consisted of an automatic shutdown and restart of all counter processes in the early hours of every morning.

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74. The counter would still be able to serve customers and would appear to be working normally, but anything done on other counters after the events started would not be visible. Reports printed on the counter would not include transactions done on other counters so those transactions might be re-entered. Incorrect discrepancies could be reported if the money was in the till but the transactions weren't included in the balance. Transfers between stock units might be accepted in twice, causing a discrepancy and a receipts and payments mismatch. Single counter branches could not have this problem.

75. In many, probably most, cases there was no impact on the accounts because balancing was done on a single counter after the end of trading. Sometimes the sub-postmaster gave up in frustration and found it was all resolved in the morning. If they did complete the balance, any financial irregularity might show on one of the Fujitsu reconciliation reports, or the branch could have an equal but opposite discrepancy the following period, which would include the unseen transactions.

76. The root cause of the problem appeared to be within the Riposte software, which was a product supported by a company called Escher. If we had been able to reproduce the problem, or work out what triggered it, it might have been possible for Fujitsu code to deal with it, but as it was, we were reliant upon Escher to provide the ultimate solution.

77. I have been shown Jez Murray's entry in FUJ00083663 on 10 November 2005 and I am asked how effective was the work-around suggested by Jez. It was not effective. It relied on the postmaster and other staff being aware that something was wrong with the system. I can clarify that Point 4 in that entry is

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not a workaround, it is concerned with trying to sort out the financial consequences after the event.

78. I am asked about the phrase, within POL00028984, "*this problem has been around for years and affects a number of sites most weeks*". I had known about this Riposte lock problem since soon after I arrived at SSC in 2000. I and others in the SSC understood the cause of the problem to be a problem in the Riposte software which we thought was being investigated by Escher.

79. I can see now that there was a substantial delay in the matter being addressed as between the Fujitsu Development team and Escher. That appears to have been because Development were waiting to see further instances of the problem. A misunderstanding occurred because there were two KELs for this problem only one of which was updated to explain that Development were waiting for further instances, whereas the other KEL, which was the one referred to in practice, had not been updated with that information and indicated that Development and Escher had the problem in hand.

80. I am asked but cannot recall how many sites were affected each week. I stress that the transfer problem seen at Callendar Square was just one possible outcome of the underlying Riposte bug. This outcome was not happening at several sites per week. I am asked what steps were taken to mitigate the problem. SMC would raise service tickets in respect of event storms from counters and advise the sub-postmaster to reboot. HSD would advise branches reporting that transactions done on one counter were not showing on another to reboot before continuing with balancing.

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81. I am asked whether Post Office or sub-postmasters were told about the problem. It was not raised as a wider problem with Post Office; each instance was treated individually. In some cases a reconciliation report entry was generated (for example the double transfer-in at Callendar Square which caused a Receipts and Payments mismatch and a large loss); a BIM report was sent to Post Office for these.

82. I am asked why no fix was trialled or implemented prior to release S90. I suspect it was not raised with Escher until 29 September 2005 (see PC0126376) for the reasons I have set out. They supplied a fix in their next delivery. As Riposte was at the heart of the system, any changes to it had to go through a full test cycle.

83. I am asked to explain how the SSC would rebuild the messagestore, which is mentioned in KEL JSimpkins338Q FUJ00083720. I cannot remember the process exactly, but you could delete the counter messagestore, recreate an empty messagestore and let the messages replicate in from another counter. Each counter's messagestore held all the messages (transactions and many other records) for that branch, plus reference data etc from the central servers.

84. I am asked about the spreadsheet with reference POL00029308. I have a vague memory of being asked, I think by Steve Parker (SSC manager), to try to produce a list of PEAKs relating to the Riposte Lock problem where there may have been a financial impact. This was just before I left Fujitsu so would have been end of December 2015 or early January 2016. I assume this is that list although I am surprised to see the dates in American format and do not know whether the spreadsheet was changed after I produced it. I think I must have

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searched the PEAK system for any mention of Riposte Lock events, and relevant KELs or similar, making several passes using different search terms. I would then have looked at the individual PEAKs to assess what the likely impact had been on the branch. I may have provided more background in an accompanying email or a separate worksheet, quite possibly with a caveat that it was not a definitive list, but I do not have a copy.

85. Looking at that document now I have a couple of reservations. I am surprised there is nothing pre-2003 and wonder whether all PEAKs / PinICLs were still in existence, or whether some of the earlier ones been lost when we switched to PEAK. I am also not sure the statement to the effect that TPSC256 is no longer populated is correct.

86. I have been asked to consider FUJ00083712. This is an email chain regarding some ARQ requests from Post Office. The archived events for these branches were checked to see if there were any Riposte Lock events which might have impacted the branch accounts. This relates to the Callendar Square bug. Counter 2 at Branch 107026 was generating repeated Riposte Lock events between 00:04 and 02:27 on 5th January 2006. I am asked to comment on the premise that this incident was after the S90 counter release but that is incorrect as it was not (scheduled 04/03/06 to 14/04/06 according to email in FUJ00083722) which explains how it was that the problem had not then been fixed.

87. I am asked whether this problem had the potential to cause discrepancies in branch accounts or otherwise to affect the integrity of the Horizon IT System. It had the potential to do so but would leave evidence that something had gone

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wrong which would have been obvious to me and normally to the user as well. It might encourage the user to put items through again but that would usually be picked up at the back end. It might cause the user to accept a transfer in for a second time but there would then be a receipts and payments mismatch on the backend report in addition to the discrepancy. It might result in opposite discrepancies across periods. It did not have the potential to cause unexplained discrepancies across multiple weeks. The Riposte Lock events would be visible in the counter application event log (one of the files always checked by SSC when investigating problems) for several weeks, and subsequently could be looked for in the archived event files, even if not noticed by SMC when they initially occurred. Accordingly, when, for example, I investigated the problem at the branch at Marine Drive where Lee Castleton was the sub-postmaster, if the Callendar Square Bug had been involved that would have been apparent to me and in the event I was able to eliminate it as a possible factor.

88. I am asked specifically why I sent Gareth Jenkins the email dated 8 February 2010 at 14:17 (FUJ00083722). I assume I forwarded the email chain to Gareth because he had asked me for some information in relation to his investigations at a different branch.

Suspense account bug (bug 3 in *Horizon Issues*) and Local Suspense Account Issue (bug 7 in *Horizon Issues*)

89. These are two separate bugs, both to do with the HNG-X Local Suspense Account. When stock units were balanced at the end of a Balance Period (usually 1 or 4 weeks) the clerk would transfer any discrepancy for each stock unit (loss or gain) into a 'pot' on the system called Local Suspense. At the end

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of the Trading Period (4 weeks), when the final stock unit was rolled over into the new Trading Period, the postmaster would have to clear the balance in Local Suspense, for example by making good any loss.

90. Bug 7 was the first in time, occurring in April 2010. The relevant documents (FUJ00081867, POL00029380, FUJ00084125, FUJ00081896, FUJ00081868) show that a postmaster was forced to clear Local Suspense several times, getting stuck in a loop after printing the Final Balance Report when rolling into new Trading Period. FUJ00084125 KEL acha5259Q has a clear description of the symptoms. The underlying cause was a corrupt message sent from the central server which the counter could not handle, causing the counter to present the wrong screen to the user although a record to clear Local Suspense had already been written in the branch database. There was no impact on the branch accounts for the Trading Period just completed, but there would be an impact in the following period.

91. I recall that restarting central servers stopped the corrupt messages in the short term. The underlying cause of these particular corrupt messages was fixed in May 2010 (FUJ00081867 PC0197409 and POL00029380 KEL PorterS199P). An improvement to counter error handling was released in September 2010 (FUJ00081896 PC0198077).

92. Post Office staff in NBSC were aware of the branch problem from the outset, raising a service ticket with HSD on 15 April 2010. Information on all affected branches and the suggested workaround were sent to Post Office via MSU (FUJ00081868 PC0197797, 28/04/2010 17:39).

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93. I am asked about the entry of 22 April 2010 in PC0198077 which states *"The solution we thought we had for Hucclecote...has not resolved the problem, but has actually doubled the discrepancy"*. This was an update from Ibrahim at NBSC, who had tried to sort out the problem at Hucclecote before contacting Fujitsu. Fujitsu did not talk to the branch directly, but my update at 27/04/2010 17:35 was relayed to Ibrahim.

94. I am asked about the entry *"PC0198077 is B priority, whereas PC0197261 is C priority. Hence PC0198077 has a better chance of being delivered even though* [it's] *the same issue"* in PC0198077. It appears that two PEAKs had been sent to Development which required changes in the same area of counter error handling. Rather than using the earlier, lower-priority PEAK for delivery, Development wanted to use the later higher-priority PEAK, so it was more likely to be put forward for integrated system testing and release to the live estate.

95. I am asked about the phrase "*wider issue*" in PC0198077. The wider issue referred to was that there could still be discrepancies and other counter problems if a corrupt message was received from the central server and the counter did not take an appropriate error path. This was why it was important that the counter error handling fix was implemented.

96. I am asked about the phrase *"If this starts happening again, check whether CastClassExceptions are occurring again"* used in KEL acha5259Q. ATOS / HSD could use a tool provided by SSC, as detailed in the KEL, to check for these particular events, which would indicate that the central server was generating corrupt messages which might cause branch accounting problems or freezes. Restarting the appropriate central server as soon as possible would

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help prevent similar problems at other branches (there were multiple servers processing counter messages so one could be stopped and restarted without impacting the live service).

97. I am asked to expand on my comment on 17 September 2010 in PC0198077 that this *"problem has happened intermittently since April but never at the levels seen then. Being investigated on PC0204396. The good news is* [that no] *instances have been seen since this fix was applied"*. I assume I checked back at that point, or had been monitoring regularly since April, for these exceptions. Once the counter error handling fix was implemented, corrupt messages were handled sensibly and the counter would not freeze nor go down the wrong path.

98. Bug 3 affected a small number of branches in Jan/Feb 2013. The relevant documents are FUJ00081875, FUJ00085079, FUJ00084857 and FUJ00084827. When they rolled over the last stock unit into a new Trading Period and cleared Local Suspense of the accumulated losses/gains, the amount that was cleared was incorrect. It transpired that these branches had had the same problem a year earlier, but it had not been reported to Fujitsu then as far as I am aware.

99. I have tried to refresh my memory from the various PEAKs, KELs and emails but this was an extremely complex technical problem which I will struggle to make clear. In the simplest terms, a record related to Local Suspense, belonging to a subsequently deleted stock unit, had been left lying around and had been picked up when the same numbered Trading Period was reached the following years. NBSC initially investigated one branch reporting the problem, then raised a service ticket with HSD on 25 February 2013, who immediately

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passed it to SSC. It was soon obvious to me that it was a serious problem affecting the branch accounts and I would have notified the SSC manager and Problem Manager. There was a conference call with Post Office on 28 February 2013, by which time I had identified 14 branches affected. Fujitsu did not contact any of the affected branches and Post Office undertook to resolve the consequences at the branches and back-end systems, I having provided data about the errors at each branch.

100. I made various checks regarding some other undeleted records in the same table (not for Local Suspense) but concluded they had no impact on the accounts. I also identified how to recognise the problem from the Branch Trading Statements; my checks would not have found any affected branches which had subsequently closed. Steps were taken to clear the old records from the database (PC0224126 relates but has not been supplied to me).

101. There is a reference in PC0223870 to *"couple of new checks to the balancing process, to alert us if anything similar happens again"* (see entry on 24 October 2013 in PC0223870). This relates to what was a code change to try to spot anomalies in branch trading statements. The new checks were set out in KEL acha2230K (FUJ00085079): 1. check that the opening figures generated for the new Trading Period net to zero; 2. check that what is cleared from Local Suspense equals what was put in. These are the two checks that would identify the presence of the problem.

102. If these extra checks had been in place from the beginning of HNG-X we would have known about Bug 3 when it initially impacted branches, rather than depending on the sub-postmaster and Post Office reporting the problem to

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Fujitsu. It would not have prevented that problem from happening. The change displayed a message to the postmaster and logged a system alert to be picked up by SMC.

103. I am asked to explain in non-technical language what "*teething problems with archiving*" were, as referred to in the entry on 28 February 2013 in POC0223870. Records in some of the central Branch Database tables did not include a Year field, just a Trading Period (TP). So these records needed to be removed, by the automated archiving process, before the same TP was reached the next year. The strategy was to remove the records once the branch was 3 TPs ahead. However, the process did not work fully for records created by stock units which were subsequently deleted; this was noticed in April 2011 when an old record (not related to Local Suspense) caused a problem, though it had no impact on branches. Changes made to the archiving strategy in July 2011 were expected to remove any other old records belonging to deleted stock units but missed a small number of such records.

104. I am asked for my recollection of a conference call with Post Office on 27 February 2013. As set out above, PC223870 gives the date for the call as the 28th with a later call in March. I have no substantive recollection of the call beyond a vague memory that they were very unhappy that we had identified a bug.

105. I am asked to explain what steps Fujitsu and/or Post Office took to identify all branches affected by the bug referred to in this PEAK and KEL. For my part I looked at the database for all branches to see if there were any further instances

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of historic and persistent data of a similar type which would be indicative of the bug.

106. I am asked about FUJ00084857. The purpose of this email was to provide Andrew Winn at Post Office with a technical explanation of the bug and consequences. It seems likely that this came out of the second conference call with Post Office and my email to Andrew Winn was in response to a specific request because I would not have contacted Andrew Winn directly in other circumstances. I identified the common features of the subset of branches affected and the archiving strategies that were at the root of the problem. I see that I gave an example, with a diagram (not now included) to try to make the explanation clearer.

107. I am asked about the email at FUJ00084742. I have no recollection of this email, but I must have been involved in testing something on the RDDT test system. This was not within my role, so I do not now understand why I was involved. I do not think this email was to do with Bug 3.

108. I am asked about FUJ00084827. The extra checks referred to are those described in my paragraph 101 above. I am asked but cannot recall how I checked Andy Winn's conclusions following his analysis of the financial consequences of the affected branches. I think the phrase "*Politically, it may run and run*" likely related to Post Office's unhappiness that there was a bug.

Dalmellington bug / Branch Outreach Issue (bug 4 in *Horizon Issues*)

109. An outreach branch (Dalmellington) scanned in a pouch of £8000 cash received from its core branch. Two delivery receipts were printed as expected, then the Rem In screen was displayed; the user pressed Enter to print the Rem In slip

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and automatically add the cash to the system cash total. This should have been the end of the process, but the user was shown the Rem In screen again. If they pressed Enter again, another Rem In slip was printed and the system cash increased again. This happened four times at Dalmellington before they cancelled out of the process, meaning they would show a loss of £24000 when they balanced.

110. The problem happened when a user had logged on but Horizon timed out due to inactivity or lack of connectivity before the logon process was fully completed. When they logged back on, Horizon was in an inconsistent state which caused the Rem In screen to be redisplayed. This only affected manual Rem Ins which were used mostly for movement of cash between core and outreach branches.

111. While this was a problem which affected a number of branches, my view was that it would be obvious to the user, or anyone doing the balance and finding a large discrepancy, that it was caused by the duplicated rems. I remain surprised that it was not reported sooner. Sub-postmasters could and very occasionally did scan the same pouch twice so perhaps if it was reported to NBSC it was assumed that they had made an error. POL FSC could issue a TC to correct the branch accounts, and when I checked previous instances, I found this had happened in some cases. A code fix was produced which went live January 2016.

112. I am asked about an entry on PC0246949. There is a reference to the fact that when investigating, initially I could only check back two months because the relevant database table only held data for two months. I think potentially the bug may have caused discrepancies from the introduction of HNG-X in 2010.

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113. I am asked about an update to POL00029902. This update was not added by me but by Tony Wicks and I cannot speak to it save to say that I would assume his use of the phrase "high visibility" reflects the fact, as is apparent from the email chain referred to below, that Post Office and ATOS were aware of the problem.

114. I am asked about the email at 09:53 on 20 October 2015 (FUJ00085864) and the advice given to Post Office in that instance. I had closed PC0246949 (FUJ00085831) setting out that there was a possible avoidance action that the branch could take, which I could see had been done at other branches (not at Fujitsu's suggestion). This was to Rem Out the excess remmed in (while not actually removing any cash from the outreach branch), which would correct the system cash figure. I knew that the Horizon system did not match up pouches remmed out of core branches with those remmed into the outreach branches, so at the time it seemed reasonable, to avoid them rolling over with a large discrepancy. However, whether to deploy that approach was a business decision for NBSC/Post Office and I knew I must not suggest it to the branch. The underlying problem was still being investigated (PC0246997 POL00029902).

115. I am asked about my email at 11:11 on 26 October 2015 (FUJ00085864). Specifically I am asked to expand on the phrase *"I don't think it is realistic to expect postmasters to avoid the problem by not pressing Enter multiple times"* and to set out what I felt was required to rectify this issue. It needed a code fix so postmasters were not presented with the wrong screen. I am asked why I could not advise on how to deal with discrepancy the answer to which is that SSC were not allowed to advise sub-postmasters on business issues. The

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other alternative to be considered was for Post Office to issue a Transaction Correction.

116. I am asked about an email of 15:49 on 9 November 2015 said to be within FUJ00085864 but cannot see an email of that description in the material provided to me.

117. I am asked about my email of 11:31 on 9 November 2015 (FUJ00085864). I was responding to Steve Parker's request to 'put the issue into perspective'. I do not know to whom it was to be passed and my answer was not tailored for any particular recipient.

118. I am asked about my work as referenced in an email at 11:22 on 3 December 2015 (FUJ00085894). Initially I checked in the Branch Support Database transaction table for duplicate pouches being remmed in. This found four other affected branches in the previous two months. I realised the BLE files, going back several months, included pouch ids so could be scanned for duplicates. Initially I had only checked for duplicate cash rem ins but I rechecked for currency too. Finally, all BLE files from the start of HNG-X (2010) were extracted from archive and checked. Checks were also made going forward until the code fix was applied.

119. FUJ00085894 is an update to my manager of where I had got to by 3 December 2015. FUJ00085895 is a spreadsheet showing progress extracting and checking the files. FUJ00085865 is a sample of pouch info from the BLE data being examined. FUJ00085896 is the results of the analysis (pages 3 and 4 belong on the end of 1 and 2). This may not be the final version and I would probably have written a covering note

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120. I am asked about my email of 11 December 2015 (FUJ00085864). I wrote there *"Not sure who needs to know this"* because I had thought of a way to check further back than two months and wanted to inform my management. In the event we scanned for all cash and currency pouches back to 2010.

121. I am asked what information from these of my investigations was shared with Post Office and/or sub-postmasters. Post Office had my findings and followed up on them, on which point see the FUJ00085922 emails. I do not know what Post Office shared with sub-postmasters.

122. I am asked to explain HORICE (FUK00085886). HORIce was a tool that the Helpdesk could use to run a pre-defined query on the Branch Support Database. The purpose of the checks requested was to look for any duplicate pouches newly remmed in.

123. The fix for this bug was a counter code change to ensure the counter was reset to a tidy state if there was a system logout or inactivity logout before the post-logon checks had been completed. I can see from PC0246997 POL00029902 that rollout of that fix to live counters commenced 12 January 2016 and there were 400 counters outstanding by 14 January 2016.

Remming in bug(s) (bug 5 in *Horizon Issues*)

124. This relates to two separate bugs which had the same effect of accepting the same pouch twice. The bug referenced in PC00195511 (FUJ00083494) and PC00195380 (FUJ00081865) happened during the HNG-X pilot. It was possible for the user to use the PREV key to backtrack while remming in a pouch, and this would result in the Rem In being completed twice, causing a discrepancy.

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125. PC00203085 (FUJ00081870) relates to a situation where the user started the process on one counter but could not complete it, probably due to a printer problem, so the user remmed in on another counter but the process did complete on the first counter as well, causing a discrepancy. There was a check in the code to prevent this happening on two counters at once, but it had not been implemented properly. This bug too was present from the introduction of HNG-X in 2010.

126. I wrote that the *"problem can cause losses which are hard for the branch to identify"*. In fact, the branch could see from the transaction log or remittance report that the same pouch had been remmed in twice and I can see I was somewhat overemphasising the impact to encourage Development to deal with it as a priority.

127. The counter code fix for the first problem was applied around 19 April 2010. The second problem was solved by a central (BAL) fix applied on 23 January 2011.

128. I am asked to expand on "*in the meantime the branch will report any shortage*" in KEL acha4221Q. The KEL actually says "*will report a shortage*" meaning they will appear to have a loss, caused by the duplicate rem in.

129. I am asked to set out any steps Fujitsu took to identify whether this/these bug(s) had caused discrepancies in branch accounts that had not been reported by sub-postmasters or Post Office. I do not remember, but investigation of duplicate pouches in 2015 picked up those in the first set, and I wrote then (see FUJ00085894) "*The first set, highlighted in blue, was documented in KEL acha42210/ PC0195380, fixed around 19 April 2010. A check was run at the*

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time looking for duplicate pouches so POL FSC could be informed via BIMS (and there should be Peaks covering these)."

130. I am asked to set out any steps Fujitsu took to assist sub-postmasters in identifying when there had been a remming in error. However, I would expect NBSC to do that as part of their responsibility for business issues.

Remming out (Bug 6 in *Horizon Issues*)

131. In February 2007 there was a remming out bug in T30 software update. There is a good description of it in the Appendix at paragraphs 201 to 203. The software was regressed as soon as the problem was identified (which would have been within a day or so of it occurring) so no others would hit the same problem. The software was changed to fix the bug then tested and released. Steps were taken to identify all affected branches. I believe there are relevant KELs which are not now available to me.

132. I have no recollection of the May 2005 bug under this heading.

Recovery Issues (Bug 8 in *Horizon Issues*)

133. FUJ00081976 is PEAK PC0197769 which documents that I was assigned this PEAK, investigated it and referred it for a fix which was successfully applied and I then closed the PEAK.

134. Recovery was the process invoked if transactions had been started but the customer session was not completed (for example because of loss of comms with the data centre, or because a user logged on at a different counter without settling the session first). The next person logging back on to the counter would be asked whether the transaction had in fact been completed (e.g. had a cash

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withdrawal been handed to the customer). It was a complicated area for the users to negotiate.

135. This was not an instance of a failed recovery, it was successful, but the recovered transaction was assigned the wrong Trading Period. This was a bug, which occurred in April 2010 during the HNG-X pilot, which would cause a discrepancy. A fix was rolled out to the counters around 14 June 2010.

136. I do not remember specifically monitoring for these errors, nor whether Post Office were aware, nor what was done about the branch accounts (in this case they had a loss in one period but a corresponding gain in the next) but according to PC0197769 I talked to Gareth Jenkins about it and we intended to check for other instances. My final update on 23 June 2010, "We've already seen that this fix is being effective", suggests we had been monitoring.

137. I am asked what steps Fujitsu took to monitor failed recoveries. A daily report was produced. I cannot remember if this was there from the beginning of HNG-X or was introduced a little later. Failed recoveries were flagged as such in the Branch Database recovery table and this was scanned to produce the report. I cannot remember exactly what caused a failed recovery, rather than a successful one.

138. I am asked but cannot recall the process that would be followed once a failed recovery was identified. The Appendix suggests [at 218] the answer is documented in KEL acha959T which I do not have. SSC staff would look at each instance, so many PEAKs were raised for failed recoveries.

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Reversals (Bug 9 *Horizon Issues*)

139. I have no recollection of this bug, but I can see from the information in Appendix 1 that it affected reversals of Rem Ins for a short period in 2003. This would have been a relatively unusual operation, and it would have been obvious to the user and to anyone else checking the branch transactions that the reversal had not worked as it should.

Data Tree Build Failure Discrepancies (Bug 10 *Horizon Issues*)

140. According to Appendix 1, data tree build failures occurred in 1999-2000 and caused sizeable discrepancies in office snapshots at some branches. This was before I joined SSC. I have no recollection of any incidents involving data tree build failures until 2005-2006.

141. FUJ00086490 is PEAK PC0146170 which documents that in 2007 I was assigned this PEAK, investigated it and referred it for a fix which was successfully applied later that year after which I reduced the priority from A to B and subsequently closed the PEAK.

142. PC0146170 FUJ00086490 was raised in May 2007. SPM Declared cash / currency etc, then transferred out cash/currency or did some transactions. When they declared again (for the correct adjusted amount), the system reported a variance equal to the value of the transfer / transactions.

143. I'm not aware that this was ever reported to Post Office as a problem. If SSC had investigated an instance and found it had caused a discrepancy at a branch when they balanced, it should have been notified to Post Office via a BIM report, but I don't know if that ever arose. Although the variance, and potentially discrepancies, were calculated incorrectly, it was often obvious to the user that

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the system was wrong. If they did complete a balance with some transactions missing, those transactions should have been picked up in the next period.

144. I am asked whether I considered the workaround in KEL MScardifield2219S to be adequate. I did not. It was slightly better than having to reboot the counter. Initially the workaround was for the user to logout and back on, but that was not always sufficient to clear the problem, so this more complex method was suggested. I am asked but do not know how often the problem was reported.

145. I am asked to explain why a fix for this problem was not sent for development prior to May 2007. A similar problem had been seen during Post Office acceptance testing of the S80 release, in June 2005. PC0121925 POL00028867. As it occurred only once and could not be replicated, it was decided to document it (KEL MScardifield2219S FUJ00086474). It was then seen again in testing, in slightly different circumstances (PC0121925 04/07/2005). The fault was logged with Escher (the root cause appeared to be in their code, not Fujitsu's) but closed a year later with no indication of any investigation.

146. In the meantime, similar problems were reported by SPMs, and the helpdesk or SSC followed KEL MScardifield2219S with the avoidance action. But with increasing numbers of calls (from some time in 2006?), and after talking to the manager at branch 080940 which was frequently hitting the problem, I sent PC0146170 to 4th line support.

147. I did not record what I told the sub-postmaster was the cause of the problem but I would probably have said that it was a system error and we were going to investigate further.

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Girobank discrepancies (Bug 11 *Horizon Issues*)

148. I have no independent recollection of this bug. From Appendix 1 my understanding is that the issue was found to have occurred only between May and September 2000 and I understand that it was a Post Office business issue which did not cause discrepancies at branches.

Counter replacement issues (Bug 12 *Horizon Issues*)

149. I remember dealing with instances where counter replacement resulted in a new RiposteOnline message being written with the same message number as one created earlier, thus effectively overwriting the older message, and a 'self-originated message' event being generated. If it was a financial message, this would cause a discrepancy, and almost certainly an entry on one or more of the reconciliation reports. I cannot remember exactly what action was taken. Post Office would have been sent a BIMS report if there was a lasting financial impact for a particular branch but I do not know whether it was ever flagged as an ongoing problem. I remember steps were taken to stop it happening but I cannot remember when it stopped.

150. The bug referred to in PC0153851 from February 2008 (as described in paragraph 271 of the Appendix) is a completely different problem to do with a Riposte index, not message replication. Again, I remember seeing a very small number of problems caused by incorrect Riposte indexes during the lifetime of Legacy Horizon. SSC could rebuild the indexes (and I think, but am not certain, that they were rebuilt nightly anyway). As this was seen as a transient problem it may not have been investigated by Escher or FJ development.

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Withdrawn Stock discrepancies (Bug 13 *Horizon Issues*)

151. Branches were given plenty of notice by Post Office (both online memos and in weekly paper publication) that they should rem out and return stock that was being withdrawn, but Horizon Online did not handle properly any remaining stock that no longer had any valid transaction modes. I think that in some cases Post Office reactivated withdrawn products at affected branches (via reference data) so they could rem out the stock.

Bureau discrepancies, Phantom transactions and Concurrent log ins (Bugs 14, 15 & 18 *Horizon Issues)*

152. I have no independent recollection of Bugs 14, 15 or 18. Looking at the information about them now, I note for example, that Bug 18 could only be in play in circumstances where there were concurrent logins by the same user at multiple counters and that would be evident.

Post & Go/TA discrepancies in POLSAP (Bug 19 *Horizon Issues)*

153. FUJ00085483 is PEAK PC0220393 which I note from the document was assigned to me on 31 August 2012. After the solution was found I made a note that we strongly recommended that POL monitor for the problem at other branches so that the same correction could be applied.

154. I cannot remember sufficiently the interactions between the Post and Go terminals and the Horizon system. The problem here was that the SPM was only prompted (and able) to associate a PG terminal with a stock unit when a cash Transaction Acknowledgement (TA) was received for that terminal. These TAs came via central systems, there was no direct feed from the terminals into

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Horizon at the branch. So PG terminals not doing cash transactions (I assume they were card only) would not have an associated stock unit.

155. It seems unlikely to me now that this would have any direct impact on the branch accounts, as there was no cash element, unless the PG stock was managed on Horizon. I do not recall any branch-raised calls about this. It did however impact POLSAP as it held up all the data for affected branches.

156. I cannot remember how many branches there were with non-cash PG terminals but it was a small number (tens rather than hundreds).

Bureau de change (Bug 23 *Horizon Issues)*

157. POL00001264 is PEAK PC0129767 which shows that this matter came to me on 6 December 2005 and that I considered that the system was working as intended but the user had made an error. I noted that the system could be simplified or better explained and I addressed how that might be progressed recognising that it was a decision for Post Office and not for me.

158. KEL AChambers2252R (POL00001272) gave advice on reversing currency transactions and was raised because of PC0129767 (POL00001264). An SPM had reversed a currency sale but when they balanced, found they had a surplus of Euros and a shortage of cash. So they accepted the surplus (which put the holding up to the correct level on the system, and reduced the cash shortage), but they were still short by the margin on the transaction.

159. I am asked to explain why I considered there to be user error. The session in which the currency was sold would have consisted of three transactions, something like:

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Euros -£100; Margin -£10; Cash £110

160. To reverse the sale, the SPM had to enter the transaction id. I cannot remember exactly how they found this but possibly via the session id (printed on the receipt) and then they would be shown the transactions in the session? The first two transactions had the same id (ending -2), because they are linked, and the cash settlement was different (ending -3).

161. In this case the SPM entered the id ending -3. This wrote a pair of reversal transactions Cash -£110; Cash £110 and printed a receipt showing this. If they had selected -2, both the Euros and Margin would have been reversed, and settled to cash. This was the same for all reversals, not just currency.

162. It seemed appropriate therefore to categorise this as “User Knowledge”.

Wrong Branch Customer Change Displayed (Bug 24 *Horizon Issues)*

163. POL00001253 is PEAK PC0129791 which shows this matter was assigned to me on 7 December 2005 and that I recognised that the problem should have been cured by a reference data fix that had been rolled out but had subsequently been removed. It was reapplied on 8 December 2005. It is recorded that I explained the situation to the postmaster. This is also reflected in the associated KEL which is at POL00001210.

164. I am asked to consider POL00001210 and POL00001253. If the clerk used the Quantity button in Smartpost (for example to print multiple mails labels), it was not reset to 1. Sales of other items might be multiplied unintentionally, and/or if the customer handed over £10 say, and the clerk entered this on the system and let the system calculate the change, it would be treated as £20.

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165. It seems highly likely that this would have happened and not been noticed at some branches, and they would have made a loss with too much change given to customers. Or customers may have been overcharged and the branch made a gain.

166. I do not know whether Post Office were told of this problem (originally reported on PC0128264 04/11/2005).

167. I am asked how many branches were affected by not being included within the fix on 28 November 2005. My answer is that all branches were affected. Group 111111112 was not a subset of branches, it was a reference data group. A complete set of reference data for Smartpost existed in two sets, one of which was active at any one time (so changes could be prepared and delivered to all counters, then all switched to the updated version at the same time). The fix applied to the active ref data group 111111113 on 18th Nov was lost when group 111111112 became active on 28th Nov.

168. I am asked what I told the sub-postmaster (my entry of 7 December 2005 in POL00001253) and that was probably that the system was wrongly using the Smartpost quantity for subsequent transactions within the same session, and they should reset Quantity to 1 before continuing.

Lyca top up Bug 25 *Horizon Issues)*

169. I have no recollection of this bug.

TPSC250 (Bug 26 *Horizon Issues)*

170. TPSC250 was one of the suite of daily reconciliation reports, and any entries on the report would have a PEAK raised for them by MSU and then SSC would

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investigate. There were several different causes for these entries over the life of Legacy Horizon, some of them bugs. If investigations found that the problem had caused an incorrect discrepancy at a branch, Post Office were notified via a BIMS report.

171. Mr Justice Fraser made reference to the specific postage labels problem which was the underlying cause of many of the entries. Having considered his conclusions, I would clarify that the report entries per se did not cause discrepancies, but the separate bug which caused a negative label to be printed did cause Post Office a loss, with either the branch or the customer making a gain.

172. In rare circumstances where a parcel already had stamps or prepayment attached, and postal service options (e.g. additional insurance) were selected and deselected to first exceed and then be less than the prepayment, a negative value postage label was printed. When the customer session was completed, it would show that the excess cash should be handed back to the customer. If the clerk did this, the branch accounts were all correct and consistent. If they did not, thinking that once the stamps were stuck on the customer had committed to spending them, then the branch made a gain of the amount; the branch accounts showed what should have happened.

173. The report entry occurred because at the end of the day, all the transaction absolute values (i.e. ignoring sign) were added together on the branch computer and compared against the total on the data centre database. This was done for all branches, every single day, to look for any anomalies. These were the counter reconciliation figures and they were only used in this cross-checking,

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not in the branch balancing process. The reconciliation totalling done at the branch did not handle the negative-value postage labels correctly and so the total did not match that at the data centre, which was correct.

174. The balancing process did handle the negative values correctly and so this particular bug had no impact whatsoever on branch accounts, save to the extent as described above.

175. There are certainly other PEAKs relating to TPSC250 entries (but insufficient information in Appendix 1 for me to expand) and in some cases there will have been a genuine problem which impacted the branch. The whole point of the suite of reconciliation reports was to make sure anomalies were investigated.

TPS Bug 27 (*Horizon Issues)*

176. I am not sure why this is described as TPS (which was the name of one of the central databases). The bugs discussed under this heading in Appendix 1 appear to relate to corrupt messages written by Smartpost code, which caused entries on one or more of the TPSC Reconciliation Reports and so were all investigated by SSC. In a subset of instances, this bug could impact branch accounts. I cannot remember whether the root cause was ever found or whether there was any attempt to fix it.

Drop and Go (Bug 28 *Horizon Issues)*

177. I have no knowledge of what is referred to as bug 28 which I see is said to have occurred in 2017 which was after I had left Fujitsu.

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Further Questions

PEAK PC0229446 (FUJ00083493)

178. I am asked to explain the nature of the problem reported in this PEAK. The sub-postmaster reported that he had a cash declaration problem and was losing a lot of money. The only specific example reported via the helpdesk was a loss of £6000 at 12:34 on 12 November 2013.

179. I extracted the cash transactions stored in the branch support database for this branch / stock unit since the start of the balance period on 7 November 2013, and put them into an Excel spreadsheet, also the cash opening figure of £60,125, and added a column to calculate the system cash position after each transaction. I then compared the system cash position with the amount they Declared they were holding (normally done at the end of each day). The difference was called a Variance. I think there was an option for them to view the Variance each time they Declared cash.

180. I could see that the Variance reported each time by the system had been correctly calculated, based on the cash transactions recorded and the declarations made. In my response I gave the specific figures for 7 November 2013, after the rollover, showing that at 15:29 they apparently had £5,528.60 less than the system expected, with just three (or three types of) transactions carried out in the new period.

181. I would also have checked for any system events and reconciliation report entries for the branch and looked for any obvious duplication of transactions.

182. I documented what had happened on the simplest day as an example. At the time it did not appear necessary to document the detail of what I found on the

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subsequent days but I could have made it clearer that I had checked all the Variances for the week and found that the system had calculated them correctly, based on what had been input at the branch.

183. I am asked to expand on my entry *"I can't tell why the declared cash doesn't match the expected cash figure, the branch need to make sure that what they have recorded on the system is correct, and investigate the anomalies"* and to explain how the branch could have investigated further. The system cash figures were consistent. If they were wrong, then either the Declaration amount recorded on the system (and printed on the Declaration report) did not match what the sub-postmaster thought they had declared, or the transactions were not an accurate record of what had been done at the branch. This could be user error or potentially system error but could only be identified by the branch. So looking now at the situation as it was on 7 November, the branch should have been able to determine whether they had actually remmed in £22,300 and transferred out £6,500 and had one cash receipt of £11,183.60. I was not able to see whether they had £81,580 cash in the drawer, only the branch could confirm that.

184. I have noticed that I made a transcription error in the figures: I said the system cash total was £87038.60, should have been £87108.60. That error does not change the conclusion or the other figures.

185. I am asked to explain why I updated the root cause to "General – User". There was no evidence to suggest there was any kind of bug or system error. As I have explained above, in such circumstances I had no further resource through which to progress an investigation. In those circumstances I would have

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considered that user error was the most probable cause. I would accept I might alternatively have expressed this as the being an inference from the absence of evidence of system error.

PEAK PC0208335

186. I am asked about FUJ00086720 and specifically asked to explain what was the *"known problem with declarations containing withdrawn products"*. The answer is Bug 13 in *Horizon Issues*, as discussed above. I am asked why it was anticipated that this problem could affect 10 branches per week *"over the next few months"*. I could see the declarations, coming up to a year old, in one of the database tables, so could estimate which branches might hit the problem and when. I am asked with reference to my entry at 14:42 on 14 February 2011, how was the *"old declaration...removed from branch 169217"*. NBSC advised the branch on how to make a zero stock declaration, which would remove the old data. This did not actually affect their stock levels in any way, it just meant that when they balanced they would not be forced to Declare Stock (often they used Adjust Stock instead, if they did want to Declare Stock then they would do a new declaration with the correct figures, as normal).

187. I am asked whether I consider this PEAK evidenced a software problem and, if so, how it fixed. I do think there was a software problem in that the archiving being done for the table did not clear out old declarations as it should. A fix was made to correct the archiving criteria, but in the short term the old declaration records were deleted from the database. I am asked but do not know why the PEAK was closed as *"Administrative Response"*. It was not my entry.

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PC0055072 and AChambers232K (FUJ00059003 and FUJ00077691)

188. I am asked to explain the nature of the problem described in this PEAK and this KEL. I have almost no recollection of this, it must have been one of the first service tickets I investigated. My response on PC0055072 FUJ00077691 on 5 October 2000 explains that AssetManager (part of Riposte, but not used by Horizon) was causing a critical system event when trying to start each night. As AssetManager was not used, this had no impact on the counter operation, except possibly on performance. PC0055072 says the problem was seen on only two counters (out of approximately 35000), I do not know if this remained the case.

189. I am asked why it was not investigated further. Quite a lot of investigation was done within Fujitsu and it was sent to Escher, to investigate why AssetManager was trying to start on this counter when the DisableAssetManager flag was set, but eventually it was closed without a fix in January 2002.

JBallantyne5245K, PC0083101 (FUJ00083631 and FUJ00059049)

190. I am asked to consider FUJ00059049 and FUJ00083631. FUJ00059049 KEL JBallantyne5245K is the same document as FUJ00083878 and relates to the Callendar Square bug which I have discussed above. FUJ00083631 PC0083101 reports a single instance of the Riposte Lock event while one of the overnight processes was running, not when anyone was logged on and balancing. The process completed successfully after Riposte was restarted automatically a couple of hours later.

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PC0074630 (FUJ000821)

191. I am asked to comment on FUJ00082021. This was a fairly common user error, which I understand is documented in KEL AChambers037R (with which I have not been provided). At the end of each day, all the cash in each stock unit had to be counted and entered (by denomination) using the Declare ONCH (overnight cash holding) function. The clerk also had to enter a two-digit Declaration Id. This allowed branches with shared stock units to count and report the cash in each separate till, by using different Ids. The system totalled the declarations for each stock unit and sent the information overnight to SAPADS. On Wednesdays, as part of the balancing process, Declare Cash was used as well, or instead. This was also included in the SAPADS totals. If the same cash was included in two declarations with different Ids, it was counted twice. In PC0074630 FUJ00082021, on Wednesday the cash was included in ONCH Id 01 (made by the clerk), then the SPM Declared Cash for balancing using Id 03. So the amount notified to SAPADS was twice what it should have been. This did not have any impact on the branch accounts (the ONCH declarations were not used for balancing) but branches might be told by Post Office that they were holding too much cash. The system was working as designed and agreed by Post Office.

192. I am asked about but have no recollection of my conversation with Deirdre Conniss regarding this incident. Nor can I assist as to how many branches were affected but I do recall it continued to be reported as a problem from time to time. I am asked about my comment *"May require changes to PO documentation"*. I thought perhaps the Post Office's training and/or Operations Manual might need clarification to help SPMs avoid this mistake.

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Escher / Riposte

193. I am asked how SSC investigated problems that were suspected to relate to third-party software such as Riposte. I have explained this above in respect of Callendar Square. Escher supplied Riposte. SSC investigated problems and passed them on to 4th line, who would decide whether the fault lay in Fujitsu code or in Riposte. I had no direct contact with Escher and cannot speak to the relationship between Fujitsu and Escher.

Remote Access

194. I am asked about the privileges I and other members of the SSC had with regard to the viewing and/or modifying of live branch data. All members of SSC were able to view live branch data all the time I worked in SSC, and we could not have done our job otherwise. All members of SSC had access to tools/functions which could be used to insert extra transactions, and at HNG-X (2010 until unknown end date) to delete or modify them. We did not have access to the Desktop view of Horizon that the branch users had, except on completely separate test systems.

195. I am asked about vetting for this purpose. I was vetted before joining SSC but cannot remember the details of that; I assume that was standard practice but do not know.

196. I am asked to explain the extent of those access rights. For Legacy Horizon, SSC could retrieve the messagestore for any branch, from the copies held at the data centre or from the counter itself, and examine the transactions and messages written when stock units were balanced and when cash accounts /

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trading statements were produced. For HNG-X, we could extract transaction data from the Branch Support Database (BRSS) or Branch Database (BRDB). For both systems, we developed various tools to facilitate this, for use both within SSC and by other support teams.

197. With Legacy Horizon, it was possible for any SSC technician to append messages to the messagestore for any branch counter. It was not possible to alter any entry that had already been written, nor to delete anything. Messages (written in something similar to XML) could be hundreds of characters long and had to be correctly constructed or would cause harvester errors subsequently. We would usually try on a test system (we could load a full branch messagestore onto a test counter) before applying to the live service, to ensure it had the desired effect.

198. At HNG-X, initially SSC staff (though possibly not all) had access to the APPSUP role on the new BRDB and BRSS databases, though we would not have used it when viewing data (normally on BRSS). If used, this gave full modify/delete/insert access to the tables holding branch transactions. We also had access to the correction tools written by Development, which SSC could use in exceptional circumstances to add to the main transaction table (which would affect branch accounts), and to update entries in the failed recovery table (with no impact on accounts).

199. I am asked whether a person using a branch terminal would be expressly notified by Horizon if changes were made using these access rights. It is hard to remember now what was done so long ago. If the branch had raised the service

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incident in the first place, via HSD, then I would probably have told them if I was going to make a change to their system to correct the problem. If they had not raised it, but instead we knew there was a problem because of a Reconciliation Report entry and the branch had not yet done their balance, I probably would not have contacted the branch, but would have informed my manager or the Fujitsu Problem Manager. If the problem was notified to the Post Office and they had authorised the change, I would expect Post Office to decide whether or not to notify the branch.

200. I am asked about the audit data that would be kept to record any changes made using these access rights. In Legacy Horizon, the messages themselves were visible in the messagestore and would be included in the audited data archive for the branch. We would usually create the message using a non-existent counter number, e.g. 99, and the username SSC, and include a comment field with the PEAK reference. This was my normal practice but it was not enforced. In HNG-X audit files were created when the correction tools were used. The HNG-X audit files were held in filestore on one of the servers. I am asked whether they could be modified manually. I assume, but don't know, that they could not subsequently be deleted or modified.

201. I am asked whether any procedures and/or checks were in place at different times to control remote access. An operational change request would have to be raised and approved first. The approvers would include the SSC manager, probably Post Office, a Fujitsu Problem Management and possibly others – again this may have varied with the different systems over the years and I cannot be more specific. Scripts and before / after data would be collected and saved

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(on the associated PEAK I think, or possibly on the change request document). A second SSC technician would have to witness the change being made. I am asked who was responsible for ensuring compliance with these procedures and I do not now know but it was probably the SSC manager.

202. I am asked whether I consider that the use of remote access could affect the reliability of branch accounts. Viewing the data for support purposes had no impact on the accounts. On the occasions that I added in extra messages that affected the accounts, or was aware of anyone else doing so, this was done to put the accounts into the state they would have been in if the system had worked as it should have in the first place. For example, very rarely a branch was able to Transfer In a single transfer (of cash from another stock unit) twice, resulting in a loss and Receipts and Payments mismatch when they balanced. If they had not already completed the balance, SSC might write a pair of equivalent but opposite messages to 'undo' the second Transfer In.

203. APPSUP was an Oracle database role which allowed users to update, insert and delete records in database tables. I am asked for which period of time SSC users had access to APPSUP. At Legacy Horizon, the set of central databases didn't contain branch accounting data, but extracts which were sent on to Post Office and APS clients such as BT or banking clients. SSC could look at data in these databases using the default, read-only role, but very occasionally it might be necessary to make some change (possibly to correct an error introduced by a bug or incorrect Post Office reference data). The user would switch to role APPSUP to make the change. This would not affect the branch accounts.

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204. At HNG-X, initially SSC staff also had access to the APPSUP role on the new BRDB and BRSS databases, though we would not have used it when viewing data (normally on BRSS). I don't remember all the details of PC0208119 FUJ00089756, nor when APPSUP access to the BRDB was removed, but we should only have been using the SSC role which would allow us to use the correction tools written by Development.

205. I am asked about FUJ00089756 and my phrase "*When we go off piste we use appsupp"*. I am asked about the circumstances to which I was referring. Potentially there might be a need to make a change to other BRDB tables (not holding branch transactions) where no tool had been provided, possibly quickly if, for example, a branch could not trade at all until the change was made. I cannot remember now whether this ever happened in practice but I think not; in the Peaks that I have seen recently where records did need to be removed, for example old declarations or Local Suspense information not removed properly by archiving, Development provided a script to be run.

206. I am asked what security and/or audit procedures were in place when APPSUP was used. An MSC would be raised and approved prior to any change, and a log kept of what was done (stored on the MSC or on the associated Peak - I cannot remember which). As I have said, it was the practice that a colleague would witness any alteration. There may well have been more data which recorded SSC actions which I no longer recall.

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General

207. I am asked questions as to the overall robustness of the Horizon system. I have dealt with many of the specifics above. I repeat the point that the pilot and introduction of HNG-X was difficult and various problems were identified in that period of early to mid 2010, and I would not say the system was fully robust during that period. I cannot speak reliably to the first months when Legacy Horizon was being rolled out when I was new to SSC and still learning about the system. Otherwise, I considered that during my time in SSC, the system was relatively robust, which is not to suggest, as will be clear from my discussion above, that there were no bugs: it was our job in SSC and our expectation that we would investigate and discover bugs that required fixes.

208. I am asked whether I believe that sub-postmasters had access to adequate advice and assistance in how to use the Horizon IT System. I do not know whether they did. I did not have much direct contact with sub-postmasters though I would try to talk to them to explain a user error (if it was one) or that there was a system problem, rather than just passing the call back to the helpdesk, and they often seemed grateful for this contact.

209. I am asked what I think was/were the cause(s) of the problems experienced in using the Horizon IT System. I do not know and I wish I did. Throughout my time in SSC, I spent a long time looking for and hypothesising possible causes of problems. Some of the bugs discussed here, and others, almost certainly caused losses or gains at some branches on some occasions. But I never found a bug within Horizon which would cause continuing losses, week after week, at the same branch while leaving no sign of the problem in the branch accounts or

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the Horizon reconciliation reports. I do not know whether discrepancies reported to Post Office via BIM reports were always resolved with branches, nor whether SSC/MSU always reported these in a way that made it clear that there had been an impact on a branch.

210. Finally, I think it was extremely hard for sub-postmasters to check that the data entered on the system always fully matched what had actually taken place at the branch and it seems likely to me that some of the problems were down to transposed digits and other inadvertent errors, which could then not be traced at the end of the week or month.

211. I am asked whether with hindsight there are changes to the support service provided by Fujitsu would have improved the assistance provided to sub-postmasters. I think that there was a problem with the way in which problems were investigated as separate incidents without greater oversight of the wider position. As I have said, when I was given something to investigate my scope and the range of evidence available to me was limited. There was a division between the technical operation of the Horizon System and the operation of the business of running branches which meant that it was not apparent to me that anyone had the oversight and control to investigate across that. An alternative approach might have been to create a further role for people knowledgeable about both the Horizon system and Post Office business who could go to branches to help investigate any problem, whether suspected to be a fault in the system or with business processes.

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212. A point of frustration with the system, was that the users, namely the sub-postmasters, were not our clients and there was a practical limit as to the extent to which we could work together with them to investigate problems.

Statement of Truth

I believe the content of this statement to be true.

Signed: GRO

Dated: 15/11/2022