



## **Historic KELS Determination and Closure**





## Table of Contents

1	Introduction.....	2
2	Change log .....	3
3	Authorisation log.....	4
4	Summary of the Historical KELS.....	5
5	Historical KELs .....	7
6	Appendix .....	71

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## 1 Introduction

The following report is a summary of the determinations of the historical known error logs (KELS). These KELS were identified during the Post Office Horizon IT Inquiry as having potential Postmaster detriment. Each historical KEL was investigated, and analysis was performed by the Post Office and Fujitsu to determine if the historical KEL needed retesting. This document forms part of the signoff, along with the Closure Test Report from Fujitsu and POL, with the expectation that it will be approved by the Postmasters.

Please see section Appendix 5 - 'POL\_Test Closure Report - Historical KELS v0.6' and 'TSTOTREP4269.DOCX' in conjunction with this document.

To ensure confidence where retesting was required for a KEL, the retesting was performed diligently step by step, using the POL and Fujitsu standard testing methodology, capturing the appropriate evidence, to validate that the KEL does not exist in the current Horizon platform.

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## 2 Change log

Date Issued	Version	Description of Change	Author
16/06/21	v0.2	Initial draft	Kayzy Thandi
18/06/21	v0.3	Comments by BDR	Kayzy Thandi
23/06/21	v0.4	Incorporated comments by BDR and changes to format	Kayzy Thandi
28/06/21	v0.5	Changed version to v0.5	Kayzy Thandi

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### 3 Authorisation log

Project Name: Historical KELS		Project Manager: Harshwardhan Soman
Start Date: 10 <sup>th</sup> May 2021		Completion Date: 25 <sup>th</sup> May 2021
Name: Simon Oldnall	Name: Harshwardhan Soman	Name: Sree Balachandran
Role: POL Horizon IT Director	Role: POL Head of QA	Role: POL Head of Postmaster Experience
By signing this document, I acknowledge that I have delivered all the stated deliverables at the agreed to quality levels.	By signing this document, I acknowledge that I have delivered all the stated deliverables at the agreed to quality levels.	By signing this document, I acknowledge that I have delivered all the stated deliverables at the agreed to quality levels.
Signature:	Signature:	Signature:
Date:	Date:	Date:

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## 4 Summary of the Historical KELS

Number	KEL Number	Historic KEL	Status
1	01	Receipts and Payments mismatch bug	Ready for Signoff
2	02	Callendar Square/Falkirk bug	Ready for Signoff
3	03	Suspense Account bug	Ready for Signoff
4	04	Dalmellington bug/Branch Outreach Issue	Ready for Signoff
5	5.1	Remming In bug – Issue 1	Ready for Signoff
6	5.2	Remming In bug – Issue 2	Ready for Signoff
7	6.1	Remming Out bug – Issue 1	Ready for Signoff
8	6.2	Remming Out bug – Issue 2	Ready for Signoff
9	07	Local Suspense Account issue	Ready for Signoff
10	8.1	Recovery Issues – Issue 1	Ready for Signoff
11	8.2	Recovery Issues – Issue 2	Ready for Signoff
12	09	Reversals	Ready for Signoff
13	10.1	Data Tree Build Failure discrepancies – Issue 1	Ready for Signoff
14	10.2 (i)	Data Tree Build Failure discrepancies – Issue 2(i)	Ready for Signoff
15	10.2 (ii)	Data Tree Build Failure discrepancies – Issue 2(ii)	Ready for Signoff
16	11.1	Girobank discrepancies – Issue 1	Ready for Signoff
17	11.2	Girobank discrepancies – Issue 2	Ready for Signoff
18	11.3	Girobank discrepancies – Issue 3	Ready for Signoff
19	11.4	Girobank discrepancies – Issue 4	Ready for Signoff
20	11.5	Girobank discrepancies – Issue 5	Ready for Signoff
21	11.6	Girobank discrepancies – Issue 6	Ready for Signoff
22	12.1	Counter-replacement issues – issue 1	Ready for Signoff
23	12.2	Counter-replacement issues – issue 2	Ready for Signoff
24	12.3	Counter-replacement issues – issue 3	Ready for Signoff
25	13	Withdrawn stock discrepancies	Ready for Signoff
26	14.1	Bureau discrepancies – Issue 1	Ready for Signoff
27	14.2	Bureau discrepancies – Issue 2	Ready for Signoff
28	15.1	Phantom Transactions – Issue 1	Ready for Signoff
29	15.2	Phantom Transactions – Issue 2	Ready for Signoff
30	15.3	Phantom Transactions – Issue 3	Ready for Signoff
31	16.1	Reconciliation issues – Issue 1	Ready for Signoff
32	16.2	Reconciliation issues – Issue 2	Ready for Signoff
33	16.3	Reconciliation issues – Issue 3	Ready for Signoff
34	16.4	Reconciliation issues – Issue 4	Ready for Signoff
35	16.5	Reconciliation issues – Issue 5	Ready for Signoff
36	16.6	Reconciliation issues – Issue 6	Ready for Signoff
37	17	Branch Customer discrepancies	Ready for Signoff
38	18.1	Concurrent logins – Issue 1	Ready for Signoff
39	18.2	Concurrent logins – Issue 2	Ready for Signoff
40	19	Post & Go/TA discrepancies in POLSAP	Ready for Signoff
41	20.1	Recovery Failures – Issue 1	Ready for Signoff
42	20.2	Recovery Failures – Issue 2	Ready for Signoff
43	20.3	Recovery Failures – Issue 3	Ready for Signoff
44	21.1	Transaction Correction Issues – Issue 1	Ready for Signoff
45	21.2	Transaction Correction Issues – Issue 2	Ready for Signoff
46	21.3	Transaction Correction Issues – Issue 3	Ready for Signoff
47	22.1	Bugs/errors/defects introduced by previously applied Peak fixes – Issue 1	Ready for Signoff
48	22.2	Bugs/errors/defects introduced by previously applied Peak fixes – Issue 2	Ready for Signoff
49	22.3	Bugs/errors/defects introduced by previously applied Peak fixes – Issue 3	Ready for Signoff
50	23.1	Bureau de change – Issue 1	Ready for Signoff



## Historic KELS Determination and Closure v0.5 Draft 28th June 2021

51	23.2	Bureau de change – Issue 2	Ready for Signoff
52	23.3	Bureau de change – Issue 3	Ready for Signoff
53	24	Wrong branch customer change displayed	Ready for Signoff
54	25	Lyca Top Up	Ready for Signoff
55	26.1	TPSC 250 Report – Issue 1	Ready for Signoff
56	26.2	TPSC 250 Report – Issue 2	Ready for Signoff
57	26.3	TPSC 250 Report – Issue 3	Ready for Signoff
58	26.4	TPSC 250 Report – Issue 4	Ready for Signoff
59	26.5	TPSC 250 Report – Issue 5	Ready for Signoff
60	27	TPS	Ready for Signoff
61	28	Drop & Go	Ready for Signoff
62	29.1	Network Banking – Issue 1	Ready for Signoff
63	29.2	Network Banking – Issue 2	Ready for Signoff

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## 5 Historical KELs

The sixty-three historical KELs are detailed in the following pages, outlining the system affected by the issue, when the issue was discovered, what were the events around the issue, the technical underlying cause of the issue, and if testing is required. For any testing commentary, please refer to the embedded test completion reports in the Appendix of this document.

### 5.1 01 Receipts and Payments Mismatch Bug

Item	Component	Commentary
5.1.1.	Horizon System Affected	Horizon Online
5.1.2	Description	The bug causes a problem with balancing, resulting in a mismatch between Payments and Receipts which meant that they did not match correctly when moving discrepancies into Local Suspense, which resulted in discrepancies becoming "lost".
5.1.3	Dates	2010
5.1.4	What Happened	<p>Branches must rollover into a new Trading Period (TP) every month and may not rollover with an unresolved discrepancy. If discrepancies were found when rolling a stock unit (SU), Horizon prompted the user to decide to either:</p> <ul style="list-style-type: none"> <li>a) Move the discrepancies into the Suspense Account (which aggregated all discrepancies into a single gain or loss for a TP, and which then allowed rollover to complete), or,</li> <li>b) Cancel the rollover.</li> </ul> <p>The bug however allowed Postmasters to rollover with an unresolved discrepancy. The problem only arose in a branch where all the following conditions were true:</p> <ul style="list-style-type: none"> <li>• The branch had an unresolved discrepancy, and,</li> <li>• The branch cancelled (as in option <b>b</b> above) the completion of the TP; i.e. did not transfer the discrepancy to the Suspense Account (option <b>a</b> above), and,</li> <li>• Within the same session the branch then continued to rollover to a new Balance or TP.</li> </ul> <p>A bug in the code meant that when Cancel was pressed (option <b>b</b>) the discrepancy was cleared, and as it was not moved into the Suspense Account, an accounting error occurred. If the user did not check the Final Balance Report then they may not have been aware that there was now a receipts and payments mismatch, although the discrepancy would re-appear and be recorded on the next TP.</p>
5.1.5	Technical Analysis	<p>The functionality of Rollover has changed since this KEL occurred, and the current codebase no longer acts in the same manner. Additionally, the Suspense functionality is no longer performed in the same manner either, or how this activity now occurs has also changed.</p> <p>This functionality can be tested - a Rollover can be performed in the test environment, and it can be checked if the Cancel button functions correctly.</p>
5.1.6	Testing Required?	Branch Trading Statement as part of Branch Balancing. The branch should be unable to roll over without transferring the discrepancy to the suspense account. This Process is enforced by Horizon and there is no mismatch between receipt and payments.



Historic KELS Determination and Closure v0.5 Draft 28th June 2021

5.1.7	Status	READY FOR SIGN OFF
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## 5.2 02 Callendar Square / Falkirk bug

Item	Component	Commentary
5.2.1.	Horizon System Affected	Legacy Horizon - Riposte
5.2.2	Description	A software bug in Riposte could cause Horizon to no recognise transfers between different SUs so that information recorded on the sending terminal was not passed to the receiving terminal. If the Postmasters re-entered the transfer on a different terminal, then the transfer was registered twice resulting in a discrepancy in the branch accounts.
5.2.3	Dates	2000 to 2010
5.2.4	What Happened	<p>A bug in the Riposte software sometimes had the effect of preventing a counter from writing messages, either those being replicated to it, or those generated on that counter.</p> <ol style="list-style-type: none"> <li>1. When the Postmaster completed the 'Transfer In' on one counter, the confirmation message indicating that this had been processed was not replicated to the other counters.</li> <li>2. The problem was not always immediately obvious to the Postmasters/counter user and could result in them attempting to re-enter the transfers which they believed they had done but could see were missing.</li> <li>3. Since the transfer had not been replicated, the Postmaster was then able to repeat the same 'Transfer In'.</li> <li>4. When the counter was re-started, all repeat instances of the Transfer In would become visible, which would cause errors in the accounts.</li> <li>5. Attempting to balance the branch when a counter was in this state could also result in errors.</li> </ol> <p>In the Callendar Square case, the issue was that the recording of the case being transferred into the SU was not being made visible to other terminals, and so it was possible to repeat the Transfer In on another terminal. The Riposte issue would mean that the terminal on which the first Transfer In was recorded was no longer operable until it was restarted.</p>
5.2.5	Technical Analysis	<p>The root cause of this defect was a bug in the Riposte code. Riposte was counter code, which was specific to Legacy Horizon, and how Horizon functioned prior to being replaced by Horizon Online. This code has since been replaced. There is still some legacy code (in the form of "agents" - these are code components which are used for communication between the counter applications and the databases) which remain, but this has been repurposed to communicate with the Branch Database (BRDB). These agents are no longer the same as they were in Legacy Horizon.</p> <p>This scenario can no longer be reproduced in Horizon Online, and the system no longer functions in this manner.</p>
5.2.6	Testing Required?	No testing can be performed for this scenario.
5.2.7	Status	READY FOR SIGN OFF



### 5.3 03 Suspense Account bug

Item	Component	Commentary
5.3.1.	Horizon System Affected	Horizon Online.
5.3.2	Description	Historic data from 2010 reappeared in some branches' accounts for the same monthly TP in 2011 and 2012. Postmasters then re-settled those same entries to clear their Local Suspense accounts in 2011 and 2012 despite having settled them in 2010. Some branches benefitted from the same gain three times or suffered from the same loss three times.
5.3.3	Dates	2011 and 2013.  Although branch account data from 2010 was involved, the bug arose in 2011.
5.3.4	What Happened	<p>The issue was caused by a bug in the changes made to the archiving strategy relating to SUs on 3 July 2011. Some records associated with deleted SUs that should have been archived were ignored by the archiving process, leading to those records becoming visible in the same monthly TPs in 2011 and 2012.</p> <p>As a result, some Postmasters re-settled incorrect entries to clear their Local Suspense accounts, despite those entries already having been settled in 2010.</p> <p>14 branches were identified as having old erroneous data in their accounts, which had an impact on Suspense Accounts.</p> <p>19 additional branches were identified as having old data, although in these cases, the old data did not affect the Suspense Accounts, and was unlikely to have an ongoing impact on branch accounts.</p> <p>In affected Branch Trading Statements, it was found that the sum of the two 'Discrepancy Transferred' lines did not match the total of the two 'Discrepancy Resolved' lines.</p> <p>In affected Suspense Account reports, it was found that the 'B/Fwd' figure on the report did not match the 'C/Fwd' figure on the report from the previous TP.</p>
5.3.5	Technical Analysis	Transactions should be injected into the Branch Database (BRDB) and deleted afterwards to ensure that if the transaction impacts the BTS or Suspense, the Postmaster is alerted. Note that the functionality of Suspense has been changed from how it worked previously, when this item was raised.
5.3.6	Testing Required?	Transactions to be injected and deleted into the Branch Database (BRDB) to ensure the BTS or Suspense Account is impacted in the correct way, this would be detected, and the Postmaster would be alerted.
5.3.7	Status	READY FOR SIGN OFF



## 5.4 04 Dalmellington bug/Branch Outreach Issue

Item	Component	Commentary
5.4.1	Horizon System Affected	Horizon Online.
5.4.2	Description	This affected core and outreach branches only. The bug allowed a Postmaster to inadvertently Rem In cash to the outreach branch multiple times using the same barcode, so that a multiple of the actual cash transfer would be recorded at the outreach branch, causing a discrepancy.
5.4.3	Dates	2010 to 2016.
5.4.4	What Happened	<p>The effects of this bug arose only because of particular events, such as at Dalmellington:</p> <ol style="list-style-type: none"> <li>1. The user logged into Horizon to make a cash declaration; following this the SU timed out and logged off due to inactivity.</li> <li>2. The user logged back in to the SU and carried out the remittance delivery transaction (i.e. the Rem out to the outreach branch). Two delivery slips were printed, the user pressed Enter, which then printed the Rem In slip.</li> <li>3. Instead of the Remittances and Transfers Home screen being displayed, the Pouch Delivery Screen continued to display, with the Enter button enabled.</li> <li>4. The user then pressed Enter three times, with the result that as well as the £8,000 originally Remmed out of the core branch, an additional £23,000 (3 x £8,000) was Remmed out.</li> </ol> <p>As a result, the outreach branch showed a £23,000 discrepancy; the Dalmellington core branch showed no discrepancy.</p> <p>On investigation it was found that the ability to Rem in duplicate barcodes had existed since Release 1 of HNG-X in 2010 and that other branches had been affected.</p>
5.4.5	Technical Analysis	The user should not be able to rem out/ rem in with the same barcode twice. This should be prevented, and the user should either receive an error message, or the system should reject the second attempt to Rem in with the same barcode.
5.4.6	Testing Required?	The system should not allow to rem out/ rem the same barcode twice. A message should be displayed. The office type would need to be configured as Outreach.
5.4.7	Status	READY FOR SIGN OFF



## 5.5 5.1 Remming In bug - Issue 1

Item	Component	Commentary
5.5.1.	Horizon System Affected	Horizon Online.
5.5.2	Description	When Remming in cash pouches, a Postmaster was able to Rem in the same pouch more than once by scanning the same barcode.
5.5.3	Dates	2010.
5.5.4	What Happened	<p>The system was designed to check if a barcode had already been scanned, and to reject it if an attempt was made to enter it again. However, the barcode would only be added to the Remmed in list once the Rem process was fully complete.</p> <p>In this instance, the Postmaster scanned a pouch on counter 1, but did not complete the Rem in process before moving to counter 2, logging in with different credentials, and then scanning the same barcode again.</p> <p>The Rem in process completed on counter 2, but the Postmaster then returned to counter 1 and completed the incomplete Rem (of the same barcode) on counter 1. Because the barcode had already been scanned but not cancelled on counter 1, it did not need to be scanned again, and it was possible to complete the Rem in. Had the Postmaster cancelled and restarted the process on counter 1, Horizon would have prevented this second Rem from the same barcode, as it would already have been added to the list of scanned barcodes as a result of the completed Rem on counter 2.</p> <p>As a result, the same Rem in was recorded twice, causing two lots of the same cash to be added to the branch accounts, creating a shortfall.</p>
5.5.5	Technical Analysis	The user should not be able to rem in with the same barcode twice. This should be prevented, and the user should either receive an error message, or the system should reject the second attempt to Rem in with the same barcode.
5.5.6	Testing Required?	An error message should be displayed, or the system should reject the second attempt to Rem in with the same barcode.
5.5.7	Status	READY FOR SIGN OFF



## 5.6 5.2 Remming In bug Issue 2

Item	Component	Commentary
5.6.1.	Horizon System Affected	Horizon Online
5.6.2	Description	When Remming in cash pouches, a Postmaster was able to Rem in the same pouch more than once by scanning the same barcode.
5.6.3	Dates	2010.
5.6.4	What Happened	<p>The Postmaster started Remming in a pouch by scanning its barcode, but then pressed "PREV" which moved back one screen. The Postmaster then scanned the same barcode again. Horizon Online only printed one receipt which would make it appear to the Postmaster that there had been only one Rem in.</p> <p>The duplicate Rem would have been recorded in the branch transaction records, resulting in a shortfall.</p> <p>It was also possible to return to the barcode scan screen by pressing "PREV" on the print screen when attempting to reprint the receipt, and this would also present an opportunity for the same barcode to be scanned again.</p>
5.6.5	Technical Analysis	The user should not be able to rem in with the same barcode twice. This should be prevented, and the user should either receive an error message, or the system should reject the second attempt to Rem in with the same barcode.
5.6.6	Testing Required?	An error message should be displayed/ or the system should reject the second attempt to Rem in with the same barcode.
5.6.7	Status	READY FOR SIGN OFF



## 5.7 6.1 Remming Out bug Issue 1

Item	Component	Commentary
5.7.1.	Horizon System Affected	Legacy Horizon.
5.7.2	Description	On a Monday following a weekend counter release (T30 INC1) branches reported imbalances when Remming out cash or stock. The imbalances occurred when Remming out multiple identical items separately, instead of Remming them out as a single batch using the quantity button.
5.7.3	Dates	February 2007
5.7.4	What Happened	<p>Postmasters Rem out cash to be collected and returned to the POL cash centre. Each bag can hold only one denomination (£1 coins, £5 notes etc.), and multiple bags are placed in a pouch. The branch recorded in Horizon the amount in each pouch, by the number of bags, and the value and the denomination in each bag. Once Remmed out, the cash was removed from the branch cash holdings in Horizon but was recorded in a temporary "cash in pouches" line, where it remained until the pouch was physically collected. The collection team scanned the pouch barcode which removed it from the "cash in pouches" line in Horizon.</p> <p>When a Postmaster had, for example, two bags of 500 x £2 coins, Horizon expected this data to be entered in a single entry as 2 x 500 x £2 coins, with the quantity button used to indicate 2 bags. As a result of this bug it became apparent that many Postmaster would instead, in this example, enter 1 x 500 x £2 coins, and then repeat the entry to record the second bag.</p> <p>The bug led to only one of the two separately entered bags being recorded as leaving the branch cash holdings, although both bags would be recorded on the "cash in pouches" line. When both bags were collected, only one bag was recorded as removed from the branch cash holdings, although two bags had been physically removed.</p> <p>If the branch spotted the shortfall created in the branch cash holdings and tried to reverse the Rem of one bag, then the branch cash holdings would be corrected, but the amount would remain in the "cash in pouches" line within the Suspense Account, something which could not be adjusted by the branch, and a TC would be required.</p>
5.7.5	Technical Analysis	The user was unable to rem in with the same barcode twice. This should be prevented, and the user should either receive an error message, or the system should reject the second attempt to Rem in with the same barcode.
5.7.6	Testing Required?	Rem in the same pouch twice. The user should then either receive an error message, or the system should reject the second attempt to Rem in with the same barcode.
5.7.7	Status	READY FOR SIGN OFF



## 5.8 6.2 Remming Out bug Issue 2

Item	Component	Commentary
5.8.1.	Horizon System Affected	Legacy Horizon.
5.8.2	Description	While Remming out some coins, a Postmaster scanned an incorrect pouch barcode. On being prompted to Cancel or Retry with the correct barcode, the Postmaster pressed Cancel, but before the reversal operation completed, the Postmaster was able to press the Home button, which would normally be inactive, leading to the remittance being moved to the Suspense Account.
5.8.3	Dates	May 2005
5.8.4	What Happened	<p>The Postmaster in this case was trying to Rem out £100 of 5p coins, but on scanning the stock pouch barcode, Horizon displayed the message "Incorrect Pouch Type", presumably because the barcode was of the incorrect type to be used for coins. On then being presented with the option to Cancel, or Retry scanning another barcode, the Postmaster pressed Cancel, which caused Horizon to begin reversing the Rem out.</p> <p>During the reversal process, the Home button was briefly displayed and was pressed by the Postmaster, resulting in the remittance of £100 being transferred to the Suspense Account, instead of being cancelled. The £100 now in the Suspense Account had no correlating pouch ID and so could not be removed.</p> <p>The underlying issue is that the Home button should have been disabled at all times during this process, but it is believed that the counter on this occasion must have been running unusually slowly for the Home button to have been active for long enough to be pressed.</p>
5.8.5	Technical Analysis	Technical process for Remming has changed, and no longer works in this way. It is impossible to duplicate this issue within the current system as the technology has moved on (at the codebase and at the hardware level).
5.8.6	Testing Required?	No testing can be performed for this scenario.
5.8.7	Status	READY FOR SIGN OFF



## 5.9 07 Local Suspense Account issue

Item	Component	Commentary
5.9.1.	Horizon System Affected	Horizon Online Live Pilot, and Horizon Online.
5.9.2	Description	When completing a SU rollover, having experienced a discrepancy, Postmasters were repeatedly asked how they wanted to settle the discrepancy and were unable to rollover.
5.9.3	Dates	April to September 2010
5.9.4	What Happened	<p>When undertaking an SU rollover, the normal process is:</p> <ol style="list-style-type: none"> <li>1. Postmaster clears the Suspense Account and presses 'confirm' to complete the rollover.</li> <li>2. Postmaster returns to the screen asking how the discrepancy is to be cleared.</li> <li>3. Postmaster then selects one of the settlement options to make good the discrepancy.</li> <li>4. Once the settlement option is selected, the Postmaster receives confirmation of the SU rollover.</li> </ol> <p>The effect of this bug was that after step 3 above, instead of moving on to step 4, Horizon Online reverted back to again asking the Postmaster to select the settlement option.</p> <p>The underlying problem was that the interface between the counter and the BAL was not working correctly in certain circumstances, the BAL would send a message to the counter that could not be understood.</p>
5.9.5	Technical Analysis	If a Stock Unit roll over is successful when there a discrepancy which has been settled is present, then this issue is no longer affecting Horizon.
5.9.6	Testing Required?	Settle a discrepancy after starting a stock Unit Rollover. There are no error messages and the user is not asked again to settle the discrepancy.
5.9.7	Status	READY FOR SIGN OFF



## 5.10 8.1 Recovery Issues - Issue 1

Item	Component	Commentary
5.10.1.	Horizon System Affected	Horizon Online Live Pilot, and Horizon Online.
5.10.2	Description	A user experienced a failed transaction on one SU, then concurrently logged into another SU to invoke recovery for the failed transaction; it recovered on the correct SU, but the two SUs were in different TPs. This scenario lead to a loss in one TP, then a gain in the next. This arose during the HNG-X Live Pilot and was fixed prior to full rollout.
5.10.3	Dates	April 2010
5.10.4	What Happened	<p>The Incident leading to identification of this bug occurred in a Crown branch on 14-Apr-2010:</p> <ol style="list-style-type: none"> <li>1. A clerk added a banking withdrawal to the basket on counter 9 but did not settle the basket.</li> <li>2. The same clerk then logged on to counter 10 without logging off counter 9, receiving the message that if they continue the log in on 10, they would be forced to log out from 9.</li> <li>3. Counter 9 session was terminated, and 3 disconnected session receipts were printed showing that there was an outstanding session that required recovery.</li> <li>4. A different clerk then logged in to counter 91 while simultaneously logged on to counter 1 and invoked the recovery process against that incomplete basket.</li> <li>5. The basket was recovered but written into an incorrect TP.</li> </ol> <p>It was determined that in this case the effect of this bug occurred due to the sequence of events involving the clerks being logged in simultaneously on different SUs.</p>
5.10.5	Technical Analysis	Reproduce steps above to test if the same outcome of a loss in one TP and a gain in the next can arise.
5.10.6	Testing Required?	Validate if a user is correctly logged out of one SU when they attempt to log into a second, if the two SUs are in different TPs. Check that any recovery is against the appropriate SU.
5.10.7	Status	READY FOR SIGN OFF



## 5.11 8.2 Recovery Issues - Issue 2

Item	Component	Commentary
5.11.1.	Horizon System Affected	Horizon Online Live Pilot, and Horizon Online.
5.11.2	Description	There were multiple Peaks and KELs raised for failed transaction recoveries that were successfully detected via routine monitoring where POL was notified so the discrepancies could be corrected.
5.11.3	Dates	2010 to 2018
5.11.4	What Happened	<p>The multiple Peaks and KELs were not seen as related to each other. The main KEL, which is the KEL that this is referred to when a "State 4" failed recovery is identified via automatic monitoring.</p> <p>Recovery processes are part of Horizon Online and are designed to mitigate against the risk of transactions failing due to interruptions such as power, network, communication, or hardware failures which are risks that cannot be completely eliminated. There were instances where the recovery process had failed. This was a known risk that could not be eliminated. Automated failed recovery reports are run each day as part of the Reconciliation Service to identify such failures. These reports were sent to POL so that TCs can be issued to branches.</p> <p>Although the KEL and the Peaks referred to instances where recoveries failed, they were a record of the Reconciliation Service that was provided to POL so the failures could be corrected.</p>
5.11.5	Technical Analysis	Reproduce various recovery failures to confirm that they can happen and test that they are detected by routine monitoring.
5.11.6	Testing Required?	Confirm that the Data Reconciliation System will place a transaction into State 4 if it is unrecognised.
5.11.7	Status	READY FOR SIGN OFF



## 5.12 09 Reversals

Item	Component	Commentary
5.12.1.	Horizon System Affected	Legacy Horizon.
5.12.2	Description	A software error resulted in an issue with reversals of Remming in transactions. Instead of reversing the transaction, the amount of the transaction doubled. This bug was introduced as a result of another fix.
5.12.3	Dates	April 2003 to Jun 2003
5.12.4	What Happened	<p>A Postmaster was trading on one SU and Remmed in £113,910 of cash but having failed to move to another SU to continue trading, attempted to reverse all of the transactions on the first SU. Instead of the balance returning to zero, the Rem in doubled to £27,820. On calling the POL helpdesk (NBSC), the Postmaster was advised to attempt the reversal again, resulting in an error message indicating that first attempt at reversal had completed successfully.</p> <p>The issue was caused by a software error that had been introduced as a result of the fix for another issue. The bug was that Horizon applied the wrong mathematical symbol when reversing Rem in transactions, applying the same mathematical operator (+ or -) as the original Rem, instead of the opposite.</p>
5.12.5	Technical Analysis	The original scenario on Legacy Horizon cannot be replicated, as the code which causes this defect has been replaced and is no longer part of the Horizon system.
5.12.6	Testing Required?	No testing can be performed for this scenario.
5.12.7	Status	READY FOR SIGN OFF



## 5.13 10.1 Data Tree Build Failure discrepancies – Issues 1

Item	Component	Commentary
5.13.1.	Horizon System Affected	Legacy Horizon.
5.13.2	Description	<p>The effects of these issues were that Horizon displayed incorrect information on screen. The data tree was the means used in Legacy Horizon to construct a record of the transactions within given Balancing Periods. The underlying problem was one of error handling, in that Legacy Horizon had no means of creating a warning if any errors occurred during the creation of the data tree.</p> <p>The Peaks related to this issue relate to errors in constructing the data tree, due either to problems in reading the relevant transactions from the disks (potentially hardware issues), or in the Reference Data that was used to define the data tree.</p> <p>A Postmaster reported a £43,000 discrepancy due to a temporary error (possibly a disk error) causing an erroneous data tree to be built without any warning. Effectively, the bug is the lack of warning that there had been an error.</p>
5.13.3	Dates	November 1999 to late 2000
5.13.4	What Happened	<p>In November 1999, after balancing SUs and doing an office snapshot, a Postmaster found that the snapshot showed a £43,000 discrepancy which was known to be wrong. The effect of the bug was to cause an incomplete data tree to be built without any warning being displayed, thereby creating an incorrect office snapshot. The underlying transaction data was not affected, and if the snapshot had been re-run it may have produced a correct snapshot.</p> <p>The Postmaster followed the normal procedure in rolling over and made good any discrepancies in the process. However, since this roll over contained incorrect data (as a result of the incorrect office snapshot), this meant that a false discrepancy was accepted into the branch account and the incorrect shortfall was committed to the branch account as a loss.</p>
5.13.5	Technical Analysis	This error could only occur on Legacy Horizon counters and therefore cannot be replicated.
5.13.6	Testing Required?	No testing can be performed for this scenario.
5.13.7	Status	READY FOR SIGN OFF



## 5.14 10.2 (i) Data Tree Build Failure discrepancies – Issues 2(i) PC0121925

Item	Component	Commentary
5.14.1.	Horizon System Affected	Legacy Horizon.
5.14.2	Description	<p>The effects of this issues were that Horizon displayed incorrect information on screen. The data tree was the means used in Legacy Horizon to construct a record of the transactions within given Balancing Periods. The underlying problem was one of error handling, in that Legacy Horizon had no means of creating a warning if any errors occurred during the creation of the data tree.</p> <p>The Peaks related to this issue relate to errors in constructing the data tree, due either to problems in reading the relevant transactions from the disks (potentially hardware issues), or in the Reference Data that was used to define the data tree.</p> <p>A Test SU on a Fujitsu Test Rig experienced a gain following a cash declaration and rolling over into the next TP, the discrepancy being the value of transactions performed on the SU after rollover.</p>
5.14.3	Dates	June to July 2005 (in Test only).
5.14.4	What Happened	This issue was initially raised by POL when a Test SU being operated on a Test Rig experienced a gain of £45.05 following a cash declaration and roll into Branch Trading. The amount of the discrepancy was the cash value of the transactions performed on the SU after rollover. The issue occurred as a result of Riposte failing to notify the data tree of new transactions occurring.
5.14.5	Technical Analysis	This error could only occur on Legacy Horizon counters and therefore cannot be replicated.
5.14.6	Testing Required?	No testing can be performed for this scenario.
5.14.7	Status	READY FOR SIGN OFF



## 5.15 10.2 (ii) Data Tree Build Failure discrepancies – Issues 2(ii) PC0132133

Item	Component	Commentary
5.15.1.	Horizon System Affected	Legacy Horizon.
5.15.2	Description	<p>The effects of this issue were that Horizon displayed incorrect information on screen. The data tree was the means used in Legacy Horizon to construct a record of the transactions within given Balancing Periods. The underlying problem was one of error handling, in that Legacy Horizon had no means of creating a warning if any errors occurred during the creation of the data tree.</p> <p>The Peaks related to this issue relate to errors in constructing the data tree, due either to problems in reading the relevant transactions from the disks (potentially hardware issues), or in the Reference Data that was used to define the data tree.</p> <p>A Postmaster reported erroneous and inconsistent discrepancies appearing in daily cash report previews.</p>
5.15.3	Dates	February to January 2008.
5.15.4	What Happened	<p>The Postmaster reported that, while running previews of daily cash reports, a discrepancy was reported, which increased and then disappeared on re-running the report over the course of a twenty-minute period.</p> <p>The error was due to transactions carried out after a SU rollover not being added to the data tree. The underlying cause was that the mechanism to notify the data tree of new transactions was switched off as result of a bug when Cancel was pressed on a certain message during a SU rollover.</p>
5.15.5	Technical Analysis	This error could only occur on Legacy Horizon counters, as it is related to Riposte and therefore cannot be replicated, as Riposte is no longer part of Horizon.
5.15.6	Testing Required?	No testing can be performed for this scenario.
5.15.7	Status	READY FOR SIGN OFF



## 5.16 11.1 Girobank discrepancies – Issue 1

Item	Component	Commentary
5.16.1.	Horizon System Affected	Legacy Horizon.
5.16.2	Description	Giro transaction reversals carried out after the report cut-off time were not included on the daily Giro report for that day, nor in the same report for the next day. Despite this, the transaction reversals would have been recorded correctly in the weekly office Cash Account report. The system was working as designed, so this was not regarded as a bug, error, or defect.
5.16.3	Dates	May 2000.
5.16.4	What Happened	Fujitsu PinICLs (an earlier form of Peak) record several instances of Giro bank reporting differences in the value of Giro transactions between the daily Giro reports and the weekly Cash Account reports at certain branches. These differences were the result of a Giro transaction being entered and reversed, with the reversal being performed after the report had already been cut-off. The reversal would then not be included in a further run of the daily report for that day, nor on the following day.  The Peak notes that the system was working as designed, and there was no reason to believe that data was not being recorded correctly. The Horizon OPS (Office Platform System) Report and Receipts Design document [SD/DES/005] confirms the behaviour: a transaction and its subsequent reversal would be suppressed from the report, and if a transaction was reversed after a report was cut off, then only the reversal would be suppressed (because the transaction has already appeared on the report prior to cut-off and reversal). It is not clear to Fujitsu what method POL would have advised Postmasters to use in the event that it was necessary for such reversal transactions to be carried out after the report cut-off.
5.16.5	Technical Analysis	This is not a code defect and looks to be a design / business flow issue.  For this specific item the daily roll-over is 7pm. Any reversals post 7pm flow into the next day report. Cut-off is to facilitate batch runs. The system no longer works in the way described in this issue so this could not happen in the same way again.
5.16.6	Testing Required?	No testing can be performed for this scenario.
5.16.7	Status	READY FOR SIGN OFF



## 5.17 11.2 Girobank discrepancies – Issue 2

Item	Component	Commentary
5.17.1.	Horizon System Affected	Legacy Horizon.
5.17.2	Description	The same Giro deposit was included on two successive daily reports as a result of being committed during a particular window of time on a shared SU. It was noticed by Fujitsu while investigating 11.2 Girobank discrepancies – Issue 1 above, and a fix was applied to prevent reoccurrence. It appears to be another instance of the bug recorded, which is included in 11.3 Girobank discrepancies Issue 3.
5.17.3	Dates	May 2000.
5.17.4	What Happened	An £81 Giro deposit was included on two consecutive daily reports. This was because the transaction was entered in a very small window of time between two system calls being undertaken, resulting in the duplication. It was identified that the problem occurred when using a shared SU to display and cut off a daily Giro withdrawal or deposit report on one terminal at the same time as performing a Giro transaction to the same SU on another terminal. The weekly reports were unaffected.
5.17.5	Technical Analysis	The original scenario on Legacy Horizon cannot be replicated as reversals now work completely differently. Cut-off is now declared by the branch database (7pm). The system no longer works in the way described in this issue so this could not happen in the same way again.
5.17.6	Testing Required?	No testing can be performed for this scenario.
5.17.7	Status	READY FOR SIGN OFF



## 5.18 11.3 Girobank discrepancies – Issue 3

Item	Component	Commentary
5.18.1.	Horizon System Affected	Legacy Horizon.
5.18.2	Description	A discrepancy occurred between the daily Giro report and the office daily report due to a transaction being carried out on a shared SU by one user while another user was printing and cutting off the daily report.
5.18.3	Dates	August 2000.
5.18.4	What Happened	<p>The Peak records that a Postmaster reported £20 and £628.25 discrepancies between the Counter Daily Giro Deposit Report and the Office Daily Giro Deposit Report. The issue was diagnosed as arising out of the use of a shared SU. There was a window of time between a user printing and cutting-off a report, during which if another user was to perform a transaction, that transaction may not show on the report.</p> <p>The weekly reports were unaffected. This bug appears to be identical to 1.17 - 11.3 Girobank discrepancies – Issue 2.</p> <p>In the other Peak included in this Issue, a Postmaster attempted to re-enter two transactions that were incorrectly believed to be missing but did so before cutting off the report. The weekly reports, when checked, were found to be correct. This Incident appears to be the same as those in 11.1 Girobank discrepancies - Issue 1.</p>
5.18.5	Technical Analysis	<p>The original scenario on Legacy Horizon cannot be replicated. Specific issue with these two items was the data present on the screen from the local Riposte instance (which is deprecated now).</p> <p>The specific Girobank action (which is no longer performed) does not impact the current process (which has been updated to use BRDB).</p>
5.18.6	Testing Required?	No testing can be performed for this scenario.
5.18.7	Status	READY FOR SIGN OFF



## 5.19 11.4 Girobank discrepancies – Issue 4

Item	Component	Commentary
5.19.1.	Horizon System Affected	Legacy Horizon.
5.19.2	Description	A discrepancy occurred between the daily Giro report and the office daily report due to a cut-off being performed on one counter despite a failed attempt to print a transaction on another counter.
5.19.3	Dates	July 2001
5.19.4	What Happened	<p>A branch Cash Account showed two Giro deposits of £1,503, but the reports showed only one. The discrepancy was caused under specific circumstances:</p> <ol style="list-style-type: none"> <li>1. An attempt was made to print a report on one counter, but the print script did not complete.</li> <li>2. On a separate counter, a transaction was entered which should have appeared on the still incomplete report.</li> <li>3. Back on the first counter the report print was retried, but the print failed (for example due to the</li> <li>4. printer being switched off).</li> <li>5. Despite the print failure, the report that failed to print was still cut off, missing out the transaction from the other counter.</li> </ol> <p>Note that overall accounts were unaffected, but the transaction was missing from the reports.</p>
5.19.5	Technical Analysis	This error could only occur on Legacy Horizon counters (Riposte) and therefore cannot be replicated.
5.19.6	Testing Required?	No testing can be performed for this scenario.
5.19.7	Status	READY FOR SIGN OFF

**5.20 11.5 Girobank discrepancies – Issue 5**

Item	Component	Commentary
5.20.1.	Horizon System Affected	Legacy Horizon.
5.20.2	Description	Two branches noticed discrepancies between the daily Giro report and the office daily report, although weekly reports were unaffected.
5.20.3	Dates	February - April 2002.
5.20.4	What Happened	<p>In one instance, the Office Balance Snapshot figures were double the figures on the Cash Account snapshot, although the Office Balance report and the Cash Account figures were unaffected.</p> <p>In another instance, a Postmaster found that a Giro Daily Report printed the whole of the previous week's deposits.</p> <p>Both issues related to the same underlying problem although the KEL raised for this purpose was only referenced in one further Incident.</p>
5.20.5	Technical Analysis	Original scenario on Legacy Horizon (Riposte) cannot be replicated.
5.20.6	Testing Required?	No testing can be performed for this scenario.
5.20.7	Status	READY FOR SIGN OFF



## 5.21 11.6 Girobank discrepancies – Issue 6

Item	Component	Commentary
5.21.1.	Horizon System Affected	Legacy Horizon.
5.21.2	Description	A branch believed that two Giro deposits did not appear on the reports run either on the same day, or the next day. However, the Postmaster was mistaken, and this was not a bug, error, or defect.
5.21.3	Dates	May 2000.
5.21.4	What Happened	A Postmaster reported that two Giro deposits had not appeared on the Giro Deposits report run on the same day as the transaction, nor on the next day's report. Following investigation by Fujitsu SSC, it transpired that the transactions were in fact included on the report the following day.
5.21.5	Technical Analysis	Not a code defect. This was a misunderstanding and was clarified by the Support Centre.
5.21.6	Testing Required?	No testing is required to be performed for this scenario.
5.21.7	Status	READY FOR SIGN OFF

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## 5.22 12.1 Counter-replacement issues – issue 1

Item	Component	Commentary
5.22.1.	Horizon System Affected	Legacy Horizon.
5.22.2	Description	Following the replacement of a counter hard drive at a single counter branch, messages were overwritten, resulting in a receipts and payments mismatch.
5.22.3	Dates	November 2000 to September 2002.
5.22.4	What Happened	A Postmaster reported a receipts and payments mismatch: receipts were £50,191.70, payments were £50,023.58, resulting in a £167.12 discrepancy. The discrepancy would have been flagged to the Postmaster on the Cash Account when attempting to rollover. This occurred in a single counter branch where the hard drive had been replaced, but the replacement appeared to cause two messages related to an Order Book Control Service (OBCS) transaction to be overwritten, so that a transaction off 167 .12 was not added to the Cash Account. The root cause was Horizon Riposte coming online from recovery mode too early, resulting in messages being overwritten because they had not been committed to the datacentre.
5.22.5	Technical Analysis	This error could only occur on Legacy Horizon counters (Riposte) and therefore cannot be replicated.
5.22.6	Testing Required?	No testing can be performed for this scenario.
5.22.7	Status	READY FOR SIGN OFF

**5.23 12.2 Counter-replacement issues – issue 2**

Item	Component	Commentary
5.23.1.	Horizon System Affected	Legacy Horizon.
5.23.2	Description	A branch had two counters removed, leaving it as single counter branch. As the remaining single counter did not have a mirror disk; the branch had no replication of data if it was not connected to the datacentre.
5.23.3	Dates	March 2006.
5.23.4	What Happened	A branch had three counters and two counters were removed, leaving it as single counter branch. As the remaining single counter did not have a mirror disk; the branch had no replication of data if it was not connected to the datacentre; six messages on the counter had not been replicated to the data centre.
5.23.5	Technical Analysis	This error could only occur on Legacy Horizon counters (Riposte) and therefore cannot be replicated.
5.23.6	Testing Required?	No testing can be performed for this scenario.
5.23.7	Status	READY FOR SIGN OFF

**5.24 12.3 Counter-replacement issues – issue 3**

Item	Component	Commentary
5.24.1.	Horizon System Affected	Legacy Horizon.
5.24.2	Description	Horizon Riposte failed to index messages, which resulted in some items being missed from the receipts side of the Office Balance Report.
5.24.3	Dates	February 2008.
5.24.4	What Happened	Horizon Riposte failed to index four messages which resulted in some items being missed from the receipts side of the Balance Report. It is unknown how common this issue was. The Peak notes that the branch did not experience a discrepancy as a result because this was a reporting issue only; indexes are not used when replicating data and so cash/stock were unaffected.
5.24.5	Technical Analysis	This error could only occur on Legacy Horizon counters (Riposte) and therefore cannot be replicated.
5.24.6	Testing Required?	No testing can be performed for this scenario.
5.24.7	Status	READY FOR SIGN OFF



## 5.25 13 Withdrawn stock discrepancies

Item	Component	Commentary
5.25.1.	Horizon System Affected	Legacy Horizon.
5.25.2	Description	Discrepancies could occur when a Postmaster declared that they held stock of a withdrawn product and then accepted the resulting discrepancy on the system. The system would re-introduce the withdrawn product into the system, and the discrepancy would continue to rollover.
5.25.3	Dates	July 2010 to September 2011.
5.25.4	What Happened	<p>A Postmaster returned some withdrawn stock to POL after the reference data change relating to that stock had been made, without performing the Rem out. This meant that the value of the items remained in the branch account, resulting in a shortfall to the value of the withdrawn stock.</p> <p>The next TP balance showed the shortfall, prompting the Postmaster to make good, resulting in a TC being issued by POL to balance the shortfall in the next TP.</p> <p>The effect of the bug was that the withdrawn stock was re-introduced in November 2010 as part of the branch stock after the subsequent rollover, and this occurred again in the following two months. The reintroduction was not noticed by the Postmaster in December (because there were some unrelated losses that were partially offset by the TC), but noticed in January 2011 because combined with the reintroduction in December 2010, the stock value of that item had doubled.</p>
5.25.5	Technical Analysis	This specific incident was a one-off and cannot be recreated.
5.25.6	Testing Required?	No testing can be performed for this scenario.
5.25.7	Status	READY FOR SIGN OFF



## 5.26 14.1 Bureau discrepancies – Issue 1

Item	Component	Commentary
5.26.1.	Horizon System Affected	Horizon Online.
5.26.2	Description	A Postmaster tried to pre-order two currencies. A network timeout occurred after the second was added to the basket. The Postmaster attempted to cancel the whole order, but only the first currency was successfully cancelled, leaving a shortfall for the amount of the second currency.
5.26.3	Dates	August 2017 - November 2017
5.26.4	What Happened	A Postmaster attempted to pre-order two currencies for a customer: £1,000.07 in Indonesian Rupiah; and £204.59 in Singaporean dollars. The order for Rupiahs was successful; however, at the point the dollar order was added, there was a network timeout. When the system came back online, a warning message stated that the second order may not have succeeded, although the basket and transaction log were showing both orders. As the customer's receipt showed only the Rupiah order, the Postmaster attempted to cancel the whole order of both currencies. The cancellation only succeeded for the Rupiah order, leaving a £204.59 shortfall in respect of the dollars.
5.26.5	Technical Analysis	Bureau has had a large redesign since 2017, and the process has changed - rather than individual transactions, the transactions are now merged into one stream.
5.26.6	Testing Required?	Perform a bureau Pre-Order transaction with two currencies. when submitting the order, the first currency is successful, but the second one times out. Confirm that Horizon handles this correctly.
5.26.7	Status	READY FOR SIGN OFF

**5.27 14.2 Bureau discrepancies – Issue 2**

Item	Component	Commentary
5.27.1.	Horizon System Affected	Horizon Online.
5.27.2	Description	This issue involved a one-sided transaction; the branch had a record of a sale of Euros (€4,500) but this was not reflected on the POLSAP system.
5.27.3	Dates	December 2017 - May 2018.
5.27.4	What Happened	This issue related to a one-sided transaction in which a branch had a record of a sale of Euros, but it was not recorded in POLSAP, leading to a discrepancy.
5.27.5	Technical Analysis	It is understood that the error was within the POLSAP system. POLSAP was replaced with CFS - but same files are sent from Horizon through today.
5.27.6	Testing Required?	Perform a sell Euros transaction on Horizon. Confirm the transaction appears in the BTF and BTR files. Send the BTF and BTR files to Accenture to confirm that the transaction processes successfully.
5.27.7	Status	READY FOR SIGN OFF



## 5.28 15.1 Phantom Transactions – Issue 1

Item	Component	Commentary
5.28.1.	Horizon System Affected	Legacy Horizon.
5.28.2	Description	<p>Some Postmasters reported that items and transactions appeared and disappeared without any user input.</p> <p>After extensive monitoring, it was concluded that user error could not be ruled out in any of the known circumstances. It is worth noting that this collection of issues arose and then ceased within a few months of the branches first going live with Horizon in 2001. Ultimately, the issues appear to relate to insufficient training, and, in some cases, equipment failures which were then resolved.</p>
5.28.3	Dates	April 2001 - November 2001.
5.28.4	What Happened	<p>A Postmaster reported that items and transactions would appear and disappear from the screen without any user input. The Peak contains multiple reports by the Postmaster of separate instances of this type of error, but also reports of errors in various other branches. The Peak opens with a record that the Postmaster had made a previous complaint that had been closed without his agreement, and that the Postmaster had already had to pay to cover losses incurred as a result of the problems. It records the Postmaster had previously had disagreements with Post Office Counters Limited (POCL) and Fujitsu over whether the problems were caused by user error, or issues with Horizon.</p>
5.28.5	Technical Analysis	This issue was unique and non-reproducible, as it looked to be a site issue (suspect interaction of the building with the terminal).
5.28.6	Testing Required?	No testing can be performed for this scenario.
5.28.7	Status	READY FOR SIGN OFF



## 5.29 15.2 Phantom Transactions – Issue 2

Item	Component	Commentary
5.29.1.	Horizon System Affected	Legacy Horizon.
5.29.2	Description	A Postmaster reported that a receipt containing three transactions printed without any user input. This was, however, standard functionality that occurred if a user was automatically logged off due to inactivity after having entered, but not completed, transactions.
5.29.3	Dates	August 2000.
5.29.4	What Happened	<p>A Postmaster reported that a receipt containing three transactions printed without any user input.</p> <p>Horizon automatically logs a user out after a period of inactivity, a standard security measure of many IT systems. If the user has recorded, but not completed, some transactions in the stack, then when the system automatically logs off, it will complete these transactions and assume payment was made by cash. The receipts are then printed to make it clear to the Postmaster that it has happened.</p> <p>Fujitsu's investigation showed that the transactions were held in a suspended session hence they were not complete when the user was logged out. The assumption was that they were inadvertently placed in suspense by the Postmaster.</p> <p>This was not a bug, but functionality intentionally designed into the system, based on POL's requirement.</p>
5.29.5	Technical Analysis	Validate how transactions are handled post-recovery. The transaction is progressed when logged out and the transaction is completed with receipt printed.
5.29.6	Testing Required?	Add three items to the Horizon basket and place in a suspended session. Leave the counter for an hour until log off is enforced. Confirm that the suspended session completes to cash and the receipt is printed
5.29.7	Status	READY FOR SIGN OFF

**5.30 15.3 Phantom Transactions – Issue 3**

Item	Component	Commentary
5.30.1.	Horizon System Affected	Legacy Horizon.
5.30.2	Description	Two counters in the same branch had certain differences in the icons displayed on screen. One counter had received the latest Horizon Riposte release (which changed the button text), the other had not, so the two counters were one version apart.
5.30.3	Dates	August 2000.
5.30.4	What Happened	The Postmaster that reported 15.2 Phantom Transactions - issue 2, also reported at the same time that there were differences between the icons displayed on the two counters in the branch.
5.30.5	Technical Analysis	Original scenario on Legacy Horizon (Riposte) cannot be replicated.
5.30.6	Testing Required?	No testing can be performed for this scenario.
5.30.7	Status	READY FOR SIGN OFF

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**5.31 16.1 Reconciliation Issues - Issue 1**

Item	Component	Commentary
5.31.1.	Horizon System Affected	Legacy Horizon.
5.31.2	Description	Discrepancies were reported by automated BAU reconciliation reporting, related to two transactions (£8.06 and £0.08, totalling £8.14) that were brought forward values from the previous week's Cash Account.
5.31.3	Dates	March 2000 -August 2000.
5.31.4	What Happened	At the end of each working day, the counter calculated information for the Cash Account in two independent ways and ensured that they matched, then a report was generated of any instances of mismatches. The Peak was raised as a result of that process which showed a discrepancy of £8.14. The root cause was identified in a related Peak as being code that, in the event of a particular sequence of operations being carried out by the Postmaster, would cause transactions to be brought forward from the previous week's Cash Account. The apparent discrepancy was therefore a reporting issue, and although the scenario in which it arose was thought to be relatively unusual, it was treated as a bug to be fixed.
5.31.5	Technical Analysis	Original scenario on Legacy Horizon (Riposte) cannot be replicated.
5.31.6	Testing Required?	No testing can be performed for this scenario.
5.31.7	Status	READY FOR SIGN OFF

**5.32 16.2 Reconciliation Issues - Issue 2**

Item	Component	Commentary
5.32.1.	Horizon System Affected	Legacy Horizon.
5.32.2	Description	A false discrepancy of 1p was detected by automated BAU reconciliation reporting; investigation showed no actual discrepancy in the branch.
5.32.3	Dates	April 2002 -August 2002.
5.32.4	What Happened	Daily BAU reconciliation reporting identified discrepancies between totals produced at the counter (1p) and those produced at the data centre (zero). Fujitsu's investigations identified that the discrepancy was due to the way that the host re-calculated the totals, from the branch data when carrying out the reconciliation check: values generated as 0.01 (1p) were being stored as 0.0099 which was then treated as zero and therefore ignored, and not recorded for the purpose of the report. This bug was fixed in order to avoid further instances of false mismatches appearing on report TPSC268A.
5.32.5	Technical Analysis	Original scenario on Legacy Horizon (Riposte) cannot be replicated.
5.32.6	Testing Required?	No testing can be performed for this scenario.
5.32.7	Status	READY FOR SIGN OFF

**5.33 16.3 Reconciliation issues - Issue 3**

Item	Component	Commentary
5.33.1.	Horizon System Affected	Legacy Horizon.
5.33.2	Description	Related to a Test system, not Live, therefore does not affect the Postmasters.
5.33.3	Dates	July 2000 -August 2000.
5.33.4	What Happened	The Peak was raised by a tester explicitly checking for issues in a test environment. A report showed a difference between the number of files recorded as being transferred to TIP and the number of files actually transferred. The root cause was that when the report was run it was not accounting for the files already counted. There is no suggestion in the Peak of any issues with the underlying data being transferred to TIP, only with the report.
5.33.5	Technical Analysis	This item occurred within a Test environment and was not present in the Live environment.
5.33.6	Testing Required?	No testing is required for this scenario.
5.33.7	Status	READY FOR SIGN OFF

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**5.34 16.4 Reconciliation issues - Issue 4**

Item	Component	Commentary
5.34.1.	Horizon System Affected	Legacy Horizon.
5.34.2	Description	Automatic detection of a receipts and payment mismatch of £4,464.46, related to the data tree issues described above in section 5.10.
5.34.3	Dates	May 2000.
5.34.4	What Happened	A receipts and payment mismatch was automatically detected. Investigation identified the immediate cause of the imbalance in the Cash Account being a result of a failure in the EPOS Data server. The root cause was related to a data tree build failure (documented as 10.1 Data Tree Build Failure discrepancies issues 1 and 2) that occurred following a hard disk failure in the branch.
5.34.5	Technical Analysis	This error could only occur on Legacy Horizon counters (Riposte) and therefore cannot be replicated.
5.34.6	Testing Required?	No testing can be performed for this scenario.
5.34.7	Status	READY FOR SIGN OFF

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## 5.35 16.5 Reconciliation Issues - Issue 5

Item	Component	Commentary
5.35.1.	Horizon System Affected	Legacy Horizon.
5.35.2	Description	Data was detected as missing from the Client Transaction Summary (CTS) Report due to new products with start dates not on the midnight boundary. Although this system was operating as designed, a fix was made so that this did not reoccur.
5.35.3	Dates	September 2014 - December 2014.
5.35.4	What Happened	Data was detected as missing from a CTS Report. It was identified that when products with a start date of 01-Aug-2014 were traded on that date, the metadata for those products did not yet exist on the Automated Payment Service (APS) database when the CTS report was written. The root cause was identified as products being introduced with start dates/ times that were not on a midnight boundary; in this particular case the start time was 00:00:02.
5.35.5	Technical Analysis	Need to force a timestamp data with Reference Data (within the Fujitsu domain and not the Atos/POL Reference Data). Also need to be able to transact before it becomes active. File would have come across from MDM.
5.35.6	Testing Required?	Force a timestamp data with Reference Data (within the Fujitsu domain) Transact before it becomes active and confirm if problems arise when such products are traded.
5.35.7	Status	READY FOR SIGN OFF

**5.36 16.6 Reconciliation Issues - Issue 6**

Item	Component	Commentary
5.36.1.	Horizon System Affected	Legacy Horizon.
5.36.2	Description	A difference was found between a branch's figures and the CTS report.
5.36.3	Dates	September 2010.
5.36.4	What Happened	A Postmaster found there was a difference between their branch figures and the CTS report and reported it to the Fujitsu helpdesk (HSD). Investigation by Fujitsu SSC found that the root cause was an issue with POLSAP, so the Peak was closed as POLSAP was not supported by Fujitsu SSC.
5.36.5	Technical Analysis	It is understood that the error was within the POLSAP system. This did occur in legacy Horizon as a one off and unlikely to reoccur.
5.36.6	Testing Required?	No testing can be performed for this scenario.
5.36.7	Status	READY FOR SIGN OFF

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## 5.37 17 Branch Customer discrepancies

Item	Component	Commentary
5.37.1.	Horizon System Affected	Legacy Horizon.
5.37.2	Description	A counter crashed while the user was processing a cash withdrawal transaction. The Postmaster started the recovery process but did not complete it. The customer did not receive the money as the transaction did not complete, but the bank did record the withdrawal.
5.37.3	Dates	March 2008.
5.37.4	What Happened	<p>A branch counter crashed while processing a cash withdrawal transaction. As a result, Horizon did not record a completed cash withdrawal. Since the transaction did not complete, the Postmaster should not have handed over the cash to the customer, and it appears from the record that the Postmaster did not do so. However, the customer's bank recorded the transaction as having taken place, hence the customer would suffer the loss of the withdrawal from their account, but without receiving the cash.</p> <p>The branch did not log back into the counter after the crash, so the automatic recovery process was not carried out. (If the recovery process had been completed properly, it would have recorded a reversal of the failed cash withdrawal, resulting in the customer's bank returning the money to the customer's account, and no transaction being registered on Horizon, i.e. it would be as if the transaction had not happened at all).</p> <p>Fujitsu detected the problem transaction via the automated NB102 report, where it appeared as a state 4 transaction (an incomplete transaction), which reports discrepancies between the Financial Institution's (FI) view of what has happened and Horizon's. In this case, the discrepancy was that the FI had authorised a payment/withdrawal on the assumption that the cash payment had been made, whereas Horizon recorded that there had been no payment. This report caused the creation of the first Peak.</p> <p>Having noted that the Postmaster had not logged back into the counter since the event, Fujitsu contacted the branch and advised the Postmaster to log in to the counter and allow the writing of the recovery messages to complete. Within around 30 minutes it was confirmed that the messages had been written, and later that day a BIMS was issued to POL.</p> <p>However, the next day the transaction again appeared on the NB102 report, this time as a state E37 (uncleared exception), leading to the creation of the second Peak (PC0156236). It appeared that on attempting the recovery process, the Postmaster had not allowed it to complete and had declined the recovery.</p> <p>The Peak also records that POL had contacted Fujitsu to report that the FI (Citibank) had contacted POL to ask why the transaction was showing on their system as an exception. It was thought that the branch account was in balance, but the customer's account had been debited, and therefore needed rectifying. Fujitsu advised POL to check with the branch to confirm that the money had not been paid to the customer, and if that was the case, to notify the bank of the discrepancy so that the customer account could be corrected.</p>
5.37.5	Technical Analysis	This is not a system error and is working as designed. Review of the process flow for this activity to see if it can be improved / remove possibility of user confusion should be done.



Historic KELS Determination and Closure v0.5 Draft 28th June 2021

5.37.6	Testing Required?	No testing can be performed for this scenario.
5.37.7	Status	READY FOR SIGN OFF

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## 5.38 18.1 Concurrent logins – Issue 1

Item	Component	Commentary
5.38.1.	Horizon System Affected	Legacy Horizon.
5.38.2	Description	A user managed to log on to two counters simultaneously when the first counter was unable to respond.
5.38.3	Dates	1999 to 2001.
5.38.4	What Happened	<p>While printing a final Cash Account on counter 2, the system froze for an hour. Having called the Fujitsu helpdesk (HSH), the Postmaster was asked to logon to counter 1 to re-try printing out the final Cash Account, which was successful. Counter 2 was still showing 'printing report' as the Postmaster was logging on and printing the report on counter 1. Counter 1 then started to show "no entry sign" icons when the Postmaster logged out. POL NBSC requested Fujitsu to investigate the fact that the Postmaster had apparently been logged on to two counters concurrently. There was no evidence of any financial discrepancy.</p> <p>It was confirmed after investigation by Fujitsu that the Postmaster had been able to log himself onto the system at both counter 1 and counter 2 at the same time.</p>
5.38.5	Technical Analysis	The original scenario on Legacy Horizon cannot be reproduced. HGNA now has updated / new controls regarding user access, and this scenario cannot be duplicated in the current system. The BRDB now only allows a single login - or it locks the session if you try to logon from a different counter.
5.38.6	Testing Required?	No testing can be performed for this scenario.
5.38.7	Status	READY FOR SIGN OFF



## 5.39 18.2 Concurrent logins – Issue 2

Item	Component	Commentary
5.39.1.	Horizon System Affected	Legacy Horizon.
5.39.2	Description	A receipts and payments mismatch were caused by two operations being carried out with simultaneous logins, although there was no overall loss to the branch.
5.39.3	Dates	2000.
5.39.4	What Happened	<p>A receipts and payments mismatch were reported by a Postmaster to the Fujitsu helpdesk (HSH). The Postmaster reported that they had transferred £9,250 out from, counter 8 by mistake, when it should have been from counter 1, with £5,590 being transferred in to counter 3 and £3,660 to counter 4. This had occurred while counter 8 was in the process of rolling over, but 3 and 4 had not yet rolled. As a result, the cash left counter 8 in Cash Accounting Period (CAP) 18 and arrived in counters 3 and 4 in CAP 17.</p> <p>CAP 18 was therefore in surplus, because £9,250 was transferred out and never back in within the same CAP, while CAP 17 had a gain, because £9,250 was transferred in but there was no corresponding transfer out without the same CAP. The Postmaster then rolled over the office for CAP 17, accepting the discrepancy.</p> <p>Fujitsu's investigation indicated that the immediate cause of the error was that the user rolled counter 3, while logging in and processing a transfer out on counter 4, so was logged in to both counters concurrently.</p>
5.39.5	Technical Analysis	No test suggested. Original scenario on Legacy Horizon (Riposte) cannot be replicated, as the Riposte system is no longer part of Horizon.
5.39.6	Testing Required?	No testing can be performed for this scenario.
5.39.7	Status	READY FOR SIGN OFF



## 5.40 19 Post & Go/TA discrepancies in POLSAP

Item	Component	Commentary
5.40.1.	Horizon System Affected	Horizon Online. Only branches with Post & Go terminals could have been affected.
5.40.2	Description	This occurred in a scenario in which Horizon was receiving Post and Go (PG) data for six separate PG tills at a branch, but only four of the tills had associated SUs. This caused the entire subfile for the branch to be held, and the transaction data was not sent to POLSAP.
5.40.3	Dates	2012.
5.40.4	What Happened	A branch was found to have many entries in the "Subfiles_on_hold" report. Horizon was receiving PG data for six separate Post & Go tills at the branch, but only four of them had associated SUs. This caused the entire subfile for the branch to be held, and the transaction data was not sent to POLSAP.  It was noted by Fujitsu SSC that other branches were experiencing similar issues, although the branches themselves would not notice the issue because it did not affect the transfer of data from PG terminals to Horizon and therefore did not affect branch accounts. It only affected the transfer of data outside of Horizon to POLSAP.
5.40.5	Technical Analysis	The system has substantially changed since this issue arose, and the code which sends the information has changed. There is a report generated as part of the current process – Post Office Data Gateway (PODG) which does include information (which is not reflective of the process as in this KEL - the file has changed, it used to be BLE files, which are no longer used). These reports are still generated and reviewed as required. The solution is significantly different today than when the original issue was found. Specifically, there is a different program that prepares the data that gets transferred and it is therefore for Post Office to verify that the data they are receiving is what they expect.
5.40.6	Testing Required?	No testing can be performed for this scenario
5.40.7	Status	READY FOR SIGN OFF



## 5.41 20.1 Recovery Failures – Issue 1

Item	Component	Commentary
5.41.1.	Horizon System Affected	Horizon Online.
5.41.2	Description	A Postmaster raised an alleged discrepancy with POL and Fujitsu nine months after the events in question. Fujitsu believe the incident to have been a genuine accounting issue, and not caused by any fault in Horizon.
5.41.3	Dates	September 2012.
5.41.4	What Happened	A Postmaster rolled her office over with a discrepancy of less than £1, then the following day performed a daily cash declaration that showed a shortfall of £191.48. The next day one of the counters suffered a memory dump issue, and the following day the counter was replaced. A few days later the Postmaster reported a shortfall of £300 and asked the POL helpdesk (NBSC) if it might be related to the base unit fault or replacement. NBSC passed the Incident to Fujitsu, and Fujitsu SSC investigations found no evidence of any system errors, and suspected that the cash shortfall that existed before the memory dump issue was the same shortfall that was now being reported, in other words it predated the memory dump and the base unit replacement. The issue was passed back to NBSC for investigation as an operational accounting issue.  Eight months later the Postmaster opened another Incident with the POL helpdesk alleging that the counter replacement had caused the £300 loss. Fujitsu responded to POL by providing information from the original Incident earlier in the year, and about the memory dump and the base unit swap. The Peak also noted that it was not clear what, if any, investigation had been carried out by NBSC, and that no further Incidents had been raised at the time regarding the discrepancy. Fujitsu advised POL that if further investigation was required then POL would need to submit an ARQ request in order to retrieve financial transaction data from the audit server.
5.41.5	Technical Analysis	It is understood that the Incident was resolved between NBSC and the Postmaster, with no error being shown to have occurred in Horizon. The system was working as expected and no defect or error within the Horizon platform was found.
5.41.6	Testing Required?	No testing is required for this scenario.
5.41.7	Status	READY FOR SIGN OFF



## 5.42 20.2 Recovery Failures – Issue 2

Item	Component	Commentary
5.42.1.	Horizon System Affected	Horizon Online.
5.42.2	Description	A session failed due to a communications / network problem. On restoration of the service, a Health Lottery transaction failed to recover correctly.
5.42.3	Dates	February 2015.
5.42.4	What Happened	A user reported that they were unable to complete a recovery on a counter. The settlement of the session failed due to a network communications problem. On logging back in, the recovery process was initiated but the recovery of one of the two transactions in the session failed, and the user was then unable to log in on that counter. The root cause was the failure of the AP-ADC recovery script to handle Lottery transactions fully.
5.42.5	Technical Analysis	It is understood that the error was with AP-ADC scripting.
5.42.6	Testing Required?	Health lottery transactions should be appropriately recovered after network communications failure.
5.42.7	Status	READY FOR SIGN OFF

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### 5.43 20.3 Recovery Failures – Issue 3

Item	Component	Commentary
5.43.1.	Horizon System Affected	Horizon Online.
5.43.2	Description	This was a BAU reconciliation incident following a standard process with no evidence of any failure.
5.43.3	Dates	April 2010.
5.43.4	What Happened	The original issue in the branch leading the reconciliation issue appeared to relate to a cash withdrawal, but the exact details are unknown.
5.43.5	Technical Analysis	It is understood that this to have been an example of a routine reconciliation incident, and the exact scenario that led to it is unknown. This is not a system error or defect – but a BAU reconciliation error.
5.43.6	Testing Required?	No testing is required for this scenario
5.43.7	Status	READY FOR SIGN OFF

DRAFT

**5.44 21.1 Transaction Correction Issues – Issue 1**

Item	Component	Commentary
5.44.1.	Horizon System Affected	Legacy Horizon.
5.44.2	Description	Four Peaks were raised during the testing of Transaction Correction functionality (TC) for the then future S80 release of the system. These Peaks were not in Live, so could not have affected branch accounts.
5.44.3	Dates	January - May 2005.
5.44.4	What Happened	The Peaks identified were raised by Fujitsu's SV&I team and related to issues which occurred during the testing of TC functionality for the then future S80 release of the system. Three Peaks related to the appearance of TC option buttons on the screen, while the other related to the TC pick list freezing when a TC was received.
5.44.5	Technical Analysis	These items were raised in the test environment only, and did not occur in the Live environment. Additionally, the original scenario was related to on Legacy Horizon (Riposte) cannot be replicated, as Riposte is no longer part of the Horizon system.
5.44.6	Testing Required?	No testing is required to be performed for this scenario
5.44.7	Status	READY FOR SIGN OFF

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## 5.45 21.2 Transaction Correction Issues – Issue 2

Item	Component	Commentary
5.45.1.	Horizon System Affected	Legacy Horizon.
5.45.2	Description	The screen froze when selecting Transaction Correction (TC). This bug was identified on 51 sites, due to formatting of the TCs, soon after the functionality was introduced.
5.45.3	Dates	December 2005 - January 2006.
5.45.4	What Happened	In December 2005, Fujitsu received calls from branches reporting that their screens would freeze when selecting a TC from the picklist, preventing the branch from dealing with the outstanding TC. The issue was reported by four branches in relation to a TC for Premium Bond Sale, and a further 48 branches relating to a Camelot Lottery TC. The issue impacted branches as they were prevented from rolling over, due to being unable to clear their outstanding TCs. The problem was found to be caused by the code being unable (and not designed) to deal with some of the formatting used by the POL TC team in preparing some of the TCs. The code to render the text of the TC on screen attempted to split the blocks of text at a suitable space between words, but some of the TCs contained long strings of around 80 concatenated characters causing the code to fail.
5.45.5	Technical Analysis	Original scenario on Legacy Horizon (Riposte) cannot be replicated.
5.45.6	Testing Required?	No testing can be performed for this scenario
5.45.7	Status	READY FOR SIGN OFF



## 5.46 21.3 Transaction Correction Issues – Issue 3

Item	Component	Commentary
5.46.1.	Horizon System Affected	Horizon Legacy
5.46.2	Description	Transaction Corrections (TCs) more than 40 days old were not showing on the TC report which it was possible to request for up to 60 days after the TC was issued. This was due to the retention period being only 40 days.
5.46.3	Dates	September - October 2010.
5.46.4	What Happened	<p>A Postmaster contacted the Fujitsu helpdesk (Service Desk) to report an £80 cash loss and claimed it was caused by a system error. In evidence, the Postmaster provided a processed TC report generated on 10 September 2010, with a date range between 12 July 2010 to 10 September 2010 (i.e. 60 days). The report showed a TC accepted on 08 September 2010, but not the TCs accepted on 13 July 2010 and 21 July 2010.</p> <p>Fujitsu requested (by phone) some additional information from the Postmaster in order to further investigate the £80 loss, but no further information was available. The Peak records that a check was made by NBSC that confirmed that the TCs missing from the report had been processed correctly, and that information was passed on to the Postmaster.</p> <p>Fujitsu Development ascertained that the cause was a bug introduced as part of HNG-X. Through the picklist on screen, Horizon allowed Postmasters to select a backwards date range of up to 60 days when generating a processed TC list, but the relevant database only retained the data for up to 40 days. It was confirmed that the original use case stated that the TCs should be retained for 60 days, and that because the setting on the database table was incorrect, this was a bug.</p>
5.46.5	Technical Analysis	To test a script is needed to update the TC(s) details in the BRDB to reflect an age of 61 and 62 days. Thus an "aged" TC can be inserted into the system.
5.46.6	Testing Required?	Test that the number of days for which it is possible to request a TC report can be accurately provided by the report.
5.46.7	Status	READY FOR SIGN OFF

**5.47 22.1 Bugs/errors/defects introduction by previously applied Peak fixes – Issue 1**

Item	Component	Commentary
5.47.1.	Horizon System Affected	Legacy Horizon.
5.47.2	Description	If incorrect keys were pressed while generating a certain report, the screen could freeze. This was identified on a Training Counter in test, and it was determined that it could also occur in the live system, but the Peak records no evidence that the issue ever did occur in live.
5.47.3	Dates	August - September 2000.
5.47.4	What Happened	Fujitsu test team that was testing a future release found a bug in the training environment, described as " <i>Training Counter freezes using transaction log. This manifests itself in training, if a delegate mis-hears or miskeys a keying sequence in doing a transaction log report.</i> " Tests on the software that was currently in use in live determined that if the same sequence of events was performed, the same problem might arise. There is no evidence recorded that it had ever arisen in the live system, but it was decided to produce a fix to ensure that it could not.
5.47.5	Technical Analysis	Original scenario on Legacy Horizon (Riposte) cannot be replicated.
5.47.6	Testing Required?	No testing can be performed for this scenario.
5.47.7	Status	READY FOR SIGN OFF

**5.48 22.2 Bugs/errors/defects introduction by previously applied Peak fixes – Issue 2**

Item	Component	Commentary
5.48.1.	Horizon System Affected	Legacy Horizon.
5.48.2	Description	A Postmaster reported a discrepancy between the system cheque figure and the declared figure. It was thought to be due to code regression of the system caused by a fix for another bug.
5.48.3	Dates	January - September 2004.
5.48.4	What Happened	<p>POL NBSC reported to Fujitsu that a Postmaster had negative figures in his Cash Account which the Postmaster could not have entered. Fujitsu contacted the Postmaster to obtain further information so that the issue could be fully investigated.</p> <p>A discrepancy occurred between the cheque figure entered on the system and the declared cheque figure; instead of the discrepancy being cleared it was doubled, and cash was also found to be wrongly adjusted.</p> <p>It was acknowledged that this was a bug introduced as a result of code regression occurring when fixing another issue.</p>
5.48.5	Technical Analysis	Original scenario on Legacy Horizon (Riposte) cannot be replicated.
5.48.6	Testing Required?	No testing can be performed for this scenario.
5.48.7	Status	READY FOR SIGN OFF

**5.49 Bugs/errors/defects introduction by previously applied Peak fixes – Issue 3**

Item	Component	Commentary
5.49.1.	Horizon System Affected	Legacy Horizon.
5.49.2	Description	Two Peaks were raised in the Test environment and not in Live. A bug caused a discrepancy to appear on the Counter Detected Reconciliation Errors report
5.49.3	Dates	June - August 2000.
5.49.4	What Happened	Within the test environment only, a new bug that caused a discrepancy to appear on the Counter Detected Reconciliation Errors (TPSC252) report was introduced as a result of fixing an existing issue in a previous test Peak.
5.49.5	Technical Analysis	There was no impact on the Postmasters as this was in the Test environment. Additionally, the original scenario was on Legacy Horizon (Riposte), and cannot now be replicated, as Riposte is no longer part of the Horizon system.
5.49.6	Testing Required?	No testing is required to be performed for this scenario.
5.49.7	Status	READY FOR SIGN OFF

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## 5.50 23.1 Bureau de change – Issue 1

Item	Component	Commentary
5.50.1.	Horizon System Affected	Legacy Horizon.
5.50.2	Description	A Postmaster reversed a currency transaction but apparently performed the process in an unexpected manner. There was a second instance of a similar error a few months later.
5.50.3	Dates	December 2005 -July 2006.
5.50.4	What Happened	<p>The Postmaster had attempted to reverse a transaction for the sale of €1,000 (worth £750) but reversed the settlement instead. The Postmaster then attempted to compensate for the resulting discrepancy by adjusting the stock, leaving the margin for the transaction as a loss of £30.</p> <p>Fujitsu identified that the Postmaster did not reverse the transaction correctly, thereby causing the loss. Fujitsu SSC made several suggestions in the Peak: that the POL Operations Manual might be reviewed for clarity; that it was important that the POL helpdesk (NBSC) understand how the process worked so that they could diagnose such issues when they arose; and that a warning might be added if a transaction being reversed is cash.</p>
5.50.5	Technical Analysis	<p>The original scenario on Legacy Horizon cannot be replicated.</p> <p>The existing process flows should be examined to see how settlements are reversed (and why they are reversed). So, it can be determined if this process flow can be simplified.</p>
5.50.6	Testing Required?	No testing can be performed for this scenario.
5.50.7	Status	READY FOR SIGN OFF



## 5.51 23.2 Bureau de change – Issue 2

Item	Component	Commentary
5.51.1.	Horizon System Affected	Legacy Horizon.
5.51.2	Description	A Postmaster reported a discrepancy after Remming out: currency, reversing it, then re-Remming them out. This was identified as being possibly caused by the Postmaster not physically counting the cash when declaring it.
5.51.3	Dates	November 2007 - December 2007.
5.51.4	What Happened	A Postmaster reported a discrepancy of £907.97 on the main SU which was believed to relate to currency transactions: the currencies had been Remmed out, reversed, then re-Remmed out. Investigation by Fujitsu SSC indicated that the Postmaster was making incorrect cash declarations, and POL NBSC were advised of this. Analysis showed instances of cash declarations, followed by a Rem in or a transfer in that would affect the cash figure followed by a further cash declaration for the same amount as the first. This would create a discrepancy and suggests that the Postmaster was not actually counting the cash when making the second declaration.
5.51.5	Technical Analysis	Fujitsu understands this to have been caused by incorrect cash counting. The original scenario on Legacy Horizon cannot be replicated. The system was working as designed.
5.51.6	Testing Required?	No testing can be performed for this scenario.
5.51.7	Status	READY FOR SIGN OFF



## 5.52 23.3 Bureau de change – Issue 3

Item	Component	Commentary
5.52.1.	Horizon System Affected	Legacy Horizon.
5.52.2	Description	There were a number of issues with the bureau rate board display of exchange rates
5.52.3	Dates	June 2010 - April 2011.
5.52.4	What Happened	<p>A software error led to a rate being rounded down within HNG-X so that the rate displayed at a branch using HNG-X (9.269) was fractionally different from that displayed at a Horizon branch (9.269). The same rate would have been applied by the two systems to any transactions carried out, so would not have affected branch accounts. These were the details:</p> <ol style="list-style-type: none"> <li>1) In Model Office the rate boards were not showing "trailing zeroes" (so 10.1 displayed instead of 10.100). This could not have affected branch accounts.</li> <li>2) Rates showing on the Postmaster's rate board were different from those on Horizon. This was a known issue post-migration to HNG-X. The issue could not have affected branch accounts.</li> <li>3) Two issues raised by the Postmaster. Firstly, the rates on the rate board differed from those on the counter; this was due to the rate boards having a 6-character display limit, so that currencies for which the exchange rate was over 10 to £ 1 were rounded up or down to fit into the available space. There was no fix for this, it was a limitation of the rates board.</li> </ol> <p>The second issue related to an actual difference in some rates between the rates board and Horizon, beyond that explained by the rounding issue. This issue was intermittent and could be resolved temporarily by forcibly refreshing the board from the counter. It was determined that the issue had arisen following a data centre change (R4 Data Centre), after which the file feeds from First Rate that supplied the spot rate and margin values for the day, started to arrive with a gap of only five seconds or less between each other, instead of with a gap of around a minute, as they had previously. It was suspected that the rates board was failing to refresh from values as the files arrived in rapid succession. The fix was that First Rate started sending the files a few minutes apart.</p> <p>The issues in this Peak had an impact on branch accounts.</p>
5.52.5	Technical Analysis	Check that rates displayed on Rates Boards exactly match the rates used to calculate the transactions in HNG-X, and also that all rates are displayed in a consistent format with regards to decimal places and trailing zeros.
5.52.6	Testing Required?	To validate that the Rate Board displays correct information and the appearance is exactly the same as the rates used by Horizon.
5.52.7	Status	READY FOR SIGN OFF



## 5.53 24 Wrong branch customer change displayed

Item	Component	Commentary
5.53.1.	Horizon System Affected	Legacy Horizon.
5.53.2	Description	When a quantity greater than 1 was entered for a Smartpost Transaction, the quantity was not reset back to 1 when the user moved on to the settlement screen. This scenario could lead to discrepancies due to subsequent items in the session being multiplied by whatever quantity remained. Although a fix was made, a further instance was then reported, leading to a second release of the fix.
5.53.3	Dates	November to December 2005.
5.53.4	What Happened	A Postmaster noticed that incorrect quantities appeared on the settlement screen after entering stamps or postage labels on Smartpost. This could result in subsequent items in the session being multiplied by that incorrect quantity and so affect further items being sold, or the amount being tendered towards settlement. On this first report of the error a Fujitsu engineer attended the branch on the same day and changed the keyboard and screen which did not rectify the issue, so it was referred to Fujitsu SSC as a suspected software issue. Fujitsu SSC spoke to the Postmaster to obtain further information and it was identified that the issue was likely to have started following changes made to Smartpost which were implemented as part of a system release on 23 October 2005. The issue was fixed however another instance of the same problem was reported by another Postmaster in December 2005. It was realised that the fix had only been released to one group of active branches while another group had not received it. The situation was explained to the Postmaster by the Fujitsu SSC staff investigating. The fix was then released to the remainder of branches on the next day. It was also known that non-polling branches would only obtain the fix the day after they next ran Cleardesk overnight.
5.53.5	Technical Analysis	Original scenario on Legacy Horizon (Riposte) cannot be replicated.
5.53.6	Testing Required?	No testing can be performed for this scenario.
5.53.7	Status	READY FOR SIGN OFF



## 5.54 25 Lyca Top Up

Item	Component	Commentary
5.54.1.	Horizon System Affected	Horizon Online.
5.54.2	Description	Having entered a Lyca phone Top Up transaction at the counter, the counter was unable to process the authorisation response returned from E-Pay, and the Postmaster would have to recover the transaction. If that recovery was done incorrectly, then a branch account discrepancy would result, but if it was done correctly, then a discrepancy between POL and E-Pay would result.
5.54.3	Dates	August 2010.
5.54.4	What Happened	<p>When entering a Lyca mobile phone Top Up transaction, the counter was unable to process the authorisation response returned from E-Pay. This resulted in the on screen error message "unable to connect to data centre", followed by the user being logged out.</p> <p>This would lead to one of two discrepancies, depending on the actions carried out in the branch following the above error:</p> <ol style="list-style-type: none"> <li>1) If the user recovered the transaction and confirmed that it had been successful by pressing 'Yes', a shortfall would be created for the branch to the value of the E-Top Up transaction, as a successful transaction would have been recorded in the branch accounts, indicating that money had changed hands. However, no money would have been taken from the customer.</li> <li>2) If the user recovering the transaction confirmed that it had not been successful by pressing 'No', then no discrepancy would be created for the branch, as the transaction would be recorded as 'zero value' in the branch accounts, and a reversal generated for the Top Up. Instead, it would create a mismatch between the data held by POL and E-Pay. The discrepancy would have been flagged in the daily automated NB102 report. Fujitsu would then issue a BIMS Incident report to POL, summarising the particular occurrence and explaining the potential discrepancy to enable POL to reconcile the position with the branch.</li> </ol> <p>An issue was raised to document the fix and allow any further instances to be identified and investigated.</p>
5.54.5	Technical Analysis	This was determined that incorrect reference data was the cause of the error. This data has since been replaced (multiple times) within Horizon, and can no longer be duplicated.
5.54.6	Testing Required?	No testing can be performed for this scenario.
5.54.7	Status	READY FOR SIGN OFF

**5.55 26.1 TPSC 250 Report – Issue 1**

Item	Component	Commentary
5.55.1.	Horizon System Affected	Legacy Horizon
5.55.2	Description	A counter code bug caused a failure to check that a prepaid amount was not greater than the total amount, resulting in incorrect exceptions in reconciliation report (TPSC25).
5.55.3	Dates	2005
5.55.4	What Happened	This relates to an issue arising from Smartpost code failing to check that a prepaid amount is not greater than the total amount and resulted in Host system reconciliation errors. These false errors were then detected and reported on by automated reconciliation reports. The issue is limited to a reconciliation reporting issue and is separate to branch accounts. The effect would have been to create unnecessary work for Fujitsu SSC investigating false reconciliation issues.
5.55.5	Technical Analysis	The original scenario on Legacy Horizon (Riposte) cannot be replicated.
5.55.6	Testing Required?	No testing can be performed for this scenario.
5.55.7	Status	READY FOR SIGN OFF

DRAFT

**5.56 26.2 TPSC 250 Report – Issue 2**

Item	Component	Commentary
5.56.1.	Horizon System Affected	Legacy Horizon
5.56.2	Description	Five records were incorrectly written after recovery from a Data Centre communications issue resulting in incorrect exceptions being recorded in reconciliation reports (i.e. not real exceptions in branches).
5.56.3	Dates	2005
5.56.4	What Happened	This was a related but separate bug to 26.1 TPSC 250 Report Issue 1 above that also caused incorrect reconciliation exceptions to be reported, and, again, there was no impact on branch accounts.  The fault was found to be that a message with an incorrect date format could be written to a database object. This occurred when the End of Day Agent failed to communicate with Riposte, probably due to a temporary communications issue, causing the code to follow a recovery path resulting in the incorrectly formed attribute.
5.56.5	Technical Analysis	Original scenario on Legacy Horizon (Riposte) cannot be replicated.
5.56.6	Testing Required?	No testing can be performed for this scenario.
5.56.7	Status	READY FOR SIGN OFF

DRAFT

**5.57 26.3 TPSC 250 Report – Issue 3**

Item	Component	Commentary
5.57.1.	Horizon System Affected	Legacy Horizon
5.57.2	Description	The TPS total for one branch was higher than the counter total due to the totals for day 0 and day 1 being rolled into one.
5.57.3	Dates	2005
5.57.4	What Happened	<p>The TPS Total in the Reconciliation TPSC250 report was higher than the Counter Total for a single branch. It was confirmed! that the files/data sent to POL were unaffected by the issue, and that this was another case of a false error appearing on the report.</p> <p>The error was that the TPS Total rolled the totals for day 0 and day 1 into one, meaning that the Counter Total was correct for day 1, but didn't match the TPS Total, which was in itself also correct.</p>
5.57.5	Technical Analysis	The original scenario on Legacy Horizon cannot be replicated. Branch terminals no longer act in this manner, as the TPS report was comparing to the figures stored within the counter - these figures are now in BRDB. The mechanisms are now very different - both the source of data and the reporting have changed.
5.57.6	Testing Required?	No testing can be performed for this scenario.
5.57.7	Status	READY FOR SIGN OFF

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**5.58 26.4 TPSC 250 Report – Issue 4**

Item	Component	Commentary
5.58.1.	Horizon System Affected	Legacy Horizon
5.58.2	Description	Exceptions in a reconciliation report for a branch led to identification that an individual counter had errors and it was replaced.
5.58.3	Dates	2005
5.58.4	What Happened	The TPS Total in the TPSC250 report was showing as higher than the Counter Total for a single branch. Investigation showed that the error was caused by Riposte errors on counter 1 at the branch. The branch counter was replaced.
5.58.5	Technical Analysis	Original scenario on Legacy Horizon (Riposte) cannot be replicated.
5.58.6	Testing Required?	No testing can be performed for this scenario.
5.58.7	Status	READY FOR SIGN OFF

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## 5.59 26.5 TPSC 250 Report – Issue 5

Item	Component	Commentary
5.59.1.	Horizon System Affected	Legacy Horizon
5.59.2	Description	A particular Smartpost transaction type produced intermittent exceptions on reconciliation reports.
5.59.3	Dates	2008 - 2010.
5.59.4	What Happened	<p>A single branch showed that the TPS Total and Counter Total Values for the Number and Absolute Quality columns were the same, but with a difference in the Absolute Value, which is greater than the TPS value. This was a mismatch between the TPS Absolute Value and Counter Absolute Values.</p> <p>There was a problem with Bulk Mails was that the Credit/Debit tags were written as double that of the Sale Value. This does not cause an impact upon the branch as these values are only used in the calculation of the reconciliation report at the data centre and did not affect the information sent to POL or the branch accounts.</p> <p>The incidents had occurred where 1) the session did not net to zero, in which case an incomplete summaries and receipt and payments mismatch would result, or 2) in which the transaction message was not written but the balancing message was written.</p> <p>This was then picked up in the datacentre counter measures and would cause a receipts and Payments mismatch at the branch.</p>
5.59.5	Technical Analysis	The original scenarios on Legacy Horizon (Riposte) cannot be replicated.
5.59.6	Testing Required?	No testing can be performed for this scenario.
5.59.7	Status	READY FOR SIGN OFF

**5.60 27 TPS**

Item	Component	Commentary
5.60.1.	Horizon System Affected	Legacy Horizon
5.60.2	Description	Smartpost wrote slightly corrupt transactions which led to incorrect exceptions reporting but did not impact branch accounts.
5.60.3	Dates	Between 2006 and 2010.
5.60.4	What Happened	<p>A Peak was opened following the detection of a Smartpost transaction in which the Credit attribute doubled against the sale value. The attribute concerned was used to calculate the 'EPOSSDailyRecon' absolute values, which in turn triggered the TPSC250/257 exceptions in the case of a mismatch with the Host generated Totals. A check of the messagestore for non-zero sessions found none, so it was concluded that there was no balancing problem for the branch concerned.</p> <p>A KEL was raised as a result. This bug affected Smartpost transactions which were either missing the grammar attribute and / or had a corrupted grammar attribute. The grammar attribute is used to calculate the value for the reconciliation reporting, meaning that as the attribute was either missing or corrupted then reconciliation reporting errors were produced. Of the 40 Peaks identified that reference the KEL, the majority (36) had Sale Values that netted to zero and therefore, required no reconciliation. The remaining four required corrections for small amounts to be made to the 'TPS_POL_FS_Summaries_Incomp' table, which were carried out under OCRs.</p>
5.60.5	Technical Analysis	Original scenario on Legacy Horizon (Riposte) cannot be replicated.
5.60.6	Testing Required?	No testing can be performed for this scenario.
5.60.7	Status	READY FOR SIGN OFF



## 5.61 28 Drop & Go

Item	Component	Commentary
5.61.1.	Horizon System Affected	Horizon Online.
5.61.2	Description	A Drop & Go transaction failed to credit the customer's card, so was retried, resulting in the branch being debited twice, hence creating a shortfall.
5.61.3	Dates	June 2017, August 2018.
5.61.4	What Happened	<p>A clerk initiated a Drop and Go transaction for £100 which failed due to timeouts, but then a success was displayed, so the clerk settled the transaction. The customer checked their balance and stated that the top up had not been processed. The clerk then performed another Drop and Go transaction that was successful.</p> <p>This resulted in a £100 shortfall for the branch as Horizon recorded the top-up twice. Reconciliation between the Horizon feed and the Accenture Common Digital Platform (COP) system identified that only one top-up had been received by Accenture COP, but two top-ups were present in the Horizon Batch Feed. The second Horizon transaction matched the COP transaction, confirming the problem was with the first transaction.</p>
5.61.5	Technical Analysis	There have been changes to the process of Drop & Go since 2018, the online interaction has been changed also.
5.61.6	Testing Required?	If a Top Up transaction behaves correctly in the instance of a network time out, where the payment does not reach the CDP, and the customer is not charged for the transaction, then this item has been correctly resolved.
5.61.7	Status	READY FOR SIGN OFF



## 5.62 29.1 Network Banking – Issue 1

Item	Component	Commentary
5.62.1.	Horizon System Affected	Legacy Horizon.
5.62.2	Description	An intermittent fault, most likely attributed to the line provided by BT and Energis, caused a transaction to not complete. A shortfall in the branch account was caused by the Postmaster handing over the money despite failure.
5.62.3	Dates	October - November 2004.
5.62.4	What Happened	<p>A Postmaster reported that their ISDN line (operated by Energis and BT) was down and had been having connectivity issues for two weeks. The Postmaster also reported issues with two customers' pensions transactions for £90 and £50, in which the transactions had been declined. The two customers had returned to the branch the following day stating that the money had been taken from their accounts, despite the transactions having been declined the day before.</p> <p>Fujitsu SSC was able to make a voice call on the line, and also undertook analysis of the network banking messages recorded in the messagestore.</p> <p>The root cause was identified as being an intermittent fault with the BT ISDN line. Further checking with the Postmaster confirmed that one of the transactions (£90) had been correctly refunded to the customer, the other transaction (£50) was refunded but there was a delay in it appearing in the customer's account, which resulted in them complaining to the Postmaster. As a result, the Postmaster handed the customer £50 which lead to a shortfall for the branch.</p>
5.62.5	Technical Analysis	The original scenario on Legacy Horizon cannot be replicated. It is recognised that communications failures (network issues) can still occur today however this is a known risk of distributed locations of service. This individual issue was a one-off and cannot be duplicated.
5.62.6	Testing Required?	No testing can be performed for this scenario.
5.62.7	Status	READY FOR SIGN OFF

**5.63 29.2 Network Banking – Issue 2**

Item	Component	Commentary
5.63.1.	Horizon System Affected	Legacy Horizon.
5.63.2	Description	Intermittent breaks in OLS (Online Services) due to, problems with a BT line. Although this issue meant that no Network Banking activities could be carried out while the service was down, no specific transactions are referred to in the related Peak.
5.63.3	Dates	January 2010.
5.63.4	What Happened	A Postmaster reported a temporary communications issue, potentially caused by adverse weather. The issue was investigated by Fujitsu, but, after a short period, the communications were restored, and the Postmaster agreed the Incident could be closed.
5.63.5	Technical Analysis	The original scenario on Legacy Horizon cannot be replicated. It is recognised that communications failures (network issues) can still occur today however this is a known risk of distributed locations of service. This individual issue was a one-off and cannot be duplicated.
5.63.6	Testing Required?	No testing can be performed for this scenario.
5.63.7	Status	READY FOR SIGN OFF

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## 6 Appendix

### 6.1 Fujitsu Test Closure Report



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### 6.2 POL Test Closure Report



POL\_Test Closure  
Report - Historical KEL

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