

Response to Spot Report SR001

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1. Introduction

This spot review relates to an issue raised by John Armstrong the SPMR in Lepton Branch (FAD Code 1913204) relating specifically to transactions carried out on Horizon Online on 4th October 2012. The issue is headed “Debit Cards – Cash Withdrawals and GIRO payments”.

There has been correspondence between the Branch and FSC on this subject in December 2012 and Fujitsu had an informal request to investigate the transactions on 31/1/13. As this was within 6 months of the transaction, then the data was still available in the support database and a response was provided to Post Office Ltd as to what had occurred. Also a formal ARQ response was provided which supported this information.

This report provides information as to what was alleged by the SPMR (see section 2) and a detailed analysis of what actually occurred as shown in the system logs (section 3). Section 4 then describes how recovery operates on Horizon and Section 5 identifies those points in the report which are not supported by the Logs. Finally section 6 provides a response by the Financial Services Centre of Post Office Ltd as to why it was not necessary to carry out the thorough investigation that has now taken place.

It should be noted that some of the information in this report has been found in the “raw logs”. These are not normally provided in response to queries or examined. However in this case they were passed to Second Sight and I have looked at them to provide some more detailed responses.

2. The SPMR’s view of what happened

The following is an extract from the Spot Report saying what the SPMR says happened:

The SPMR reports that there were intermittent internet connectivity problems (also reported to Chesterfield) on 4 October 2012. Online payments and withdrawal transactions were sometimes successful but also failed on occasions. It is possible that Horizon was partially operating through its back-up (mobile phone) connection. Some card payments had to be attempted two or three times before being accepted. At approximately 10:32 a customer tried to pay his £76.09 BT phone bill with his LTSB card but was not successful. The customer then withdrew £80.00 cash and used this to pay the phone bill. The SPMR stamped the customer’s phone bill to evidence receipt of the cash, returning change of £3.91. Several weeks later, the customer returned from holiday to find his phone had been cut off due to non-payment. The SPMR’s

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examination of the Transaction Log showed that all components of the transaction had been reversed. The SPMR did not initiate those reversals nor did he receive any reversal notifications. The SPMR raised this as an issue with Chesterfield but was told that due to cost issues Horizon transaction data could not be requested. It was implied that the SPMR had stolen the money and he was told to make good the shortage. This meant that 2 people had paid the phone bill (the customer, who handed cash to the SPMR and the SPMR on instructions from Chesterfield). The SPMR was informed that he should have a surplus of £76.09 due to the reversal of the transactions. The SPMR disputes this conclusion, but the more important issue here is the automated, unreported, reversal of the transactions.

3. What the System Logs show

Note that the system logs show all times in GMT rather than local time. On 4th October 2012, GMT was 1 hour behind Local Time (ie BST). I have quoted the times used in the logs below. Therefore the mention of 10:32 by the SPMR above relates to 09:32 in the logs.

Alternatively, I could go through the description below and change all times to BST. My feeling was that it is simpler (and less error prone) to keep the description close to that used in the evidence.

There do appear to be 2 cases on 4th October where the system had a forced Log Out that resulted in a recovery Log On being required. This supports the statement above “The SPMR reports that there were intermittent internet connectivity problems (also reported to Chesterfield) on 4 October 2012”. The two “Recovery Log Ons” occurred at 08:51:40 (when no recovery was required) and at 09:37:20 when recovery was required as will be described later in this report.

The following table looks at the number of online requests for either Banking or Credit / Debit Card Payments that appear to have timed out:

Date	Total
04/10/2012	13
05/10/2012	4
08/10/2012	11
10/10/2012	2
11/10/2012	2
16/10/2012	1
17/10/2012	2
18/10/2012	2
19/10/2012	3
22/10/2012	1
23/10/2012	1
25/10/2012	2
Grand Total	44

This supports the comment regarding intermittent connectivity problems on 4th October. I note that there were similar problems on 8th October.

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I can see 4 examples prior to 09:30 where either a Banking withdrawal or a Credit / Debit card payment initially failed and was successful on the second attempt. There was also one example where there were two failures for a card and presumably the customer or the SMPR gave up. This supports the statements “Online payments and withdrawal transactions were sometimes successful but also failed on occasions.” and “Some card payments had to be attempted two or three times before being accepted”

The raw logs do have statistics regarding times taken to connect to the Data Centre and also an indication of the type of Comms currently in use. From these it can be seen that the Branch normally operates using ADSL, but at the time of the failure that is being examined it appears to be using a mixture of O2G and O3G (ie mobile networks) presumably due to a failure of the main ADSL connection. This supports the statement “It is possible that Horizon was partially operating through its back-up (mobile phone) connection.”. This may have been visible to the user as a slower than normal response time.

The key transactions are those described as occurring at 10:32 (ie 09:32 GMT).

I’ll start at 09:26 and show the sequence of baskets processed between that time and 09:40.

1. 09:26:30: Session 537799 contained two transactions: A Card Account Withdrawal (Withdraw Limit) for £271.54 and a corresponding Cash Settlement.
2. 09:27:34: Session 537800 contained three transaction: A failed Card Account Withdrawal (Withdraw Limit) immediately (09:28:13) followed by a successful Card Account Withdrawal for £141.80 using the same card and a corresponding Cash settlement.
3. 09:27:27: Session 537801 contained a single transaction: A failed Visa Debit card payment. This payment had been requested for £141 and had failed due to no response having been received by the counter within the timeout period (33 seconds). Clearly an attempt had been made to purchase something or pay for a service for £141, but when the Debit card payment failed, the original transaction was voided and the basket completed.

<i>The value of £141 is only visible in the raw logs.</i>

4. 09:31:56: Session 537802 contained 2 transactions. A Halifax Current Account Withdrawal for £200 followed by the corresponding cash settlement. It would appear that the card used here was the same as the one used in the previous session when the Debit Card payment failed.
5. 09:32:52: Session 537803 contained 3 transactions. A bill payment to BT for £76.09 followed by a Cash Withdrawal for £80 using a Lloyds TSB card and £3.91 cash for the difference.
6. 09:37:19: User JAR001 Logged On again
7. 09:37:44: Session 537805 generated by the system as part of the Recovery that takes place during Log On and contains 3 transactions. The first 2 are the Reversals for the BT Bill Payment and Cash transactions in session 537803, and the 3rd is a Cash balancing transaction for £80 to correspond to the £80

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cash withdrawal which should have been treated as successful at the time of failure. This is why “The SPMR’s examination of the Transaction Log showed that all components of the transaction had been reversed.”

It should be noted that the statement is not quite correct. The Banking Withdrawal for £80 has **not** been reversed.

8. 09:40:19: Session 537806 contained 2 transactions. A Card Account Withdrawal (Withdraw Limit) for £229.72 and a corresponding Cash Settlement.

Looking at the stats recorded with the Recovery basket at Point 7 above, it can be seen that there were a number of issues during session 537803:

These stats are only visible in the raw logs.

- a. The Authorisation for the Cash Withdrawal was successful and was done on a 3G comms Connection.
- b. The subsequent attempt to update the Recovery information in the basket after completing the Banking Transaction failed due to a timeout on a 2G comms connection
- c. There are then 4 attempts (at roughly 45 second intervals) to store the completed basket to the Data Centre. The first 2 use a connection type of 2G and the other 2 use a 3G comms connection. They are all marked as having failed. (Though clearly one of the attempts had resulted in data being successfully saved in the Data Centre.)

Moving on to the end of the day I note the following Cash Declarations were made:

- A. At 16:31:27 a Declaration was made for £22,160.54 followed by a variance check which indicated a discrepancy (loss) of £1,237.16.
- B. At 16:32:46 a second cash Declaration was made for £23,460.54 followed by a variance check which indicated a discrepancy (gain) of £64.84.

Looking forwards, the following variance check discrepancies were recorded:

Date	Variance Check Discrepancy	Loss or Gain
04/10/2012	£62.84	Gain
05/10/2012	£66.15	Gain
06/10/2012	£76.98	Gain
08/10/2012	£71.91	Gain
09/10/2012	£69.05	Gain
10/10/2012	£63.99	Loss

The Stock Unit was Balanced and rolled over from Balance Period 3 into Balance period 4 on 10th October and the Discrepancy committed to the accounts. (There was also a £37.75 discrepancy Gain on stamps at the same time.)

4. Explanation of Recovery

The fact that a Log On (and Recovery) occurred at point 6 above indicates that there must have been a failure just before that point and the User would have been informed

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of a Forced Log Off. The fact that Recovery reversed most of the last Session recorded prior to the recovery indicates that the following sequence of events occurred. This is confirmed by the statistics described above at point c in section 3 above.

The user must have been aware that there was a problem in this circumstance. What they would have observed was the following:

1. Having completed the Bill Payment and Cash Withdrawal, the User would have either selected “Settle” or “Fast Cash”. If Settle was selected then they would again have selected either “Cash” (and keyed in the amount) or selected Fast Cash.
2. This would have completed the Basket and attempted to save the basket to the Data Centre.
3. Following a failure of the first attempt, the system would automatically carry out a retry and attempt to save the basket to the Data Centre again.
4. Following the failure of the second attempt, a message would have been displayed to the User informing them that there was a failure to contact the Data Centre and did they wish to Retry or Cancel.
5. The fact that there were 4 attempts to contact the Data Centre, indicates that the User must have selected Retry and so the system would have made a 3rd attempt to save the basket to the Data Centre.
6. Following a failure of the third attempt, the system would automatically carry out a retry and attempt to save the basket to the Data Centre yet again.
7. Following the failure of the fourth attempt, a message would have been displayed to the User again informing them that there was a failure to contact the Data Centre and did they wish to Retry or Cancel.
8. The fact that there were only 4 attempts to contact the Data Centre indicates that the user must have selected Cancel this time. This would have resulted in a Forced Log Out. What this means is:
 - a. System would have recalculated the basket and would have zeroized any non-recoverable transactions – in this case the BT Bill and the Cash “change”
 - b. It would then have resettled the basket indicating that £80 should be handed to the customer
 - c. It would then have printed out 3 copies of the Disconnected Session Receipt which would indicate this.

<i>3 copies as follows: one for Customer, one for Branch records and one to attach to the Till to aid with recovery.</i>
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- d. It would **not** have printed out the AP receipt for the BT Bill.
9. The system would then display the Log On screen.
10. Again the User must have been aware of this as at 09:37:19 they Logged on again

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11. As part of the Log On process, the system checks the identity of the last basket successfully saved at the Data Centre (which appears to be 537803) and compares it with the identity of the last Basket successfully processed by the counter (in this case 537802). As the last basket saved in the Data Centre has a higher number than that considered to be the last successful basket processed by the counter, Recover would then repeat the process that the counter carried out at step 8 above. This would have generated the Recovery Basket stored at 09:37:44 as Session 537805. A Recovery receipt would have been printed to indicate this.

5. What the Logs don't support

There are some parts of the initial statement that are not supported by the logs. Specifically:

1. "At approximately 10:32 a customer tried to pay his £76.09 BT phone bill with his LTSCB card but was not successful. The customer then withdrew £80.00 cash and used this to pay the phone bill."

There is no indication of any attempt to pay this by card. Closer examination of the Business Rules show that it is not permissible to pay for a BT Phone Bill with a Credit Card. However the LTSCB card used for the Banking withdrawal was a Debit (and not a Credit) Card. It could be that an attempt was made to settle with a different Credit Card and the system indicated that it was not acceptable. There is no record of any attempt to use the LTSCB card as a Payment card. Also, when checking for a failed card transaction in an earlier basket (point 3 in section 3), the value of the failed payment was £141 and not £76.09, this couldn't be the failure referred to.

It would appear that the only attempt to pay this BT Bill was with the withdrawn cash.

2. "The SPMR stamped the customer's phone bill to evidence receipt of the cash, returning change of £3.91.". This may be what the SPMR did. However if so he was not following the instructions provided by Horizon as outlined in section 4.

As explained in section 4, there were a number of indications that the transaction was not successful, and so the Bill payment had not been recorded:

- a. The fact that the SPMR was asked twice about Retrying after failed Data Centre interactions
- b. The fact that 3 copies of the Disconnected Session Receipt would have been printed out on the counter printer
- c. The fact that no AP receipt to confirm payment of the Bill was printed
- d. The fact that the User had to Log On again and a Recovery Receipt was printed.

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3. "The SPMR did not initiate those reversals nor did he receive any reversal notifications.". While I agree that the SPMR did not initiate the reversals, he would have been notified. When Recovery was carried out (point 7 in section 3) a Receipt would have been printed. Also messages are displayed to the User during the recovery process.
4. "The SPMR raised this as an issue with Chesterfield but was told that due to cost issues Horizon transaction data could not be requested. It was implied that the SPMR had stolen the money and he was told to make good the shortage." This is addressed in section 6 below.
5. "This meant that 2 people had paid the phone bill (the customer, who handed cash to the SPMR and the SPMR on instructions from Chesterfield)". The logs show that if the customer has paid the bill, this payment was not recorded on Horizon. If in fact the SPMR had received the payment and not recorded it on Horizon, then there should be a corresponding surplus of cash in Horizon.

It was to address this surplus that FSC raised the Transaction Correction.
6. "The SPMR was informed that he should have a surplus of £76.09 due to the reversal of the transactions.". The figures in section 3 relating to cash declaration indicate that there was a surplus of around £63 that day.

<i>I don't have logs for the previous day.</i>
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7. "The SPMR disputes this conclusion, but the more important issue here is the automated, unreported, reversal of the transactions.". The Automated Reversal is explained in section 4. That section also explains that the SPMR should have been aware of this for a number of reasons.

6. FSC's Input

Post Office Ltd's Financial Services Centre (FSC) need to respond to the 2nd bullet under second sight's preliminary conclusions:

"The decision by P&BA not to examine the Horizon detailed transaction data on cost grounds delayed or denied the SPMR the opportunity to process the transactions correctly or understand what happened."

- Under the terms of the current contract with Fujitsu Post Office Ltd are entitled to request Fujitsu to provide detailed branch historical transactional data. The number of requests that can be actioned within a month without additional charge is capped at 24.
- The Security team of Post Office Ltd manage this process. Access to this data is intended to support specific Security investigations which may ultimately require this data to be presented before a court of law.
- Finance Service Centre is able to request such data but has no budget to fund this should a request breach the cap.

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- Such a request would inevitably create a delay in providing the branch with a meaningful reply.
- Finance Service Centre was able to informally determine from Fujitsu why there was a break of continuity in the transaction session numbers as raised by Mr Armstrong.
- Finance Service Centre believed they had an adequate understanding of the event to provide a response to the points made in the letter received:
 1. There was no reversal carried out in branch.
 2. A loss of connectivity caused the problem.
 3. It is understandable that the branch may have got confused.
 4. The lack of receipt indicates that the bill had not been paid.
 5. There is no actual financial loss to the branch.
- There was no response to the letter sent on 14th December 2012 to suggest the response had not addressed the concerns raised.
- A transaction correction had already been issued to correct the transaction before the letter was sent to the Relationship Manager so the decision did not prevent “the opportunity to process the transactions correctly.”
- Finance Service Centre does not have access to transactional information to evidence a loss of connectivity or the generation of disconnected session receipts. It is acknowledged that such visibility would enable a more complete response to be available under business as usual enquiries of this nature.