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## Receipts and Payments Mismatch

### 1. Introduction

The purpose of this note is to document a request that we have had from Post Office in terms of presenting details of what happened as a result of a bug in HNG-X in September 2010 which caused a Receipts and Payments mismatch and also resulted in Discrepancies being lost.

The background to this is the fact that there was a BBC documentary broadcast on Monday 7<sup>th</sup> February 2011 reporting on postmasters being unhappy about being pursued for losses by Postmasters on Horizon.

It should be noted that the issues described here relates to HNG-X (Horizon Online) and that the implementation of the accounting mechanisms in the two systems is totally different (but they do produce the same reports and support the same business process).

This version of the note reflects my current understanding of Post Office Ltd's requirements.

### 2. The Original Problem

*This is extracted from a note produced at the time and shared with Post Office Ltd called 'Correcting Accounts for "lost" Discrepancies' in document Lost Discrepancies.doc.*

PC0204263 describes a problem with SU Balancing that will result in a Receipts and Payments mismatch. A fix was created for this Peak.

*The fix has subsequently been fully deployed.*

However any branch encountering the problem will have corrupted accounts and Peak PC0204765 is a Master Peak to record all affected branches and also to define the process for correcting the accounts.

The problem occurs as part of the process of moving Discrepancies into Local Suspense.

When Discrepancies are found when rolling a SU over into a new TP, then the User is asked if they should be moved to Local Suspense (MSG31316). Should they Cancel at this point the Discrepancy is zeroised in the Local Cache (but nothing is written to the BRDB). Note that there is no corresponding Balancing Transaction generated in the Local Cache and so the Local Cache is in an Unbalanced state.

If at the next screen (where the options are to: print or preview the trial balance again; to re-attempt the rollover; or to cancel the rollover) the rollover is Cancelled, then no harm is done. However if the Rollover is re-attempted at this point, the rollover will continue with the corrupted Local Cache.

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*In practice this re-attempted rollover has usually been to a new BP, but it is the reattempted rollover that results in the corruption.*

This has the following consequences:

- There will be a Receipts and Payment mismatch corresponding to the value of Discrepancies that were “lost”

Note that if the User doesn’t check their Final Balance Report carefully they may be unaware of the issue since there is no explicit message when a Receipts and Payment mismatch is found on the Final balance (the User is only prompted when one is detected during a Trial balance)

- The Local Suspense will have no knowledge of this specific Discrepancy
- The Opening Figures for Discrepancies in the new Period will be zero rather than the actual value of the Discrepancy
- The data used for the BTS will also have a zero value for Discrepancies at the end of the period. When the BTS is produced this will result in a similar Receipts and Payment mismatch

Note that if the bug was not present, then the Discrepancy would have been transferred to Local Suspense and that would have been cleared, so there are a number of things wrong with the BTS. However the impact of the bug is that the Discrepancy is lost and so the simplest way to correct it is to re-introduce the lost Discrepancy in a subsequent period and allow the normal rollover process to correct it.

*Note that if more than one SU has the issue then the value will be the total value of all errors.*

- The level of Discrepancies when viewed at the Branch will no longer match the level as seen in POL SAP or POL MIS

The problem appears to have affected 62 Branches and details have been provided to Post Office Ltd of all the BTS and SU Rollover Reports for these Branches until they were clear of the issue.

### 3. What Post Office want now

Post Office are now looking to put together a “storyboard” showing the precise steps all the way through the problem, consisting of screen shots and snapshot reports from the system. This will assist in explaining the issue to senior management and, if necessary, the Press.

Post Office are seeking help from Fujitsu in doing this.

Fujitsu propose offer to do the following to meet that requirement:

1. Select one of the affected Branches

*POL should be able to select a branch from the information they have. POL have responded that Fujitsu should select any of the 62 affected branches.*

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2. For this Branch, we need to describe exactly what happened in terms of screens that were displayed and reports that were actually produced. The reports that were produced are already available in the information we have provided to Post Office Ltd. We should be able to put together screenshots from a test or development system.
3. In addition, we can identify at key points in the sequence what the state of the Branch's accounts actually were, by mocking up what a SU Balance Snapshot would have looked like at that point of time. This can be done by taking the version of the report we have provided to POL and editing it to reflect the changed figures at that point in time.
4. This information can then be presented to POL either as a document or a PowerPoint slide show.

*POL need to let us know which they want. POL have chosen 2, 3 and 4 to be presented in a document format followed with a walkthrough. The information is presented in section 4 below and a walkthrough will be arranged accordingly.*

#### **4. Detailed Scenario**

Branch 135026 has been chosen to illustrate the problem. This Branch has two Stock Units, AA and ATM. The issue occurred during TP 09 when rolling over Stock Unit ATM from BP 01 to BP 02 on 23<sup>rd</sup> September 2010.

Stock Unit ATM is an Individual Stock Unit.

A variance between the daily cash declarations and the system figures of £88.77 had first been identified on 16<sup>th</sup> September (i.e. the first day after rolling over into TP 09 BP 01). Such a variance was consistently reported each time a Cash Declaration was made.

What I have attempted to do below is to reproduce the sequence of activities and screens that the User (JTH001) would have gone through when carrying out the Balancing process.

*We have attempted to create accurate reports as they would have appeared at the time. The screens have been recreated as accurate as possible. The Date and Time at the top of each screen have not been adjusted and reflect the time that the transaction sequence was ran on the test system. All attempts have been made to ensure that the values in other parts of the screen are accurate.*

##### **4.1 Balancing SU ATM**

When Balancing SU ATM, the following would have occurred:

The User JTH001 would have gone to the Back Office Stock Balancing menu.

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Home	<b>Stock Unit Balancing Home</b>					Tue 15 Feb 11 09:43	Help
Select function							Screen Entry
Stock Balancing	F1 <b>Declare</b>						T1
Spoilt Stock	Cash	Stamps	Stock	Currency	Trav Cheques	Suspend Resume Lock	
F2	21	22	23	24	25	T2	
Destroyed Stock	F3 <b>Balance</b>		<b>Stock</b>		Total		
	Snapshot Report		Adjust	Negative	£ 0.00		
	41	42	44	45	Quantity	Previous	
	<b>Outstanding</b>				1	PREV	
	Declarations	Summaries			Remove Item	Cancel	
	62	64			F9	UNDO	
	<b>Other</b>				View Full Basket	Back Space	
	Cash Variance	Declaration List	Discrepancies		F10 RECPT	F14	
	81	83	85		Calculate	Quantity	
					F11	F15	
JTH001	TP: 09	BP: 02	SU: ATM Individual		Fast Cash	Enter	
					F12	F16	

Figure 1 - Stock Balancing Menu

Figure 1 shows the Stock Balancing Menu.

On this menu, the Stamps button was used to declare stamps at £0.00

Then the Cash button was used to Declare Cash at £12,630.00. This figure is more than the System Cash figure, and so a message was displayed indicating that there was a discrepancy and then a screen showing the gain as in Figure 2.

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Home	<b>Declare Cash Holding</b>			Tue 15 Feb 11 09:28	Help
TBC-024:Review declaration details then press Enter					
History	<b>Type</b>	<b>Amount</b>	<b>Variance</b>		Screen Entry
F1	cash	£ 88.77	Gain		T1
					Suspend Resume Lock
					T2
				<b>Total</b>	
				<b>£ 0.00</b>	
				<b>Quantity</b>	Previous
				<input type="text" value="1"/>	PREV
	Remove Item	Scroll Up	Scroll Down		Cancel
	F9	←	→		UNDO
	View Full Basket	Receipt	Front Office		Back Space
	F10	RECPT	F14		
	Calculate	Logout	Quantity		Enter
	F11	F13	F15		
	Page Up	Page Down	Page 1/1	Fast Cash	PLU
				F12	Settle
					F16
JTH001	TP: 09	BP: 01	SU: ATM Individual		K:

Figure 2 - Cash Gain

The User would then have selected Enter to confirm this and had the option to print the Declaration report and would then have been returned to the Balancing menu as shown in Figure 1.

Then the Balance Report button was used to Balance the Stock Unit.

The first screen shown when balancing the Stock Unit is as in Figure 3.

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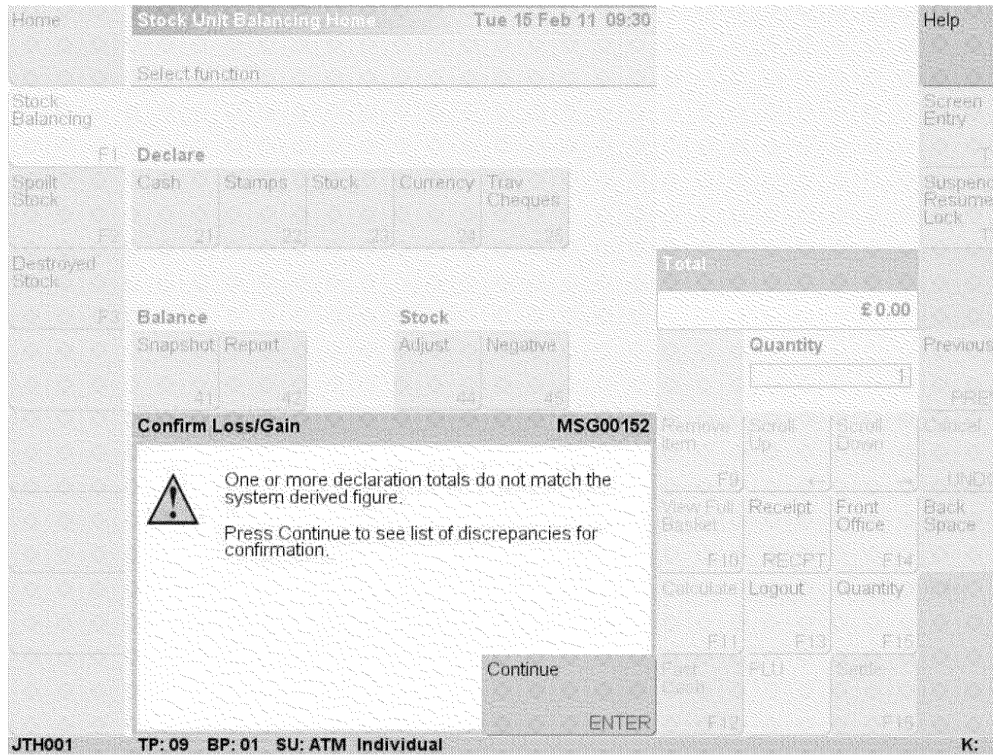


Figure 3 - Discrepancies Exist

This indicates that there are one or more discrepancies between the System Figures and the Declarations that have been made.

The User would have selected Continue at this point.

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Home	<b>Balance Stock Unit Report</b>			Tue 15 Feb 11 09:31	Help
BAC-761: Press Enter to continue					
History	<b>Product Name</b>	<b>Discrepancy</b>	<b>Gain / Loss</b>	Screen Entry	
F1	Cash	£ 88.77	Gain	T1	
				Suspend Resume Lock	
				T2	
	<b>Total</b>				
	£ 0.00				
	<b>Quantity</b>			Previous	
	<input type="text" value="1"/>			PREV	
	Remove Item	Scroll Up	Scroll Down	Cancel	
	F9	←	→	UNDO	
	View Full Basket	Receipt	Front Office	Back Space	
	F10	RECPT	F14		
	Calculate	Logout	Quantity	Enter	
	F11	F13	F15		
	Page Up	Page Down	Page 1/1	Fast Cash	PLU
				F12	Settle
					F16
JTH001	TP: 09	BP: 01	SU: ATM Individual	K:	

Figure 4 - Discrepancy List

Figure 4 is then displayed with a list of the one discrepancy that was identified. Note that this is the same as he would have seen in Figure 2.

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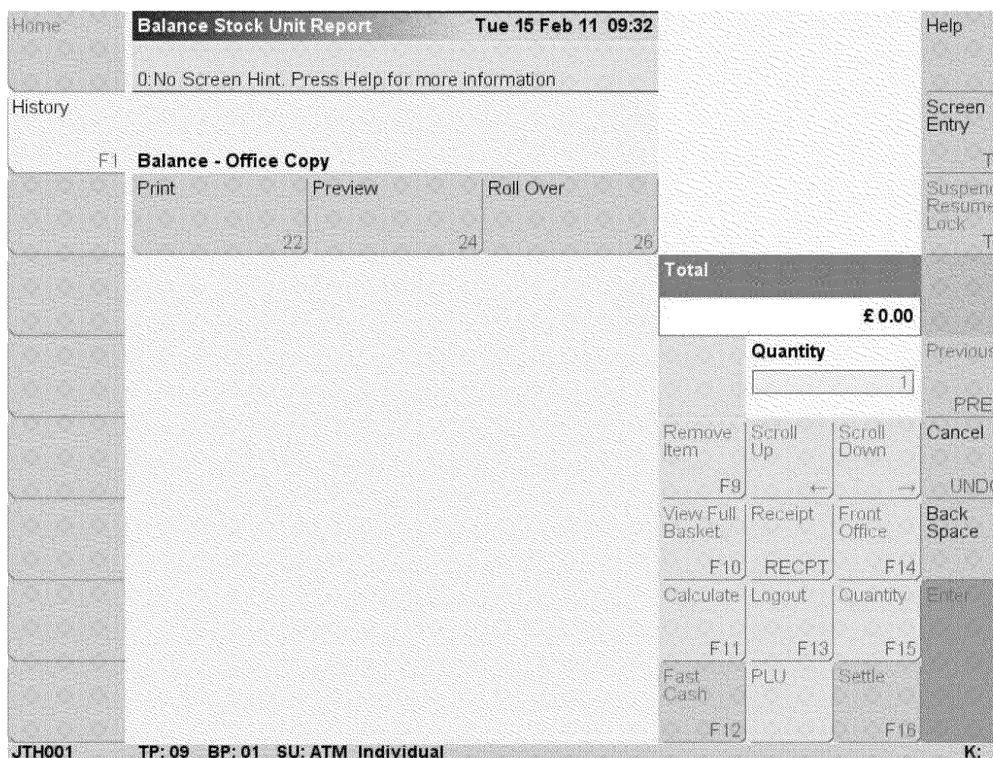


Figure 5 - Print Trial Balance Screen

Figure 5 is then displayed allowing the user to print (or preview) the Trial Balance.

Until the Trial Balance has been printed or previewed, then the Roll Over button is not available.

At this point the Trial Balance would have been printed and it would have looked like:

```

Little Thurrock                FAD: 1350269
09:32 23/09/2010             TP: 09 BP: 01 SU: ATM
Trial Balance - Office Copy

*****Discrepancies in this Account*****
*Discrepancy OVER                88.77   *
*Discrepancy SHORT              0.00   *
*                                -----*
*Nett discrepancy                88.77   *
*                                -----*
*****

VALUE ITEMS &MOP      VOLUME      VALUE
Cash                  12630.00
Cash                  12630.00
    
```

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Time . . . . .AM/PM +-----+  
\*\*\* END OF REPORT \*\*\*

Figure 6 - Original Trial Balance Report

Having printed the trial balance the user would then have selected Roll Over.

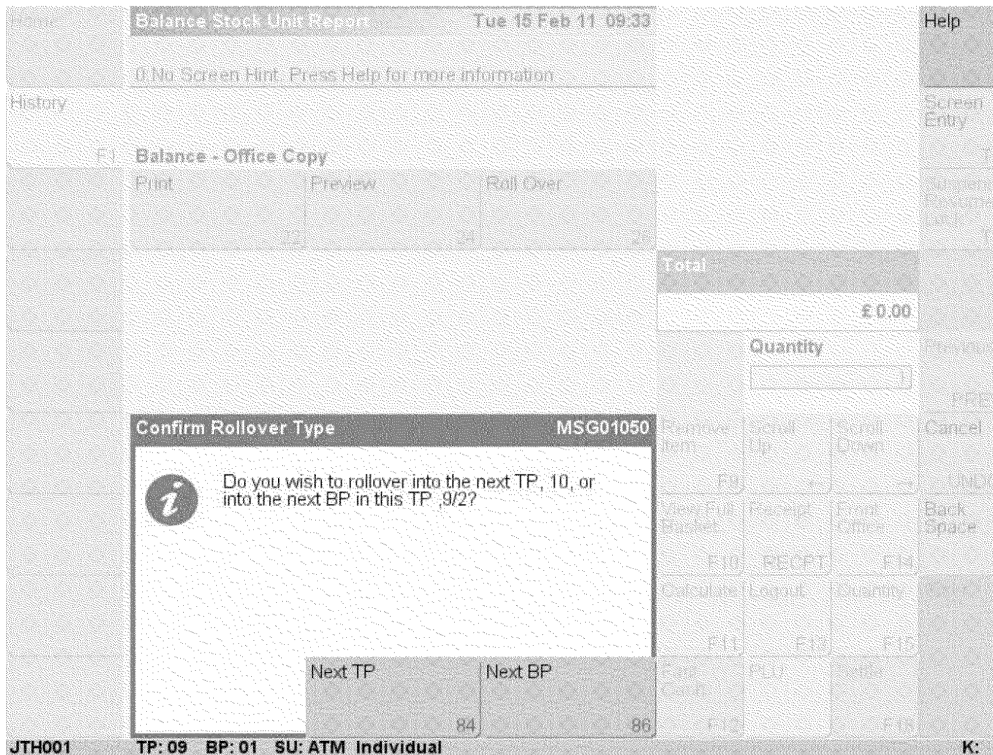


Figure 7 - TP or BP Rollover?

Figure 7 would have been displayed giving the User the option of rolling over into either the next TP (TP 10) or the next BP (BP 02 of TP 09).

In order to encounter the problem the user would have selected a new TP and so have selected the Next TP button. Note that this is incorrect as it is not time to rollover into TP 10 for another 3 weeks.

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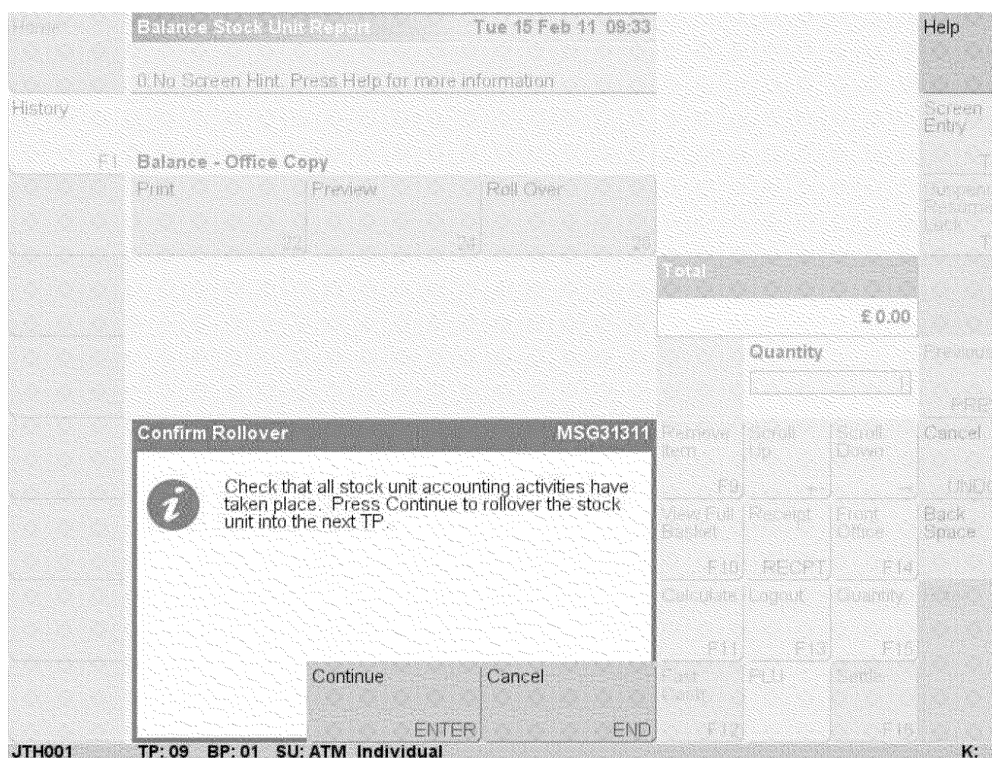


Figure 8 - Prepare for new TP

Figure 8 would be displayed requesting the user to confirm that all relevant Business Processes to roll into a new TP have been followed. They would then have selected Continue to progress. Note that if the User had realised their error and Cancelled at this point all would have been well.

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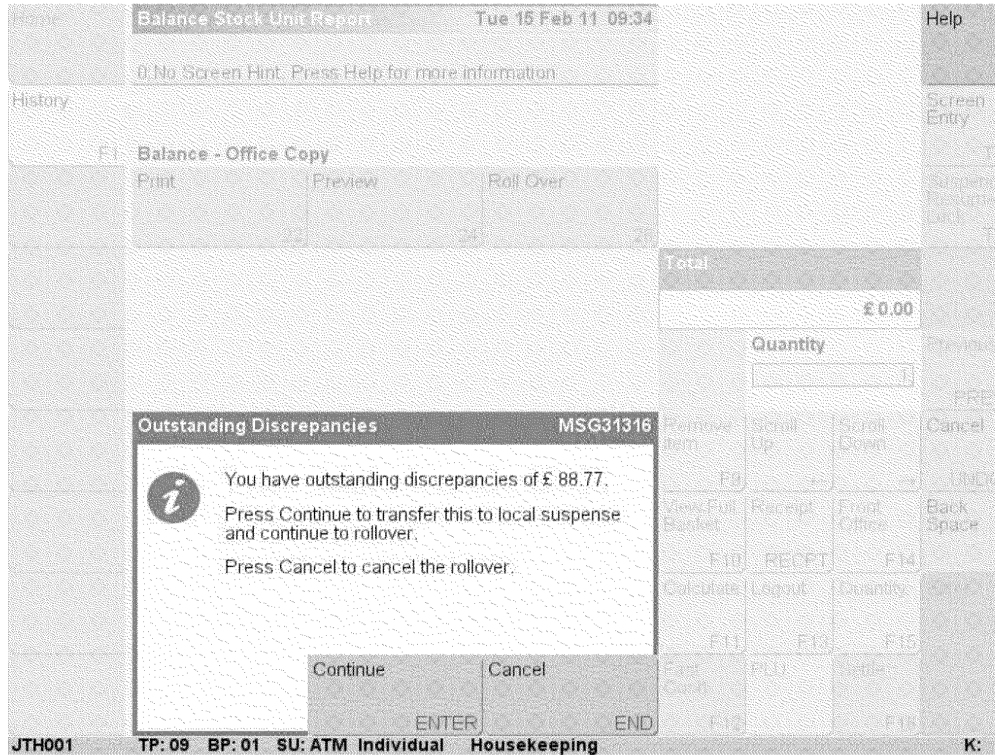


Figure 9 - Post Discrepancy to Local Suspense

Figure 9 would then be shown indicating that the SU Discrepancy is to be posted to Local Suspense.

At this point the user realises that they didn't mean to rollover into a new TP (posting of discrepancies and hence this screen only appear during TP rollovers), and so they select Cancel. It is at this point that the bug occurs. The local memory cache in the counter has the discrepancy cleared at this point, but no corresponding balancing transaction has been added into the cache to balance it.

They then return to the screen shown in Figure 5.

At this point they could have selected cancel and all would have been well. If the Print or Preview option had been selected at this point to re-print the Trial Balance, then the following would have been printed:

```

Little Thurrock                FAD: 1350269
09:33 23/09/2010      TP: 09 BP: 01 SU: ATM
Trial Balance - Office Copy

*****Discrepancies in this Account*****
*Discrepancy OVER                0.00      *
*Discrepancy SHORT              0.00      *
    
```

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Time . . . . .AM/PM +-----+  
TRANSFER  
Cash and stock in this summary have been  
transferred to me  
  
Datestamp  
+-----+  
Signature . . . . . . . . . . . . . . .  
. . . . . . . . . . . . . . .  
. . . . . . . . . . . . . . .  
Time . . . . .AM/PM +-----+

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**Figure 10 – Revised Trial Balance**

In Figure 10, I have highlighted the differences from Figure 6, namely that the Discrepancy figures have been zeroised and the Total Payments no longer matches Total Receipts.

Note also that if this had occurred, then a Receipts and Payments mismatch event would have been recorded and a message would have been displayed to the User.

However they decide to roll into a new BP instead and so select the Roll Over button and the screen in Figure 7 is redisplayed.

This time the Next BP button is selected. This results in the Final Balance for the BP being printed.

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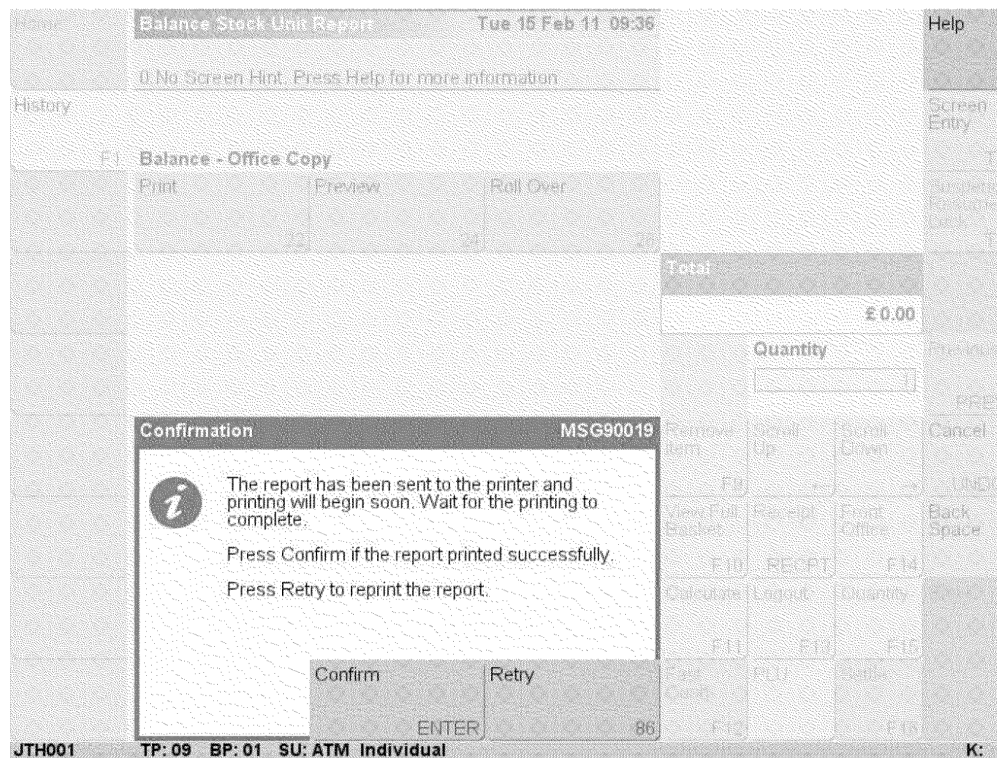


Figure 11 - Final Balance Printing

This would have matched the Trial balance shown above other than saying it was a Final balance.

*Note that the user is not warned about receipts and payments mismatches on the Final balance as it is assumed that they would already have been seen on the trial balance.*

*This particular bug shows that is not necessarily the case!*

Figure 11 is displayed for the User to confirm that the Final balance has printed OK. On completion of the Print then Confirm is selected.

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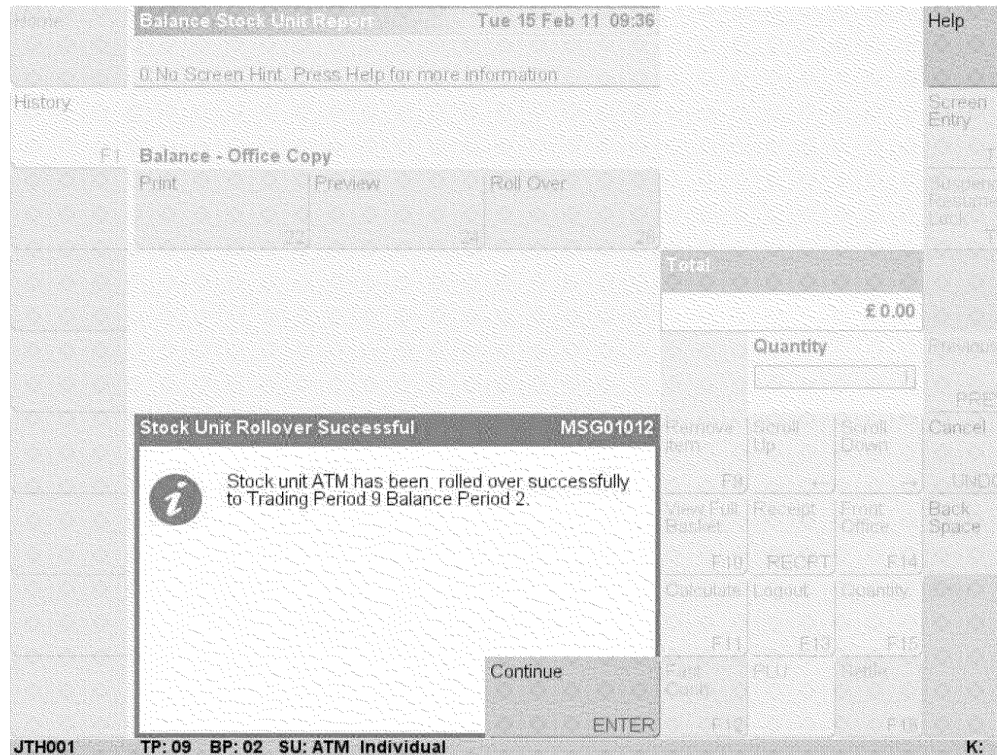
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**Figure 12 - Rollover Complete**

Figure 12 is then displayed confirming that the rollover has been completed. Once the message has been read then Continue is selected returning the user to the Stock balancing Menu as in Figure 1.

Internally, Horizon would have recorded Opening Figures for the new BP and these would be incorrect since the Discrepancy of £88.77 (gain) should have been carried forward into the new BP.

#### **4.2 Balancing the Branch**

All subsequent BP rollovers for this Stock Unit would have been OK and the next time an issue would be noticeable would be when rolling over the Branch into the next TP on 21/10/2010.

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The BTS produced was as follows:

Little Thurrock FAD 1350269  
1  
10:12 21/10/2010  
Final Branch Trading Statement - Office Copy From 16/09/10 To 14/10/10

	Branch Total	Suspense	SU AA	SU ATM
Cash On Hand B Fwd	53272.23		46731.00	6541.23
All Currencies Awaiting Collection B Fwd	66.39	66.39		
Suspense B Fwd	0.00	0.00		
Other MOP B Fwd	0.00		0.00	0.00
ForEx B Fwd	3293.29		3293.29	0.00
Other Postage B Fwd	2786.84		2786.84	0.00
Remittances In Total	1767.50		1767.50	0.00
All Currency Rems from SUs	113422.00	113422.00		
Gains to/from Suspense	0.00	0.00	0.00	0.00
All Currency Pouches Despatched	113488.39		113488.39	0.00
Transfers In from other SUs	45000.00		0.00	45000.00
Other Receipts	356755.05		356755.05	0.00
Remittances Out Total	132485.28		132485.28	0.00
All Currency Pouches Despatched via Sus	113488.39	113488.39		
Losses to/from Suspense	0.00	0.00	0.00	0.00
All Currency Rems to Suspense	113422.00		113422.00	0.00
Transfers Out to other SUs	45000.00		45000.00	0.00
Other Payments	229755.25		186695.25	43060.00

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Cash On Hand C Fwd	49526.86		40956.86	8570.00
All Currencies Awaiting Collection C Fwd	0.00	0.00		
Suspense C Fwd	0.00	0.00		
Other MOP C Fwd	0.00		0.00	0.00
ForEx C Fwd	2912.41		2912.41	0.00
Other Postage C Fwd	3350.27		3350.27	0.00
Total C Fwd	55789.54	0.00	47219.54	8570.00
Trading position (+/-)	88.77-		0.00	88.77-
Discrepancy OVER Transferred	0.00		0.00	0.00
Discrepancy SHORT Transferred	20.86		20.86	0.00
Discrepancy OVER Resolved	0.00		0.00	0.00
Discrepancy SHORT Resolved	20.86		20.86	0.00
Total Branch Adjustments	20.86-		20.86-	0.00

Little Thurrock  
2

FAD 1350269

10:12 21/10/2010  
09

Reprint for 10:12 21/10/2010

Final Branch Trading Statement - Office Copy From 16/09/10 To 14/10/10

Stock Holdings at End of Period

DESCRIPTION	VOLUME	DESCRIPTION	VOLUME	DESCRIPTION
Christmas 10 PP	4	Instants £5	78	
Medical PP	5	Instants £2	382	
WinniePoohPP	5			
RSF 1st Class	148			

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1st class stmp	4757
RSF 1st Large	199
1st class Large	584
2nd class Large	618
2nd class stmp	7191
SplDel SD3	41
Airsure World	9
Int Sign Euro	8
Int Sign World	9
Airsure Europe	10
Airletter Single	26
SplDel SD2	23
SplDel by 9.00am	29
S/a 2ndx100	49
S/a 1stx100	42
1st Large x 4	61
2nd Large x 4	82
SAS bk 1st x 12	634
SAS bk 2nd x 12	762
SAS bk 1st x 6	232
PO Phonecrd £5	7
PO Phonecrd £10	5
PO Phonecrd £20	22
Postal Orders	93
MVL Discs	809

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Instants £1	536
Transaction Corrections	6

I certify that the content of this balancing and trading statement is an accurate reflection of the cash and stock on

Signature:

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**Figure 13 – Branch Trading Statement**

This shows a Trading Position of £88.77 (highlighted) corresponding to the lost discrepancy.

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