



## 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.



*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.*



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.

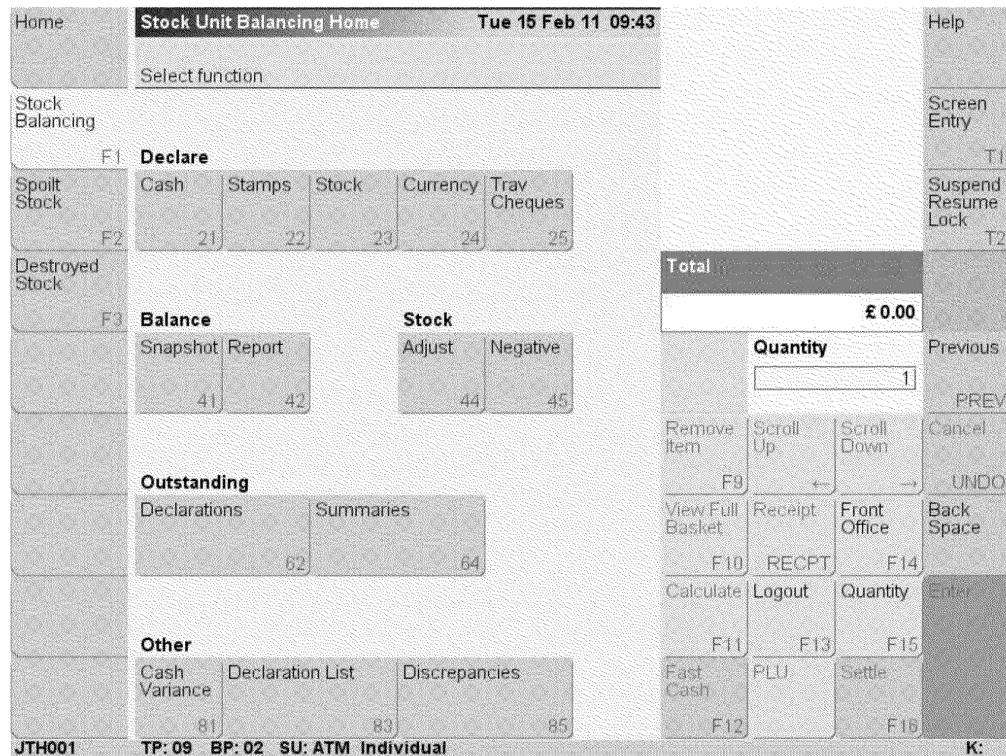

**HNG-X System**  
**Receipts and Payments Mismatch**

**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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 Author: Gareth I Jenkins  
 Date: 17/02/2011 11:25:00


**HNG-X System**  
**Receipts and Payments Mismatch**


Declare Cash Holding			Tue 15 Feb 11 09:28	
TBC-024:Review declaration details then press Enter				
	Type	Amount	Variance	
F1	cash	£ 88.77	Gain	
Total £ 0.00				
Quantity				
Remove Item		Scroll Up	Scroll Down	
F9		F10	F11	F12
View Full Basket		Receipt	Logout	Fast Cash
F10		RECPT	F11	F12
Calculate		Front Office	Quantity	PLU
F11		F14	F13	F15
Logout			F13	Settle
Page Up		Page Down	Page I/I	Page F/F
TP: 09 BP: 01 SU: ATM Individual				

**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.

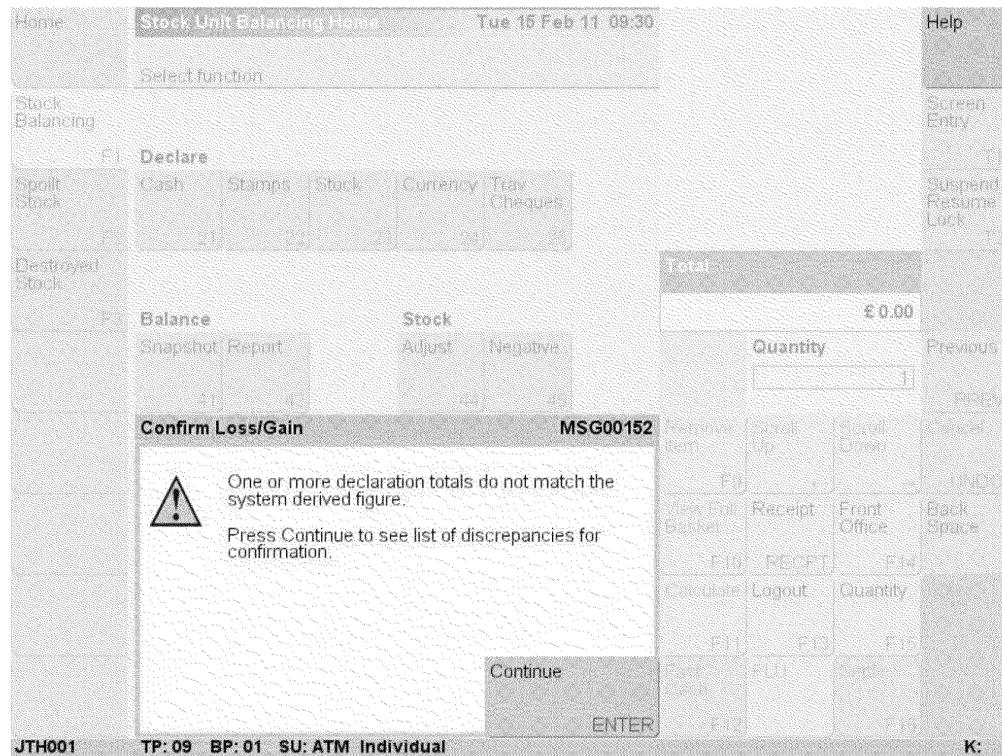
Then the Balance Report button was used to Balance the Stock Unit.

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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**HNG-X System**  
**Receipts and Payments Mismatch**


Balance Stock Unit Report			Tue 15 Feb 11 09:31
BAC-761:Press Enter to continue.			
Product Name	Discrepancy	Gain / Loss	
Cash	£ 88.77	Gain	
<b>Total</b> £ 0.00			
Quantity			
Remove Item F9	Scroll Up ←	Scroll Down →	Previous PREV
View Full Basket F10	Receipt RECPT	Front Office F14	Cancel UNDO
Calculate F11	Logout F13	Quantity F15	Back Space Enter F16
Page Up TP: 09	Page Down BP: 01	Page 1/1	Fast Cash F12
PLU		Settle F16	

**Figure 4 - Discrepancy List**

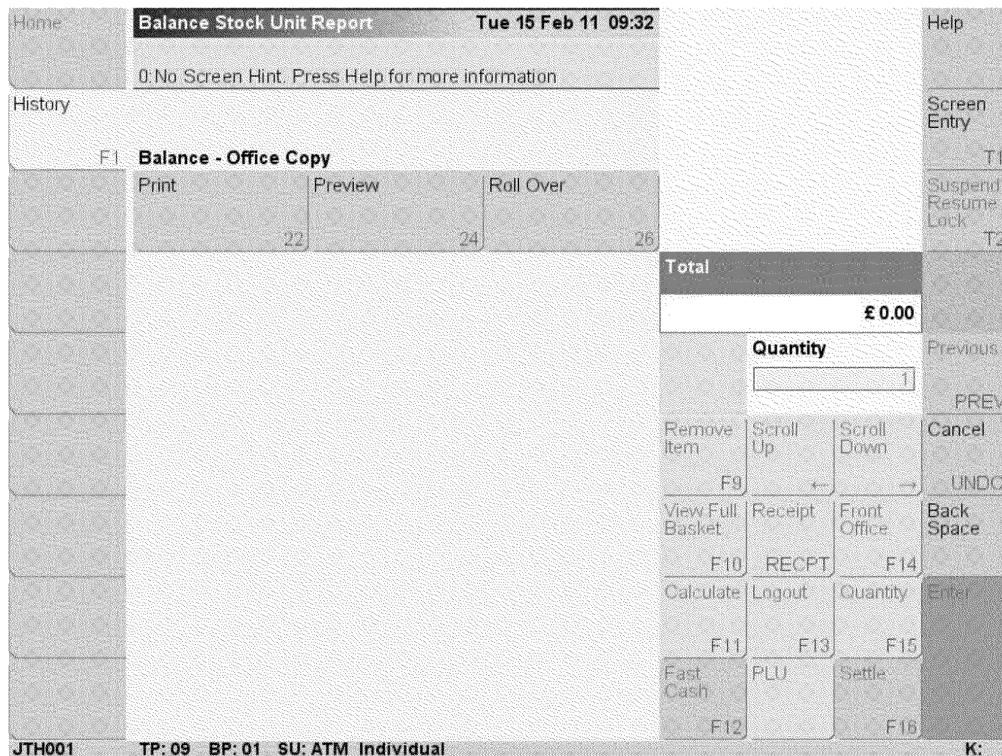
Figure 4 is then displayed with a list of the one discrepancy that was identified. Note that this is the same as he would have seen in Figure 2.

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## HNG-X System Receipts and Payments Mismatch



**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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## HNG-X System Receipts and Payments Mismatch



MOP	12630.00	
-----		
TOTAL VALUE ITEMS &MOP	12630.00	
-----		
RECEIPTS	VOLUME	VALUE
Balance B/Fwd		6541.23
Transfers In		15000.00
Remittance In Detail		0.00
Discrepancy OVER Transferred		0.00
Discrepancy SHORT Resolved		0.00
-----		
TOTAL RECEIPTS		21541.23
-----		
PAYMENTS	VOLUME	VALUE
A&L ATM	8	9000.00
SELF FILL ATM		9000.00
Transfers Out		0.00
Remittance Out Detail		0.00
Discrepancy SHORT Transferred		0.00
Discrepancy OVER Resolved		0.00
Total VALUE ITEMS &MOP		12630.00
Nett discrepancies		88.77-
-----		
TOTAL PAYMENTS		21541.23
-----		
Balance C/Fwd		12630.00
STOCK VOLUMES	VOLUME	
EXAMINATION		
Drawer examined and cash and stock found as shown in this summary		
	Datestamp	
	+-----+	
Signature . . . . . . . . . . . .	. . . .	
	. . . .	
	. . . .	
Time . . . . . . . . . . . . AM/PM	+-----+	
TRANSFER		
Cash and stock in this summary have been transferred to me		
	Datestamp	
	+-----+	
Signature . . . . . . . . . . . .	. . . .	

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## HNG-X System Receipts and Payments Mismatch



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.

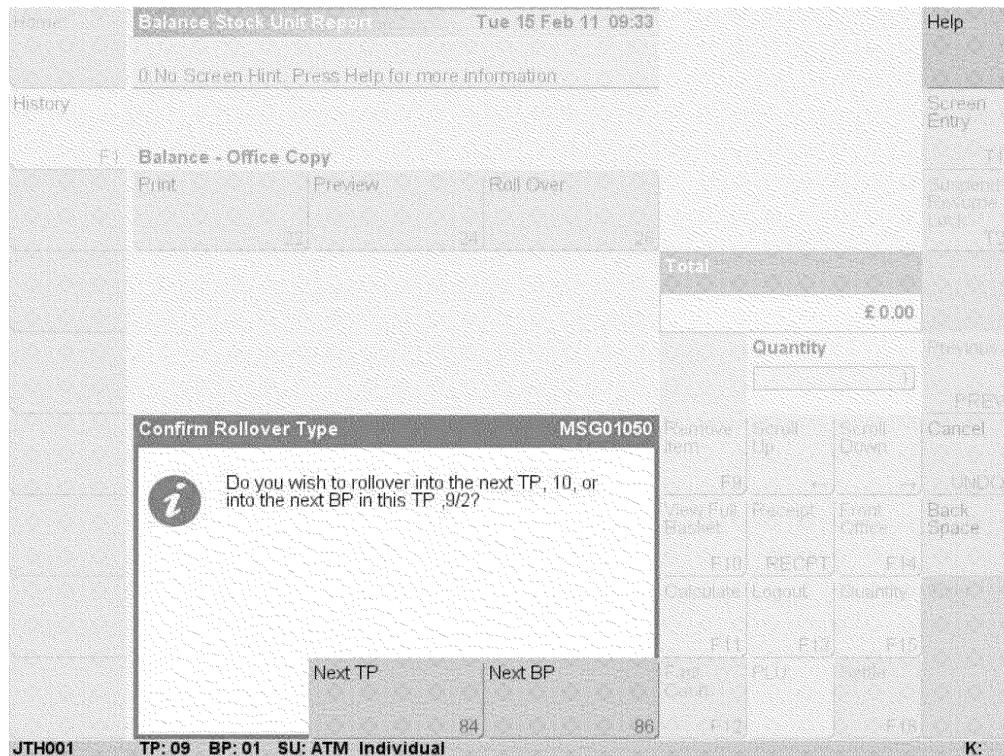


Figure 7 - TP or BP Rollover?

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).

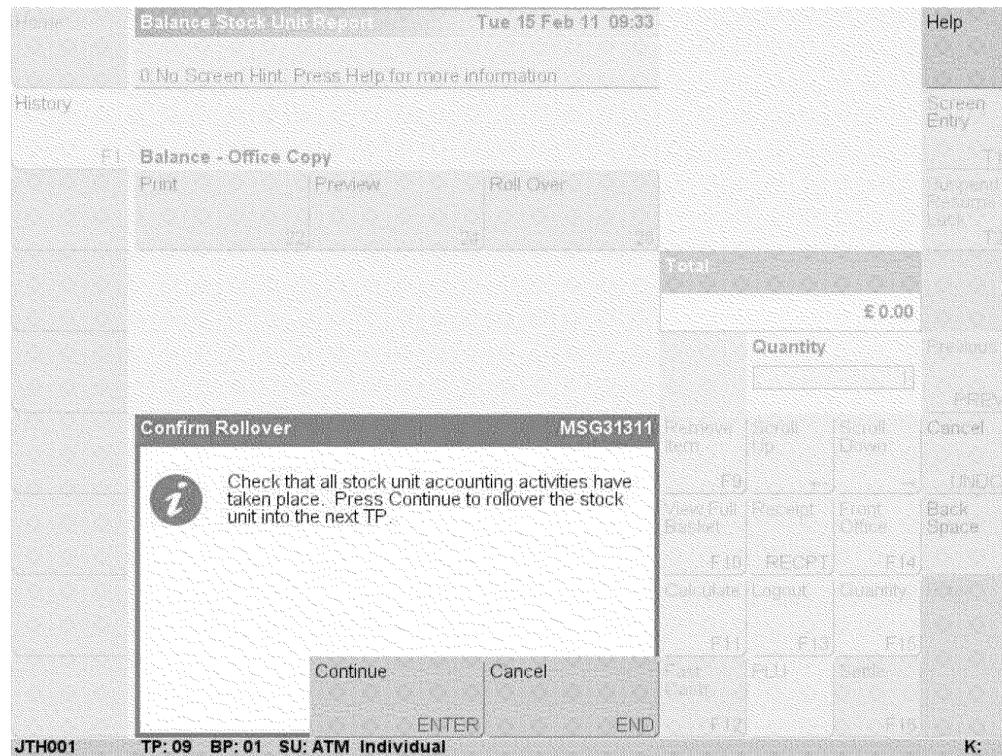
In order to encounter the problem the user would have selected a new TP and so have selected the Next TP button. Note that this is incorrect as it is not time to rollover into TP 10 for another 3 weeks.

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**HNG-X System**  
**Receipts and Payments Mismatch**

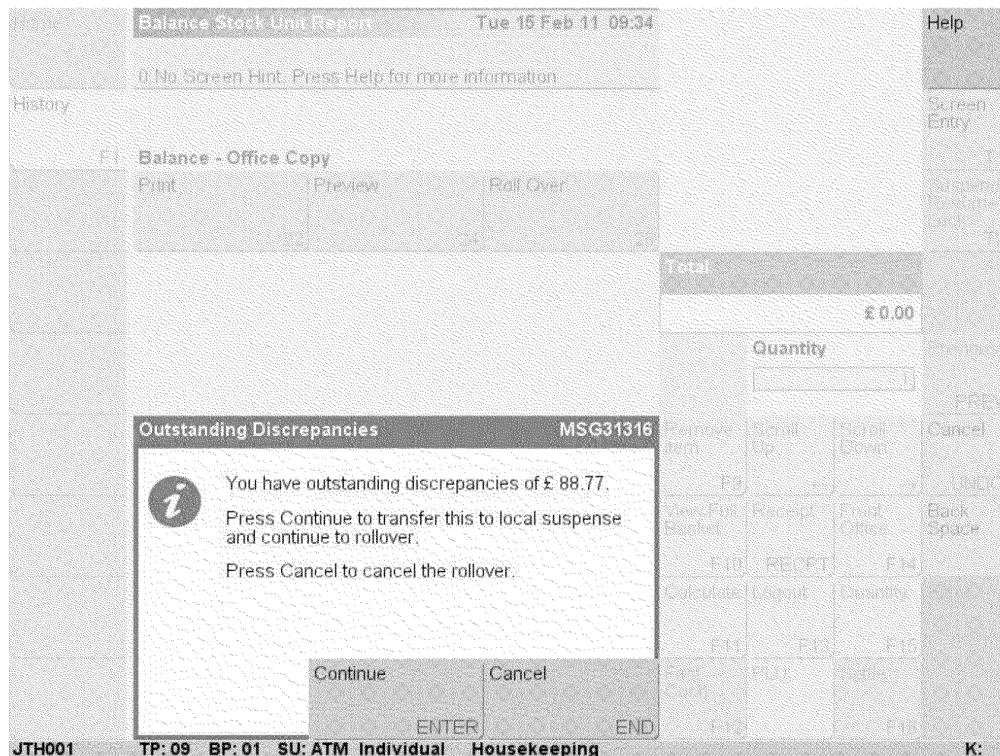


**Figure 8 - Prepare for new TP**

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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**HNG-X System  
Receipts and Payments Mismatch**


**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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**HNG-X System**  
**Receipts and Payments Mismatch**



\* ----- \*

\* Nett discrepancy 0.00 \*

\* ----- \*

\*\*\*\*\*

VALUE ITEMS &MOP	VOLUME	VALUE
Cash		12630.00
Cash		12630.00
MOP		12630.00
<hr style="border-top: 1px dashed black;"/>		
TOTAL VALUE ITEMS &MOP		12630.00
<hr style="border-top: 1px dashed black;"/>		

RECEIPTS	VOLUME	VALUE
Balance B/Fwd		6541.23
Transfers In		15000.00
Remittance In Detail		0.00
Discrepancy OVER Transferred		0.00
Discrepancy SHORT Resolved		0.00
<hr style="border-top: 1px dashed black;"/>		
TOTAL RECEIPTS		21541.23
<hr style="border-top: 1px dashed black;"/>		

PAYMENTS	VOLUME	VALUE
A&L ATM	8	9000.00
SELF FILL ATM		9000.00
Transfers Out		0.00
Remittance Out Detail		0.00
Discrepancy SHORT Transferred		0.00
Discrepancy OVER Resolved		0.00
Total VALUE ITEMS &MOP		12630.00
Nett discrepancies		0.00
<hr style="border-top: 1px dashed black;"/>		
TOTAL PAYMENTS		21630.00
<hr style="border-top: 1px dashed black;"/>		

Balance C/Fwd		12630.00
STOCK VOLUMES	VOLUME	
EXAMINATION		
Drawer examined and cash and stock found		
as shown in this summary		
	Datestamp	
	+-----+	
Signature . . . . . . . . . . . .		
	. . . . .	
	. . . . .	

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**HNG-X System**  
**Receipts and Payments Mismatch**



Time . . . . . AM/PM +-----+

**TRANSFER**

Cash and stock in this summary have been transferred to me

Datestamp

+-----+

Signature . . . . . . . . . .

. . . . .

. . . . .

Time . . . . . AM/PM +-----+

\*\*\* END OF REPORT \*\*\*

**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.

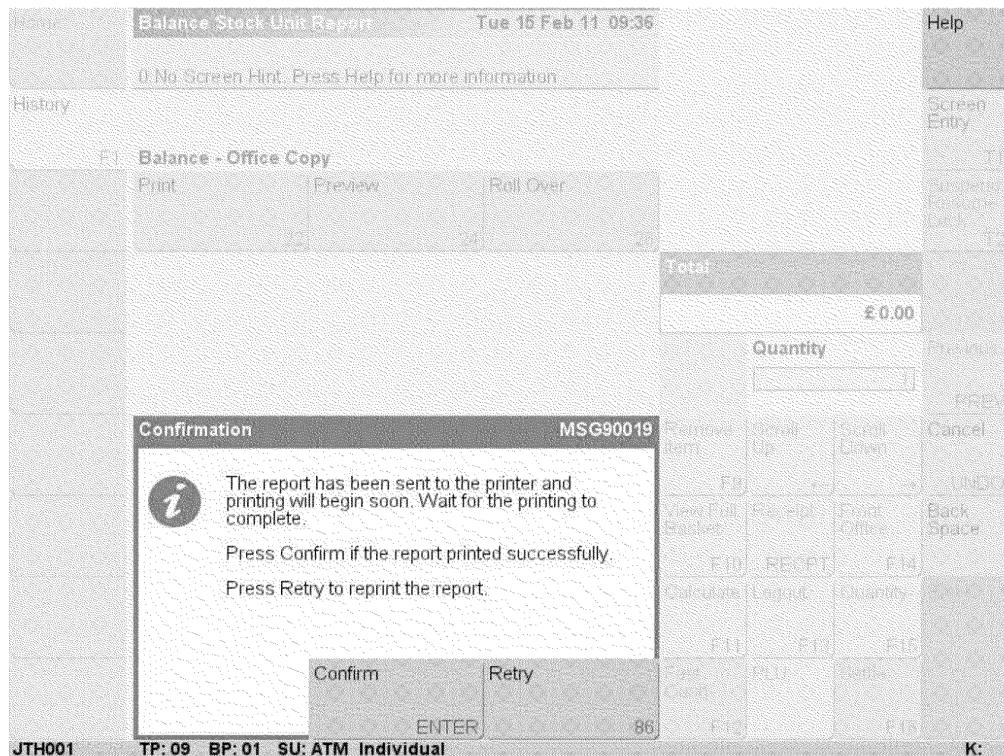
Note also that if this had occurred, then a Receipts and Payments mismatch event would have been recorded and a message would have been displayed to the User.

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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**HNG-X System  
Receipts and Payments Mismatch**


**Figure 11 - Final Balance Printing**

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

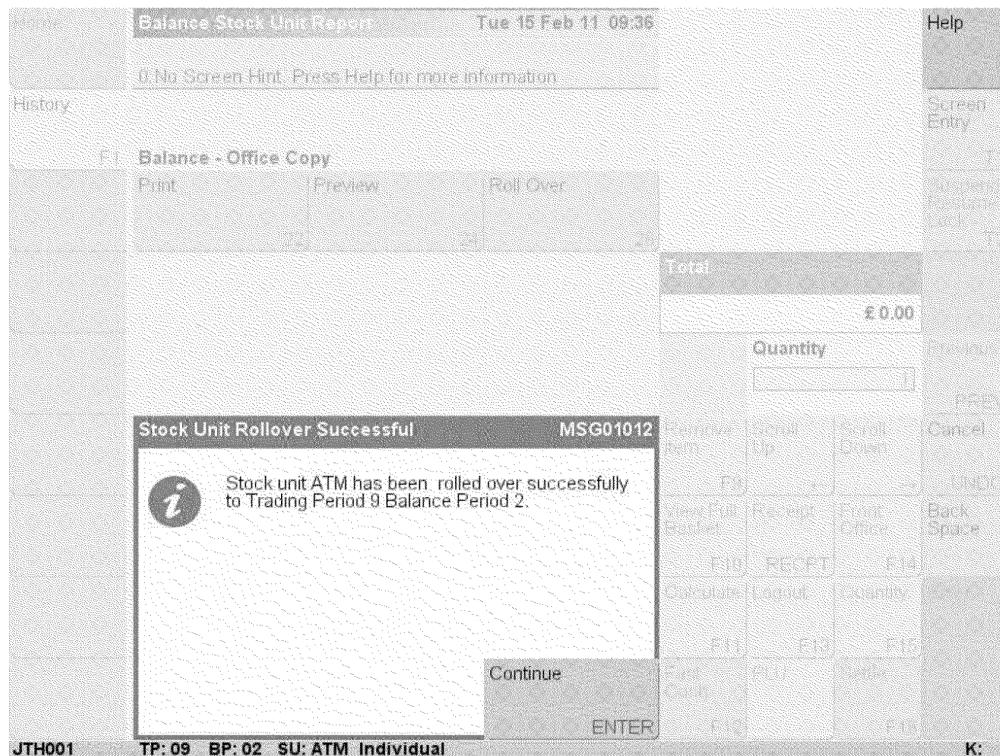
*Note that the user is not warned about receipts and payments mismatches on the Final balance as it is assumed that they would already have been seen on the trial balance.*

*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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Receipts and Payments Mismatch**


**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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**HNG-X System  
Receipts and Payments Mismatch**



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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**Receipts and Payments Mismatch**



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 (+/-)	<b>88.77-</b>		0.00	<b>88.77-</b>
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 FAD 1350269

2

10:12 21/10/2010 Reprint for 10:12 21/10/2010

09

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 or

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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