



UNDERGROUND

Issue

# The T & R

90

JAN FEB MAR  
UPDATE  
2016

## JANUARY FARES REVISION

### HITS THE HEADLINES

It isn't unusual for the main January Fares Revision to hit the headlines.

#### **The Telegraph**

02 Jan 2016

London's Oyster card system crashes, giving thousands free travel

Barriers at rail and tube stations opened by staff after Oyster card swipe machines fail to work throughout the network



Normally this is around mid-November when the Mayor makes his public announcement of the new fares package and tends to focus on the amount fares will increase or a particular aspect of the changes. In 2014 that was about changes to the fares structure to help part time workers, whilst last November it was mainly about the extension of free travel for 5-10 year olds to include NR services within the London area.

Unfortunately, as many of you will have seen in the press reports, this January's Fares Revision hit the headlines on Saturday 02 January, when a network wide failure of the Oyster system occurred.



On Page 2 we provide an explanation of what happened, together with our usual review of what went well and what didn't go quite so well during the implementation of this year's main fares revision.

As a follow on from the fares revision, PAYG acceptance was finally extended to Gatwick on Monday 11 January. Although we provided some basic details on fares to and from Gatwick and capping arrangements in TRU 89, we have since received quite a few queries from staff, around what fares customers will be charged. We have therefore included some further information inside, on Page 3.

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Renewal of Freedom Passes is underway, but holders are being allowed more time if they have failed to renew their Pass before it expires on 31 March.

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#### FRAUD SURVEY RESULTS

We provide analysis of the latest On Train Fraud Survey results conducted in November 2015 and look at how these compare with previous results.

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#### CASH HANDLING DEVICES

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#### CHIP & PIN UPGRADE

We provide further information on the forthcoming replacement of the Chip & PIN equipment on all of our ticket issuing devices and how Cubic are planning to implement this later in the year.



#### We're Running Late!

*Don't worry... you haven't missed an edition of the TRU. We're just a little bit behind schedule because there's so much going on. In the much used railways jargon "we apologise for the late arrival..."*

## JANUARY FARES REVISION

- WHAT WENT WELL...
- WHAT DIDN'T GO SO WELL!

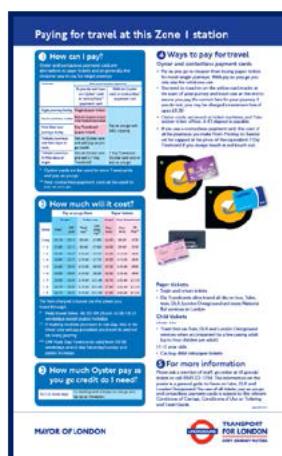
As highlighted in our lead article, this year's January Fares Revision hit the headlines on Saturday 02 January, when a major failure prevented Oyster card acceptance across the entire TfL & NR networks.



The problem was caused by incorrect data in one of the new tables which took effect on 02 January and once identified, required Cubic to reload this table to every device with an RTD.

This process was completed by around 10.00 hours, but obviously some customers travelling before then may have got the benefit of a free journey, particularly on buses.

At the time the Oyster card readers came back into service, it is estimated that around 10,000 PAYG journeys were already underway, so when these customers reached their destination and touched out, they would have incurred a maximum fare for an un-started journey. Customer Experience therefore set up automatic refunds to reimburse these customers for the additional fare they had been charged.



Since the fares revision we have also had a steady trickle of enquiries regarding customer fares posters. A number of stations have reported that the posters they received before the revision were the wrong size for the new frames installed during recent works.

Unfortunately, if the change has not been communicated and Cubic have supplied the size of poster identified on the schedule, any reprint will be chargeable.

This also applies if the poster has been lost or damaged. Replacements can be ordered via an online form which can be found on the Gateline page of the intranet or via the link below.

[http://luintranet.tfl/static/documents/coo/Fares\\_Poster\\_request\\_form\\_v1.pdf](http://luintranet.tfl/static/documents/coo/Fares_Poster_request_form_v1.pdf)



It wasn't all doom and gloom though, as there were very few cases of devices failing to correctly switch over to their new tables in the Saturday morning.

Despite Cubic having to reload the table that caused the Oyster failure mentioned above, this also appears to have gone relatively smoothly.



Table loading particularly to the AFM has caused us a number of issues in the past and within a new software release completed recently, Cubic have made changes to improve this loading process.

## T&R BOOKS – CONTENTS & GLOSSARY

Prior to the Fares Revision, T&R Book Update packs were distributed to all stations. Unfortunately, among the checklists we have received back, a number of stations appear to have not followed the updating instructions and have disposed of their copies of **T&R Book 4**, which was not reprinted for this revision.



It currently looks as if the number of replacement books required to complete sets at all the stations we have been notified about, will exceed the stock of spare books we maintain for replacements of lost or damaged books. Since it is likely that **T&R Book 4** will be updated and reprinted for the May Fares Revision, the high cost of an additional print run for a small quantity of books, is unlikely to justify the expense at this time.

The other T&R Book which was not reprinted for January was the **Contents & Glossary**. This has been updated to reflect the changes in the other books and although it has not been reprinted, it is now available online via the T&R Books page of the Intranet or via the link below.

[http://luintranet.tfl/static/documents/coo/Book\\_9\\_Issue\\_9.pdf](http://luintranet.tfl/static/documents/coo/Book_9_Issue_9.pdf)

## PAYG FARES TO GATWICK

Since Monday 11 January 2016, customers have been able to use PAYG for travel between London and Gatwick Airport on Gatwick Express, Thameslink and Southern rail services. PAYG travel is now also available to and from the following intermediate stations:

MERSTHAM	EARLWOOD	REDHILL	SALFORDS	HORLEY
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Different fares apply according to the service used. The table below lists these main areas;

Thameslink and Southern services	Gatwick Express services
<ul style="list-style-type: none"> <li>➤ peak and off-peak fares are charged</li> <li>➤ discounted fares are charged for; <ul style="list-style-type: none"> <li>• holders of 11-15 and 16+ Zip Oyster Photocards</li> <li>• customers who have Jobcentre Plus, National Railcard, Disabled Railcard, Gold Card, Young Visitor or Priv All Rail discount set on their Oyster card.</li> </ul> </li> <li>➤ children with a 5-10 Zip Oyster Photocard can travel free between London Terminals and Coulsdon South. If their journey includes travel to/from any station between Merstham and Gatwick Airport they must add PAYG to their 5-10 Zip Oyster Photocard and will be charged a child-rate fare for the whole journey</li> <li>➤ journeys on these services count towards capping</li> <li>➤ Freedom Passes, 60+ London and Veterans Oyster Photocards are not valid between Coulsdon South and Gatwick Airport.</li> </ul>	<ul style="list-style-type: none"> <li>➤ premium fares are charged at all times</li> <li>➤ discounted fares are charged for; <ul style="list-style-type: none"> <li>• holders of 5-10*, 11-15 and 16+ Zip Oyster Photocards (*children with a 5-10 Zip Oyster Photocard <b>do not</b> travel free)</li> <li>• customers who have Jobcentre Plus, National Railcard, Disabled Railcard, Gold Card, Young Visitor or Priv All Rail discount set on their Oyster card.</li> </ul> </li> <li>➤ journeys on these services <b>do not</b> count towards capping</li> <li>➤ Freedom Passes, 60+ London and Veterans Oyster Photocards <b>are not valid</b>.</li> <li>➤ Travelcards <b>are not valid</b></li> </ul>

	Thameslink / Southern		Gatwick Express
Adult PAYG Fare	Standard	Reduced	All times
London Terminals to Gatwick Airport	£14.00	£8.00	£19.80

Adult PAYG journeys in	Daily Cap		Monday to Sunday cap (Contactless payments only)
	Peak	Off Peak	
Zones 1-9 plus Merstham / Horley	£29.80	£19.00	£100.30
Zones 1-9 plus Gatwick Airport *	£30.50		

\* Journeys on Gatwick Express do not count towards caps

- The TfL single fare finder can be used to find other fares between Gatwick Airport and London (inc intermediate stations) <https://lemon.online.tfl.gov.uk/fares-and-payments/fares/single-fare-finder>
- PAYG to/from Gatwick Airport will be the easiest way to pay but some National Rail tickets will be cheaper – in particular returns, season tickets and group tickets.
- Staff Oyster cards are not valid on any service to Gatwick Airport.

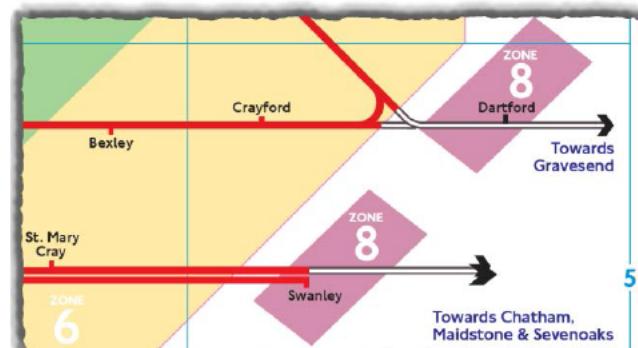
## PAYG TAKES YOU FURTHER

Following on from a number of extensions to Oyster and Contactless payment availability, the latest will see PAYG acceptance on South Eastern services extended to Swanley from Wednesday 09 March 2016. The station will be designated as being in Zone 8.



The online version of the PAYG map has been updated to reflect this latest change and can be accessed from the "Gateline" page of the T&R section of the intranet or via the following link.

[http://lulintranet.tfl/static/documents/coo/Oyster\\_PAYG\\_Map\\_v14.pdf](http://lulintranet.tfl/static/documents/coo/Oyster_PAYG_Map_v14.pdf)



southeastern.

## A QUESTION OF PINS

As more staff complete the Ticket Machine Servicing (TMS) modules and assessment, we have started to receive a few enquiries regarding PINs. We therefore thought it might be timely to summarise some of the basic facts and address some of the common questions.

As a starting point, we thought it would be useful to summarise what facilities are currently available to holders of TSID cards, CSID PINs and when using the TSID to sign onto the Cash Handling Device (CHD).

Item	TSID	CHD	CSID
PIN CHANGE	No	Yes	No
PIN REMINDER	Yes	Yes	Yes
REACTIVATION	Yes	Yes	Yes

Although the CHD uses the same TSID sign on cards as our POMs, TOMs and SAF, there is no linkage between the two systems. Therefore if a member of staff changes their CHD sign-on PIN to a number which is different to the PIN associated with their TSID, then they will have different PINs for POM and CHD activity. Changing a PIN on the CHD doesn't change the PIN for other functions as the PIN associated with the TSID and to CSIDs are fixed.

Providing the CHD is online, any change to users or their PINs will be shared to all other devices on which the TSID has been set up as a user. Initially this covered all devices on the current groups, but we are currently in the process of widening this to cover the introduction of new cover groups in April and to simplify the arrangements for G4S custodians who visit stations across a number of different groups.

Finally, one last misconception: Having a TSID card blocked due to too many failed sign-on attempts does not affect the ability to use staff facilities on the front of the device or vice versa.

For further information on resolving problems with TSID and CSID PINs please consult the troubleshooting guide, which can be accessed via the intranet or via the link below.

[http://lulintranet.tfl/ops\\_maintenance/service\\_support/oyster\\_tickets\\_revenue/8658.html](http://lulintranet.tfl/ops_maintenance/service_support/oyster_tickets_revenue/8658.html)

Queries and requests for PIN reminders or cards to be "unblocked" can be made by email, but please ensure that these are directed to the appropriate mailbox.

- [SMBTSID@tfl.gov.uk](mailto:SMBTSID@tfl.gov.uk) for TSID issues and
- [SMBCSID@tfl.gov.uk](mailto:SMBCSID@tfl.gov.uk) for CSID related issues.

Using the correct mailbox will enable us to respond to queries more quickly.

## FARE FREE MONDAYS

MasterCard in partnership with Apple Pay have been running a further series of Fare Free Monday promotions for any customers using Apple Pay linked to a MasterCard to make contactless PAYG journeys. These events took place on the dates listed in the table below:



Mon 29 February	Mon 07 March	Mon 14 March
1st Fare Free Monday	2nd Fare Free Monday	3rd Fare Free Monday
Between the hours of 04:30 and 01:00		



In line with all other contactless payment travel, customers had to touch in and out as normal and would later receive a refund from MasterCard as with previous promotions.

A whiteboard poster was supplied to stations in support of the promotion and any customers participating were sent reminders to;

- Touch-in and out at the start and finish of each rail journey to avoid paying the maximum fare
- Use the same Apple device (phone or watch) for each journey they made. Although both devices may be linked to the same MasterCard account, journeys are recorded against the Apple device used.
- Ensure they had sufficient battery life to be able to complete the validation at the end of their journey.

Although now complete, any customers with questions relating to the the promotion should be advised to contact MasterCard.

## FREEDOM PASS RENEWALS

On Thursday 31 March 2016 approximately 170,000 Freedom Passes are due to expire.

Renewing so many Freedom Passes is quite a formidable task and many London Councils started the process back in January. This is also a process that relies heavily on eligible holders responding in time to council requests to ensure that they will receive their new card before their old one expires.



Although the renewals process has been in place for many years, there are still a large number of people who may not be able to comply for a number of legitimate reasons, such as accessibility and mobility.

To compensate for this, TfL and other Train Operating Companies (TOCs) have agreed to continue accepting Freedom Passes that have a 31 March 2016 expiry date, until Sunday 15 May 2016.

Staff presented with one of these Freedom Passes between 31 March and 15 May should take the following action if the Freedom Pass is rejected as being out of date (Reject code "11");

- *Recheck the Freedom Pass on the gate to verify the reason for rejection*
- *Visually check the holder's Freedom Pass.*
- *Allow the holder to travel if the Freedom Pass is otherwise valid.*
- *Advise the holder to apply for a new Freedom Pass as soon as possible.*

These arrangements do not apply to Freedom Passes that have been damaged or defaced, or where the Gate indicates that the card has been disabled.



Staff must not advise holders that they can continue to use their expired pass until 15 May.

Any customers with questions about the renewals process should be advised to contact the Freedom Pass Helpline on 0300 330 1433 or visit their website [www.freedompass.org](http://www.freedompass.org).

## BULK COIN BAG SCANNING

In TRU 88 we outlined the need for stations to stop using bags with a serial number commencing with "905", for the despatch of bulk coin.

For some time we have been pushing for G4S to scan each individual bulk coin bag, rather than just recording the quantity of bags of each denomination. This had been hampered by the fact that although the older 905 bags have a scanable barcode, this doesn't enable G4S to identify both the bag number and coin denomination. The newer Santander branded bags with serial numbers beginning "415" can be scanned by G4S and identify both the bag number and what type of coin it is. As a result we had asked for all stations to stop using 905 bags for bulk coin by 02 January 2016. Unfortunately although most stations are now using the correct series of bags, we are still seeing cases of some stations preparing their bulk coin bags in 905 bags.



From Sunday 03 April, G4S should be scanning each individual bulk coin bag and if a 905 series bag has been used it is likely that this will be rejected and won't be collected.

Any stations that do not have the correct series of bags will need to order these as soon as possible.



If you still have 905 bags these can still be used as float bags or to record change that has been delivered, if it is supplied in an un-numbered bag.

Implementation of this change should greatly assist in the tracking of bags after they are created and avoid unnecessary queries where there is a discrepancy between the number of bags collected and the actual quantities processed by G4S.

# SPECIAL FEATURE

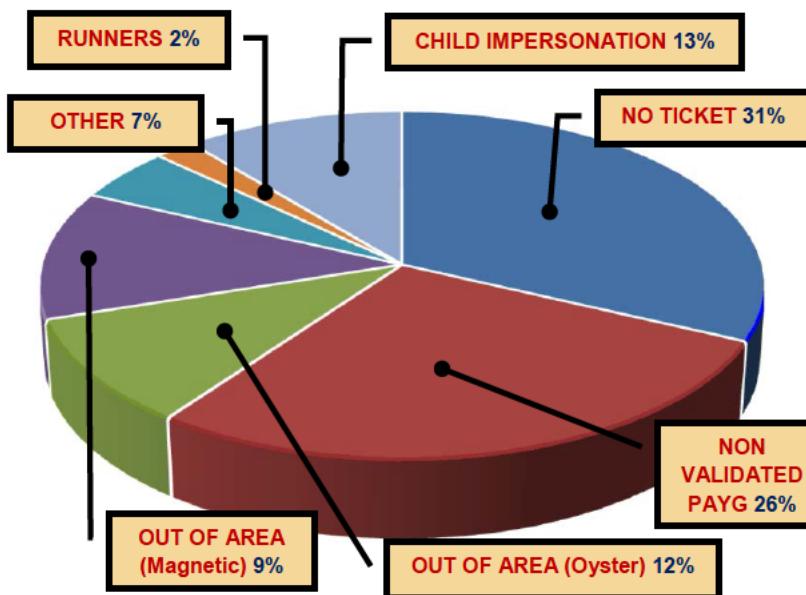
On the following two pages we bring you a summary of the results of the On Train Fraud Survey conducted in November. This is a useful barometer as it allows comparison with surveys completed annually each November. The results also featured in press coverage in City AM on 10 December 2015 which reported a large increase in fare evasion since 2010/11. The figure of £61.47 reported, is similar to the figures identified by the survey below, but isn't actually a true revenue loss, as it does not take account of maximum fares for incomplete PAYG journeys. The 12 month average irregularity rate in November 2010 was 2.39% compared to 2.44% over the last 12 months, but in the last 5 years fares and customer numbers have both increased.

## TICKET IRREGULARITY SURVEY

The results of the November 2015 On-train Ticket Irregularity Survey have been published by the TfL Transport Strategy team. This survey was conducted throughout that month by RCIs, following set criteria for each line. Customers were surveyed on LU trains 7 days per week; from the first train out of a depot to the last one back in at night. In total **50,816** customers were checked, of which **2.8%** had a ticket irregularity of one form or another.



This represents a potential loss to LU of around **£60.94m** per year. Once adjustments have been made to take account of revenue collected through penalty and maximum fares for incomplete journeys, this figure is reduced to around **£35.32m**, which equates to around **1.68%** of total revenue.



Survey Date	On train irregularity	Estimated revenue loss
November 2014	2.93%	1.81%
February 2015	2.33%	1.34%
May 2015	2.14%	1.22%
NOVEMBER 2015	2.80%	1.68%
12 month average	2.44%	1.41%

These results do not cover all types of ticket irregularity, such as Oyster cards that are validated on entry but not on exit, as these cannot be identified at the time of the survey. However, since the introduction of Maximum fares it is more likely that in instances such as these the overall effect is to result in a slight gain in revenue rather than a loss.

The highest levels of irregularity remain the "No ticket" and "Non-validated PAYG" categories. This survey though shows a 4% rise in offences involving Child tickets, arresting the decline seen over the previous 12 months.

A breakdown of all results on a line-by-line basis for surveys over the past 12 months is shown in the table on the right. The main highlights are;

- Only the *District*, *Circle* and *H&C* lines recorded a fall in irregularities since the May survey
- Throughout 2015, the highest irregular travel levels were found on the *Victoria* line.
- The highest increase from the May survey was found on the *Central* line with irregularities up by 1.40%, followed by the *Metropolitan* line with an increase of 1.39%.
- In line with previous surveys the *Jubilee* line recorded the lowest irregularities on the network.

Line	Nov-15	May-15	Feb-15	Nov-14
BAKERLOO	3.21	2.69	2.76	3.10
CENTRAL	3.79	2.39	2.44	4.50
VICTORIA	4.21	4.00	4.09	4.26
JUBILEE	1.57	0.94	0.96	1.16
NORTHERN	2.43	1.64	1.68	2.38
PICCADILLY	2.05	1.40	1.43	2.42
DISTRICT	2.03	2.52	3.08	2.63
METROPOLITAN	4.19	2.80	3.49	3.37
CIRCLE	2.01	2.73	2.24	1.90
HAMMERSMITH & CITY	2.36	2.54	2.63	2.20

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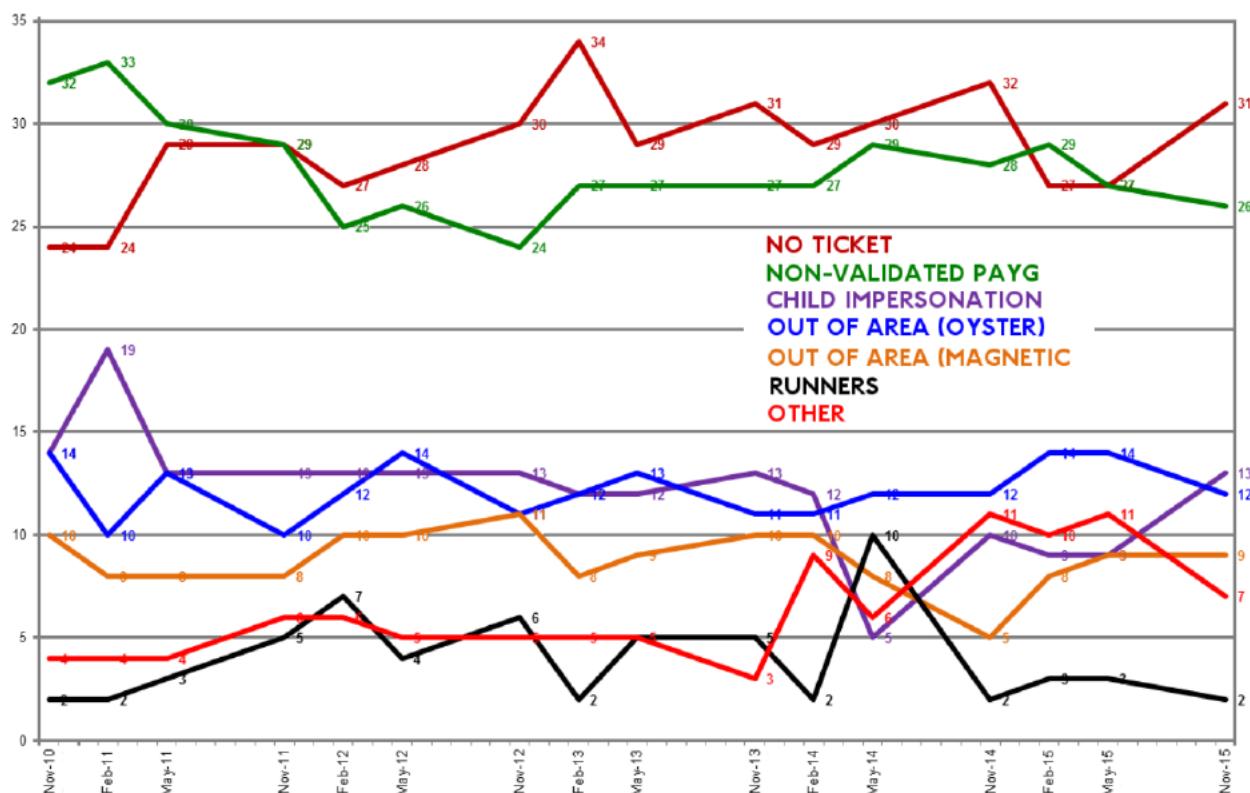
# TICKET IRREGULARITY SURVEY

The table on the right provides a comparison from the surveys conducted throughout 2015 against 5 previous November surveys.

Offence (%)	Nov-15	May-15	Feb-15	Nov-14	Nov-13	Nov-12	Nov-11	Nov-10
No ticket	31	27	27	32	31	30	29	24
Non validated PAYG	26	27	29	28	27	24	29	32
Child impersonation	13	9	9	10	13	13	13	14
Out of area (Oyster)	12	14	14	12	11	11	10	14
Out of area (Magnetic)	9	9	8	5	10	11	8	10
Runners	2	3	3	2	5	6	5	2
Other	7	11	10	11	3	5	6	4

Whereas the graph below shows the data collected from all ticket irregularity surveys between the dates of November 2010 and November 2015. Throughout this 5 year period, the trends have been remarkably consistent, with the "No ticket" and "Non-validated PAYG" categories of offence headlining each survey and remain the biggest challenges for our Revenue Control department.

As well as the usual uniformed and plain clothed gateline and on-train inspections carried out daily, we have often reported on new initiatives and equipment aimed at making this task more effective and prosecutions easier to process. These are many and varied and can include data gathering on prolific individuals, joint police / cross modal operations, the use of Oyster usage reports, station gateline intelligence often supported with surveillance footage. We also recently reported in TRU86 about a six month trial of a body worn video recording badge, similar to equipment used by a number of Police forces.



A further breakdown is provided in the table on the right, which shows the average for each offence during the same 5 year period.

There is a large gap (16%) between the two main offences and the rest, reinforcing the importance of closing the gaps across our network, where these types of irregularities can be committed.

This can be done, as was seen with child impersonation, which was a much higher irregularity in the late 1990's before touchscreen MFMs were brought in along with the ability to restrict sales of certain ticket types that made child tickets easier to misuse.

Offence	Average (%)
No ticket	29
Non validated PAYG	28
Child impersonation	12
Out of area (Oyster)	12
Out of area (Magnetic)	9
Runners	4
Other	6



[askolly@tube.tfl.gov.uk](mailto:askolly@tube.tfl.gov.uk)

From: [REDACTED]  
Sent: 18 January 2016 16:32  
To: Ask Olly  
Subject: Confusing POM screen language

Hi Olly,

I have just had a customer unwittingly refund her Oyster card. She went to the MFM to claim a refund she was entitled to and pressed the Oyster refund button, with the obvious consequence of her card now being disabled and after buying a new one having to get the refund put onto the new card.

This is not the first instance of cards being cancelled when the customer does not want to, so would it be possible to change the colour to red to alert the customer or some less confusing language such as " I do not require this Oyster any longer "

Regards

[REDACTED]

Hi [REDACTED]

Thank you for your email

This is not the first report we have received of customers accidentally cancelling their Oyster card when attempting to pick up a refund from a POM, although the number of such reports have declined over the last year since the facility was introduced.

Since the problem was first highlighted, changes have been made to the POM screens to make it clearer to the customer that their card will be cancelled by the process. An additional step was added to the process requiring the customer to confirm that they wish to cancel their card before the transaction is completed. Unfortunately it would appear that some customers have not read the text and just pressed the confirm button.

Regards

*Olly Oyster*

Hi [REDACTED]

Thank you for your email and query.

We have had a few similar comments over the last year regarding customers forgetting to request a receipt from the POM.

Unfortunately it is not easy to modify the POMs to provide a facility to reprint a receipt in the manner you suggest. However, in the last round of POM screen changes, Cubic made changes to the receipt button to make it clearer to users.

Regards

*Olly Oyster*

From: [REDACTED]  
Sent: 03 February 2016 13:04  
To: Ask Olly  
Subject: Receipt option after transaction.

Hello Olly,

Keep up the good work.

Just wanted to check, is there a way you can include an option on CSID screen for a last transaction receipt print?

Many customers at Waterloo either do not see the option or realise too late that they need a receipt.

Thanks very much.

[REDACTED]

From: [REDACTED]  
Sent: 16 January 2016 23:18  
To: Ask Olly  
Subject: MFM Closing as customer is refunding an Oyster card

Hi Olly,

Recently at Oxford Circus we've had a number of customers who did not receive their money back when refunding an Oyster card (some witnessed by staff) as the machine closed down at the point of finalising the transaction.

When staff investigated, the Oyster card shows as cancelled (touch screen greyed out), IE on MFM shows no kept cash, when card is presented to TOM/SAF shows as blank and SAF journal shows nothing, unlike the information you see for a failed sale

I cannot find a correct procedure to deal with this problem in the rule books so do we?

Option 1 - Refer customer to Customer Services

Option 2 - As some staff believe, take the customer's word and process as POM refund on TOM/SAF like a failed sale fail

Option 3 - Use "Report of lost money in POM"

Can you please advise, my choice is option 1 Kind Regards  
Regards

Hi [REDACTED],

We have had similar reports from a couple of other stations with MFM fitted with Bank Note Recyclers.

Investigations undertaken by Cubic have established that there is a software problem which occurs if three consecutive Oyster cards are refunded on the same device. When this occurs the device goes into a reset and unfortunately when it recovers appears to have no recollection of cancelling the customer's card. As you describe in your email, the customer does not receive their refund and no failed sale is shown on the SAF.

A fix to prevent this happening has now been identified and is scheduled to be applied to all MFMs in the next MFM upgrade scheduled for June 2016. In the meantime, the best course of action is probably to refer the customer to the Customer Contact Centre, as at station level there will be no way of checking what was originally on the customer's card.

Regards

*Olly Oyster*

Hi [REDACTED],

Thanks for your email, which is very timely as we are covering a number aspects of the failed card process in this edition of TRU (See Pages 10 & 11).

The Failed Card slips you refer to, are supplied to stations in books by the T&R team. We will arrange for a book to be supplied to your station. Any other stations requiring replacements should ring or email the team.

In relation to the main failed card process, it has been confirmed by Customer Experience, that when the customer links their old and new cards, the additional deposit they have to pay for the replacement card is also refunded to their card when products are transferred. The customer should not therefore be out of pocket as a result of their card failing.

Regards

*Olly Oyster*

From: [REDACTED]  
Sent: 07 February 2016 10:22  
To: Ask Olly  
Cc: +SS All  
Subject: Replacement of failed Oyster by Customer Service

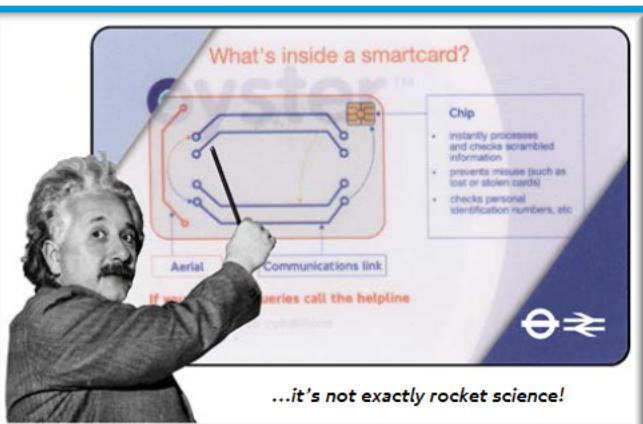
Hi Olly,

I have 2 questions, firstly where on the Intranet can we find Replacement of Failed Oyster Card forms? The copy I have been given is a poor quality faxed copy. It's barely legible and won't stand up to being photocopied. It also doesn't appear to be very "official" bearing in mind how strict LU are on procedures! It also does not appear in any rule book.

My second question is relating to replacement of failed Oysters where the customer is referred to customer services. The instructions state they should purchase another card and provided they create an online account they should be able to pick up their replacement product/ticket the next day. So when do they get the deposit back from the original/failed card, (this isn't mentioned on the above form) after all if we replace the card they are not forking out another £5 deposit.

Thanks

# OYSTER EXPLAINED



As promised in the last TRU, we are devoting the first Oyster Explained feature of 2016 to reviewing a topic that has caused some confusion amongst staff and where misguided some people may not have been following the correct procedure or giving correct advice to customers as a result.

## FAILED OYSTER CARDS

Compared to magnetic tickets, the Oyster card is a lot more durable and reliable. Statistically instances of cards failing are relatively low, but given the quantity of Oyster cards in circulation, there will still be occasions where Oyster cards stop working. More often than not, this is not as a result of a failure of the card itself, but due to the treatment of the card by the customer. One of the most common reasons for this being customers putting the card in their back pocket and then sitting on it. This causes the internal aerial, as shown by Einstein in the image in the header above, to break thereby preventing the card communicating with the RTD.

### So what does the customer do if their card stops working?

If their card is an Oyster Photocard, they will need to contact the helpdesk via the number shown on the rear of their card or via the main Customer Contact Centre number.

A replacement card will then be issued to the customer and their original hot listed. Arrangements will also be made for any products or PAYG balance to be transferred to the new card via a nominated station. If this is not possible a refund of the unexpired product will be processed.

If the card is an old 18+ Oyster Photocard on which the discount entitlement has expired, the customer will need to replace this with a standard Oyster card as outlined in the process at the top of the page opposite.

In cases where the failed card is a Staff, Staff Nominee, Police or any other TfL issued card, then the holder will need to apply for a replacement card via TfL Staff travel or the department who issued the card to them. In the case of Freedom Passes, the holder would need to apply for a replacement card via the London Councils helpline or their website. Details of both are shown below.

	Telephone	Website
London Councils Freedom Pass Helpline	0300 330 1433   020 7934 9633	<a href="http://www.freedompass.org">www.freedompass.org</a>

One important point to highlight is that in all cases the holder would need to purchase a ticket or use PAYG for any journeys they need to make whilst awaiting a replacement card to be issued to them.

To dispel one common myth;

Unlike magnetic tickets, there are no circumstances where we would accept an Oyster card that fails to work the gates for travel by visual inspection.

If we are unable to read an Oyster card, there is no way of us checking whether it has previously been hot listed, disabled or cancelled. There have been cases of Oyster cards which have been stopped for misuse or where the holder has ceased to be entitled to the card or discount, being deliberately damaged or even snapped in two, in an effort to continue to use the card or obtain a replacement card.



# OYSTER EXPLAINED

For standard retail Oyster cards the advice to customers should always be to:

- pay for a new Oyster card from a POM or other outlet,
- add sufficient PAYG to cover a couple of days travel
- link their old and new cards online or by calling the Customer Contact Centre

When following this process, the contents of their original card will then be transferred to their replacement, although any valid discount entitlements will need to be re-added via a POM or TOM.

It should be noted that this process is consistent across the whole Oyster network and other issuing outlets, none of which replace cards that have failed.

On LU we do have some additional functionality, which can be used in a very restricted number of circumstances.

In cases where a card is intermittently not working, but can be read by a device, if a TSID card holder is available, it may be possible to use the "Copy card" process on the TOM to produce a replacement card which is a direct copy of the original. This will also cancel the defective card in the same transaction. This does not require the holder to take any further action and also copies any valid discounts and their registration details to the replacement card.

In exceptional circumstances, the TOM can also be used to replace a failed card which cannot be read, where the customer is unable to follow the normal process and obtain a new Oyster card. This should only be used in cases e.g. late at night where customer has no money or means of travelling home. This is dependent on being able to confirm details of the card via the Staff Oyster Helpline (SOHL).

The final option available and very much the last resort, is to issue a free replacement card from the POM. This again requires the card details to be confirmed via the SOHL, so is currently only available to TSID card holders and not to staff who only have a CSID PIN. At present there is a backlog of staff who have recently qualified and been issued with a TSID card to be added to the SOHL database. Since the introduction of the Refund facility on the MFM, there have been cases of cards that have been refunded and effectively cancelled by the MFM, subsequently being presented as a failed card. Unfortunately, the state of the card after the MFM has made the refund differs from that when the card has been disabled or cancelled on a TOM and may not be reflected in the information obtained from the SOHL.

In circumstances where the SOHL facility is unavailable, such as during planned closures for maintenance (as advertised in the weekly T&R Hot Issues Bulletin), the facility to replace a failed card will not be available.

The functionality on POM allows the issue of a card with the amount of PAYG indicated by the SOHL, but if the card held a valid season ticket, only allows the addition of a 2 day Travelcard for the appropriate zones. This allows the customer to carry out the normal process for linking their old card with the replacement. The customer will be required to link their old and new cards online or by calling the Customer Contact Centre in the normal way, as outlined above and the customer should be given a pro-forma to remind them to do so.

Later this year it is planned to improve these fall back arrangements, through the introduction of an app for handling failed Oyster cards. However, this will remain very much the last resort when dealing with a failed card and should not be used in preference to the correct process. Further details will be provided in future editions of the TRU.

**Where's Olly?** Instead of our traditional Trivia questions, for 2016 we thought we would try something different. Here are a series of clues to help you guess where Olly is this month?

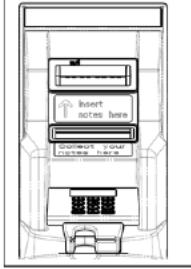
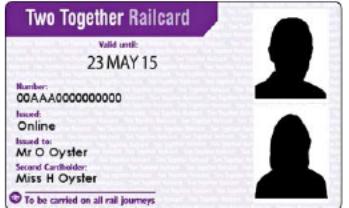
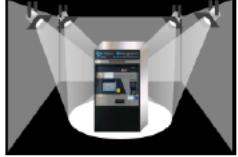
- 1) I am at the terminus of an Underground line situated in Zone 2
- 2) The station is confusingly often known by 2 different names
- 3) It is an interchange with 2 other train operators
- 4) Its often busy when there are events at a large venue nearby
- 5) Today the station is not always served by LU trains

# SPECIAL FEATURE

## T&R REVIEW OF 2015

As is customary in our first edition of TRU each year, we take a look back at 2015, at what made the headlines and some of the more significant events that occurred during the year.

It was actually a year during which some significant T&R changes took place, notably the closure of all LU ticket offices and the steady growth of contactless payments, which now account for more than 25% of PAYG trips.

JANUARY	<p>As with every year, 2015 kicked off with the main Fares Revision of the year on <b>02 January 2015</b>. The fares revision saw the re-introduction of a new Discount entitlement for holders of the NR <b>Disabled Persons Railcards</b>, the <b>Day Bus &amp; Tram Pass</b>, the Group Day Ticket becoming a <b>Group Day Travelcard</b>, Customer Charter Vouchers and Refund Vouchers no longer being accepted as methods of payment. The big news story was a major change to the fares structure to provide a better deal for part time workers.</p>	<b>JANUARY FARES REVISION</b>
FEBRUARY	<p><b>09 February</b> saw the completion of the upgrade of all of our POMs and the start of an issue with customers' money being retained in the event of a transaction not being completed. Later in the year this was addressed by increasing the time the customer had to complete their purchase.</p> <p><b>17 February</b> saw the completion of the last of the initial batch of 68 Bank Note Recycler units installed within our MFMs.</p> <p><b>28 February</b> saw the closure of the dedicated Staff Helpline for Contactless Payments, as like the famous Carlsberg complaints line advert, nobody used it!</p>	
MARCH	<p><b>28 March</b> saw some further changes being made to POMs via a base data change. These changes added the <b>Two Together Railcard</b> to the Railcards shown on POM screens and allowed holders to buy discounted magnetic tickets. The <b>Group Day Travelcard</b> introduced as part of the January Fares Revision also became available from POMs after a short period where Group tickets were only available when the ticket office was open.</p>	
APRIL	<p>After widespread problems with MFMs reporting spurious error 204/205s, the performance of the MFM came very much under the spotlight, as the number of ticket offices closing began to increase. On <b>29 April</b>, Cubic implemented a fix on the MFM to address these note handling issues.</p>	
MAY	<p>Unusually the 2015 May Fares Revision was actually split into two, with some of the changes being implemented on <b>17 May</b>, in conjunction with the transfer of a number of rail services running out of Liverpool Street, from Greater Anglia to LOROL and the new TfL rail operation.</p> <p>The remaining changes were implemented two weeks later on <b>31 May</b> and saw the end of the acceptance of Warrants and NR Travel Vouchers as methods of payment.</p>	<b>MAY FARES REVISION</b>
JUNE	<p>It was announced as part of the Mayor's 2015 Fares Package that the application fees for most Oyster Photocards other than 5-10 cards would be increased from <b>15 June</b>. The fees for 11-15 increased to £15, whilst those for other types of Oyster Photocard went up to £20. There was no change to the arrangements for replacing lost, stolen or damaged cards.</p> <p>The latter part of June was also given over to preparations for some fairly extensive changes to the options available to pay for journeys, which were implemented in July.</p>	

# SPECIAL FEATURE

## T&R REVIEW OF 2015 continued

JULY	<p>PAYG options increased dramatically with the introduction of both Barclaycard BPay on <b>06 July</b> and then ApplePay on <b>14 July</b> as additional methods of making journeys using contactless payment technology.</p> <p><b>19 July</b> saw a further MFM change with the increase of the time allowance for customers to complete their purchase before the device timed out.</p> <p><b>31 July</b> saw a further expansion of PAYG options with PAYG acceptance being extended to the South Eastern High Speed service between St Pancras and Stratford International stations. Fares on this route are outside the usual charging and capping arrangements.</p>	 
	<p>From <b>02 August</b> the ability to be able to set the Young Visitor Discount was extended from Gateway and Zone 1 stations to all other LU stations.</p> <p>On <b>14 August</b>, contactless payment was extended to cover flights on the Emirates Airline cable car service.</p> <p>From <b>17 August</b> a new contract between TfL and Cubic saw the Revenue Collection Contract (RCC) replace the previous Future Ticketing Agreement (FTA). This introduced a number of new regimes for performance targets and performance related payments.</p>	AUGUST
SEPTEMBER	<p>The final fares revision of 2015 took place on <b>Sunday 06 September</b>. Amongst the changes implemented were changes to POM screens to make the availability of Bus &amp; Tram Passes and Child tickets clearer to customers, the further extension of PAYG acceptance on South Eastern to Dartford and the final withdrawal of acceptance of all remaining types of cheques as methods of payment. From <b>15 September</b> PAYG also became available on Thames river services.</p> <p>On a less positive note the planned introduction of Nightube services was postponed, despite the ticketing changes required having been implemented and tested earlier in the year.</p>	
	<p><b>01 October</b> saw a further fix being applied to MFMs to try and address a surge in fraudulent refund activity.</p> <p>Following the signing of a contract with Scancoin for the provision of Cash Handling Devices for all LU stations on <b>02 September</b>, the rollout of the new CHDs finally commenced on <b>26 October</b>, with the replacement of the previous trial equipment at Acton Town and three days later the replacement of the other G4S device which had been in use at Gloucester Road.</p>	OCTOBER
NOVEMBER	<p>During November the TMS (Ticket Machine Servicing) training programme kicked off, to prepare staff who did not have a TSID card to be able to service POMs and deal with the associated processes.</p> <p>An upgrade of all Oyster card readers (RTDs) also took place in preparation for the long awaited expansion of PAYG to Gatwick Airport and intermediate stations in early 2016. The upgrade provided more flexibility for charging non-standard fares for this type of journey.</p>	
	<p>Following the installation of the Vanguard of the first four 4 Scancoin CHDs, the long awaited rollout commenced with the installation of the first new device at Sloane Square on <b>07 December</b>. In the run up to Christmas additional devices were installed at other stations on the Euston, Gloucester Road and Hendon Central groups and at a number of other locations in readiness for the expansion to other groups in 2016.</p> <p>Much of the rest of December was given over to preparations for the January Fares Revision, following the announcement by the Mayor. But as they say that's a story for next year!</p>	DECEMBER

# PROJECT UPDATES

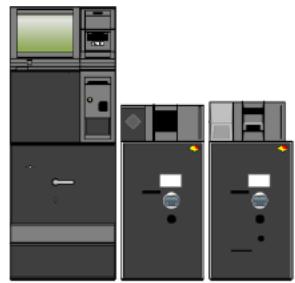
## CASH HANDLING DEVICE ROLLOUT CONTINUES

As we reported in TRU89, the rollout of further CHDs is now continuing after a brief interlude over the Christmas period. Currently we are installing around 5 devices per week and by the first week of March we should have installed over 50 devices across the network.

A two week break was scheduled between the completion of the first and second wave of installations, which began in the last week of February.

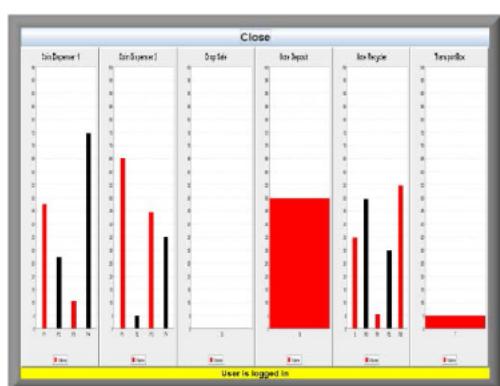
Installations will continue on the basis of current cover groups, although we have asked for a number of earlier installations at a number of sites, to assist with briefing and familiarising staff on the equipment in advance of other devices being installed on their group.

During the brief interlude between installations, Scancoin had planned to address a number of issues and to make some minor modifications to tackle issues identified during the early stages of rollout. This also included standardisation of some of the device settings, which previously varied between sites. Unfortunately after completion of devices on the Hendon Central, Euston and Gloucester Road groups, this work had to be suspended to address some other issues that had arisen affecting the modem connection between devices and the Scancoin back office system.



Some of the planned changes were:

- *reintroduction of a graphical representation of the device contents on the screen (left)*
- *standardisation of dispense limits and restrictions on note dispense*
- *standardisation of wording on screens and receipts*
- *modification to coin sorter to prevent coins entering the wrong hopper*
- *adjustment of acceptance criteria to reject a number of foreign coins with similar characteristics to UK coins.*



Most stations have now been updated with all of the above features apart from the graph to show device contents.

Feedback from users at the stations already using the CHD have identified some other issues which Scancoin have been quick to address with new software and modifications to the devices. These have already been implemented on a number of recently installed machines and will be retrospectively applied to other CHDs when an opportunity arises. This will either be when an engineer attends site to deal with a failure, or in the next break between installations at the beginning of April.

These further modifications include:

- *fitting of a stud to the bulk coin dispense tray for the coin handler of the smaller unit, to prevent the build up of static when a bulk coin bag is dispensed*
- *change to the Note Recycler settings to allow the device to accept notes and store them on the recycler rolls, even after the Collection Sack has been filled*
- *the above modification will also prevent the dispense of £20 notes and allow us to reach the full £20k limit on the collection sack. (previously this was set just below £20k to take account of notes that had already been accepted, but were in transit through the device)*

The current CHD briefing pack will be updated to reflect these changes and to take on board some of the questions and feedback we have received from staff that have been briefed on the use of the CHD at stations which have already had the equipment installed. The new version is likely to be available in early April, along with a "Golden Rules" document to highlight some of the key points that users need to follow when using the Cash handling Device.

## CHIP & PIN UPGRADE

In TRU 87 we outlined plans to replace the current Chip & PIN units on all of our devices later this year. The current units are now life expired and need to be replaced by new devices which are fully compliant with current payment card standards.

The change of the Chip & PIN units or PEDs (PIN Entry Devices) as they are officially known, will also see a change in the way we process bankcard payments, with future processing being outsourced to a third party supplier rather than being completed via the current Cubic operated Bank Card Processor (BCP). This aspect is purely a back office change and should not affect our customers experience when making a payment via our POMs.



We are hoping that the new design of PED with the keypad and card reader separated will make it a lot more difficult for criminal elements to attach skimming units to our POMs. Regular TRU readers will be aware that we have had a regular stream of skimming devices of various designs being found on our equipment. The latest example being discovered when a faulty PED was returned to the Cubic workshop for repair and a card reader was found attached to the green section of the actual unit.

As mentioned in our previous article, the scope of the project includes replacement of the PED on the AFM, MFM and QBM but will also involve a change to the TOM software, so that the device can operate without reporting an error due to a PED not being attached. Fitting the new PED requires modifications to all 3 types of POM as summarised in this table.



Device type	Main features of upgrade			Upgrade method
AFM	New PC	Replacement of panel housing RTD		On site
MFM	New PED slot cut into device			On site
QBM	New 12" touchscreen	New Door	New UPS	Upgraded offsite

Due to the extent of this work on QBMs, which requires the replacement of the whole front door, this will be upgraded within the Cubic workshop, requiring us to use a small pool of spare devices to enable existing units to be swapped with an upgraded device. The device removed will then be upgraded, before being reinstalled at another station to free up a further QBM for upgrading at the Cubic workshop. The upgrade to the QBM will also require a change to the current signing-on arrangements as the current QBM PED has the ability to read a TSID card when staff need to access the device, whereas the new PED will not be able to do this. As a result, in conjunction with the QBM PED rollout, we will be moving to a system where the Staff Oyster card and linked TSID PIN are used to sign-on to the QBM.

Although not as extensive as the changes to the QBM, the upgrade of the AFM will require each AFM to be removed from the POM suite and pulled forward into the ticket hall to allow the Cubic installation teams access to the fixings for the panel on which the RTD is mounted.

The main AFM and QBM Vanguards are currently scheduled for June/July, but recent feedback from Cubic indicates that they may be in a position to Vanguard the new PED on the MFM as early as May this year. The MFM already has a Windows 7 PC capable of supporting the new PED.

More information will be provided in future editions of TRU, once timescales and Vanguard stations have been finalised.



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# PROJECT UPDATES

## LCP3 UPDATE

In project terms, the LCP3 rollout appears to be somewhat like the long running West End show; The Mousetrap. The both seem to go on and on without coming to an end and have a number of unexpected twists.

After a period of little progress, since our last update in TRU89, we are now in a position where Cubic have made some progress in addressing the issues that have affected all three types of gate.



Apart from providing a faster and more reliable communications link between individual gates and the central system, completion of the LCP3 rollout will also mean that gate status will be reported to a new device monitoring app which is being developed for handheld devices. At present this information is only available for stations with E2 Gatelines which have been fitted with the LCP3 and Stratford, where all three gatelines were upgraded as part of the initial E1 Gate Vanguard.

## E2 GATES

We have recently discovered that a number of new E2 gates installed at Bow Road, Whitechapel and Vauxhall had been installed without the current LCP, despite this now being the standard for any new gates being installed. Arrangements were made for these three gatelines to be upgraded during week commencing Monday 08 February.

The last major defect affecting E2 gates resulted in gates occasionally stopping the transmission of transaction data. If not spotted, this would eventually lead to the gate failing with error 16. Whilst their engineering team were searching for a fix, the Cubic Helpdesks support team have been tracking gates that stop transmitting data and arranging for them to be restarted to resolve the issue.



It is now understood that the cause of this problem may be related to how the device recovers from a loss of power. A number of lines of code have been rewritten to change the way the gate performs in such cases and a new version of LCP software is currently being Vanguarded on E2 gates at Cannon Street. Since installation there, a new issue has been identified with a number of gates failing with Error 01. This again relates the failure of the gate to recover from a power failure and is currently being investigated by Cubic. As a result, we are not intending to deploy this version of E2 gate software to any further stations and will wait for a further software version to be released.

## E1 GATES

A new version of E1 gate software, which will address the transaction lock up and errors 30/130 being indicated when processing certain magnetic tickets, is currently being trialled as part of a Vanguard on four E1 gates on each of the Stratford (East) and Stratford (Mezzanine) gatelines and on two newly installed E1 Gates at Tufnell Park.

Providing no issues are seen we will then look to expand the Vanguard to initially include a small number of gates at London Bridge after Easter. This is a change to our original plan, which was to have the Bank (Waterloo & City) gateline as the second E1 site.



Given feedback from the original Vanguard and the small number of gates on each platform to deal with some very uneven customer flows, it was decided to deploy to an alternative site which also has a high level of NR magnetic tickets, but less risk.

If the Vanguard is successful, we then plan to start the long awaited E1 rollout in early May, at a rate of around 36 gates per night. This will also include the upgrading of the gate service panels with a new design.

## LCP3 UPDATE

**CONTINUED...**  
FROM PREVIOUS PAGE

## PNEUMATIC GATES

Following on from the deployment to E1 gates, the plan is to then complete testing on a further version of Pneumatic gate software and to then restart the Vanguard on Pneumatic gates at the two original sites; Liverpool Street (Central) and Euston Square.



Hopefully rectification of the known issues on both E2 and E1 gates will make this process a little easier, although the physical installation of the LCP within the Pneumatic gates with very old cables, will present its own difficulties.

A summary of current plan for each gate type are included in the table below.

COMPLETE	E2 VANGUARD	WEST HAM	FARRINGDON (Turnmill St)
COMPLETE	Rollout to E2 gatelines	Further upgrade required	
Underway	E1 VANGUARD	STRATFORD (Mezzanine)	STRATFORD (East)
Early May 2016	Rollout to mixed E1 & E2 gatelines		
To be advised	P-GATE VANGUARD	LIVERPOOL ST (Central)	EUSTON SQUARE
To be advised	Rollout to stations with P-Gates		

## NEW T&amp;R APPS DEPLOYED

Further to the report in TRU 88 and following an initial trial with users on the Central East, Leytonstone and Kings Cross groups, we have recently deployed three new apps that will allow users across the network to complete 3 of the existing T&R forms on their iPad. All staff should have access to these by 23 March and following this, from Sunday 28 March, this version should be used in preference to the previous intranet based forms. Instructions on how to load the forms have been emailed to all users in advance of the apps going live.

The three T&R forms involved are;

- Missed Collections
- Ticketing Consumables Orders
- Change Delivery Order (Area Manager and Customer Service Managers only)

A further Device Monitoring App is currently being developed by Cubic and IM and initial testing at the first station on the LU network was scheduled to take place as TRU went to print. This further app will then be deployed once user acceptance testing has been satisfactorily completed. We will provide a further update on this and the development of a further app for dealing with failed Oyster cards (as mentioned in our Oyster Explained feature on Page 11) in the next edition of TRU.

**LAL MXD E PU**

Part 2 – We've mixed up the letters in these station names. Can you work them out?



(b)

WHO WON TUSSLE

*Is there a connection?  
– You decide.  
Answers on Page 19.*



(c)

DATING POND

(d)



(e)

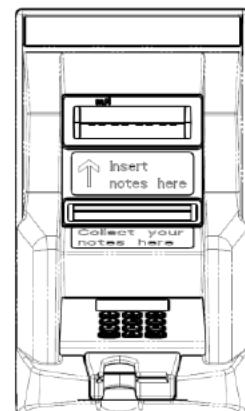
Ticketing & Revenue  
**T & R**  
Trivia

# PROJECT UPDATES

## MFM BNR UPGRADES

Back in TRU85 we reported that approval had been given for the purchase of 20 further Bank Note Recycler (BNR) units for MFM units. Once installed, this will bring the total number of MFM units with Bank Note Recyclers to 100.

Since we wrote our last article, there have been a couple of minor changes to the programme to reflect the fact that Bayswater has since had a second MFM installed, whilst the second MFM which was to have been installed at Queensway will now not be installed there. As a result, the last of the current batch of 20 units has been held back and will be installed at either Westminster or Marble Arch when these sites receive a second MFM.



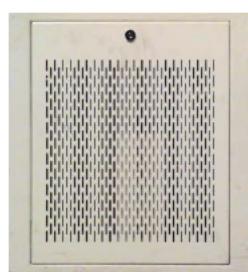
The latest BNR rollout commenced on Tuesday 02 February at Queensway, as the first Planned installation at Bond Street had to be postponed due to one of the install team being taken ill on the previous night. Rollout took place over the following four weeks as the single installation team were only able to complete one device per night. Unfortunately at the end of the programme two of the new BNR units were found to be defective and had to be returned to the manufacturers for replacement. This resulted in the installation of the second BNR at Bond Street being postponed for a second time.

We are currently awaiting a new date from Cubic, for the remaining unit to be installed.

One issue affecting the BNR that we have previously reported on in TRU, involves the maximum number of notes that the note recycler rolls within the BNR will accept. Feedback from stations indicated a spate of failures where the BNR unit became over full and then jammed. Following a trial on one of the MFM units at Oxford Circus, Cubic are now planning to rollout modified software to all other MFM units that have a BNR unit fitted, which will slightly reduce the maximum number of notes the unit will hold. We had hoped that this would be available to be included in the 20 additional units we were installing, but it now looks as if these will need to also be included within the forthcoming upgrade programme.

## SAF UPGRADES COMPLETED

The programme to replace all of our SAF PCs with new units operating on the Windows 7 operating system was completed on Tuesday 26 January. The latter stages of the rollout seeing a number of SAFs being upgraded ahead of the relocation of TOMs within several recently closed ticket offices.



NEW GRILL DESIGN

Four of the last stations to have SAFs upgraded were Regents Park, Charing Cross (Trafalgar Square), Wood Lane and Bank (Northern) where the TOM and SAF PCs gave been combined within a modified SAF cabinet (as illustrated to the left and right).



SAF PC (Left)  
TOM PC (Right)

The current solution has a single button to switch between TOM functions and the reduced functionality on the SAF, which has been retained primarily to provide a backup to the TOM and complete accounting unit functions.



DATA CONTROL SWITCH

We had planned to revisit these sites before Christmas but a shortage of the necessary cables required, caused these visits to be deferred. Cubic have since completed this work, but will also visit all SAFs to check the installations are compliant.

These visits will be undertaken during traffic hours and should not cause any disruption to station operations.



## NEW COIN VALIDATORS

In TRU 87 we reported on the Vanguard of a new type of coin validator in 5 MFM's at;



Since introduction, these units have appeared to perform well and recent analysis undertaken by Cubic indicates a significant reduction in the number of coin validator related faults reported on these devices, compared to those reported in previous periods when they had been fitted with standard validators.

We have also undertaken some further testing of the acceptance of invalid coins on the new Eagle validator, compared with the standard unit. These tests showed a significant reduction in the acceptance of a number of the coins we have had problems with over the last couple of years, notably the Swaziland 1 Lilangeni, Icelandic 10 Krona and Guatemalan 25 Centavos. During the recent tests the Eagle validator rejected all of these coins, whereas its predecessor accepted 100% of these coins.



As the previous design of validator is no longer available any replacement units purchased will need to be of the new design. We are hoping to be able to accelerate this transition by obtaining funding to purchase a batch of these new validators, to enable us to swap out and scrap some of the worst performing MFM validators and thereby improve device reliability. Eventually current MFM validators can be used as spares for the AFM as these machines are not currently able to accommodate the new Eagle validator. As part of the forthcoming AFM PED upgrade (see Page 15) Cubic are hoping to be able to also carry out a modification to the coin handler backbone, so that in the future the AFM will be able to accommodate either design of validator.

## GATE POD UPGRADE CANCELLED

In TRU we try to report on projects in the early stages of development. Unfortunately a side effect of this is that sometimes ideas we report on do not come to fruition or are overtaken by other events. One such case is the planned upgrade of the Passenger Orientated Displays (PODs) on each of our three types of gate to give more consistent information for customers and staff.

It has recently been announced that due to a spending review within TfL the work to take designs for each gate type forward has been cancelled and the upgrade will therefore not go ahead as we originally thought.

## ANSWERS TO T&R TRIVIA

Pt.2 **LAL MXIDE PU**



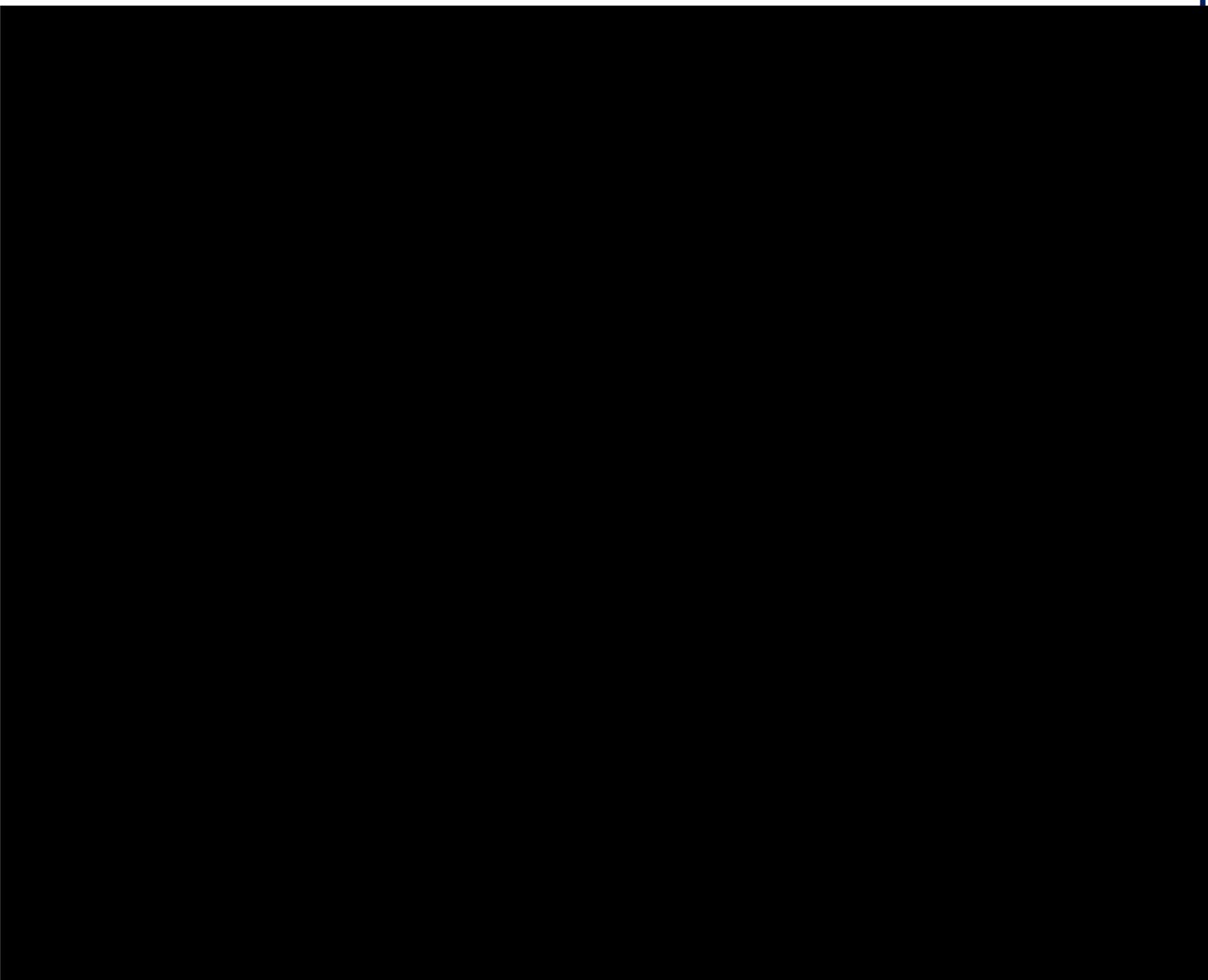
Pt.1 **WHERE'S  
WOLLY?**

Olympia (or Kensington Olympia)

**How did you do?**



## POM FRAUD



## NEXT ISSUE

As stated in our apology on the front page of this issue, a number of recent issues have conspired to delay the publication of this edition of TRU.

We are hoping to publish the next edition at the end of April, when we will be planning to cover:

- Preview of the May Fares Revision changes
- Update on rollout of CHDs and recent changes being made to device hardware and software
- Results of the recent Oyster charity box “funds matching” initiative with DfID
- Updates on other T&R Projects



Plus a selection of the usual features and a further selection of letters to Ask Olly.