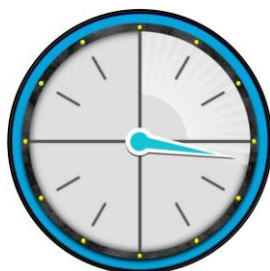




COUNTDOWN TO TRU 100

2017 seems to be galloping away, the clocks have gone forward, Easter has been and gone and we are in the process of planning a bumper centenary edition of TRU to mark our 100th edition.

This edition has been slimmed down to a modest 12 pages, so some of our regular items may be missing this month, but hopefully will provide a useful update on a number of topical T&R issues.



APOLOGIES FOR THE LATE RUNNING

Despite a very slimmed down TRU99, events have again conspired against us meeting our planned publication date.

An unprecedented level of project work and device upgrades currently being undertaken, have prevented us from devoting as much time as we would have liked to be able to complete this edition. Some significant changes on a couple of projects have also resulted in publication being stopped, so that items could be updated or rewritten to reflect the latest information.

We felt it better to publish a little later than planned with the most up to date information, rather than go to print with information that is potentially incorrect or out of date.

The Easter holiday period also means that printing and distribution of the paper copies of TRU which we send to stations has also been delayed.

As a knock-on from the delay to this edition, our proposed centenary edition is now scheduled to appear in Mid-May, rather than at the end of April as we had originally planned.

INSIDE THIS EDITION

IN THE NEWS

Pages 1-4 → POM Screen Changes
→ Time Change → NR Ticketing
→ New NLC for Victoria

ASK OLLIE!

Page 6-7 → More of Your Letters Answered

TRIVIA – Pages 1, 2, & 7 (Answers on Page 11)

PROJECT UPDATES

Pages 8-11 → LCP 3 → POM Upgrades → PED Update → Ticket Stock

AND FINALLY

Page 12 → Repeat Failures
→ Preview of TRU 100 →

KEY STORIES INSIDE

Page 3 CURRENCY CHANGES

In our latest in our series of updates, we bring you news on plans to withdraw the old paper £5 note and the old £1 coin, now that new designs are in circulation.

Page 5 T&R TEAM – WHO TO TURN TO?

A guide on how to ensure that your queries reach the right person, together with details of new contact numbers being introduced as a result of a recent telephone upgrade.

Page 8 GATE LCP UPDATE

We report on recent progress on a project, which after many delays is fast approaching completion of a major milestone.

Pages 10 POM CHIP & PIN UPGRADE

We update you on recent progress as we approach completion of the MFM programme and look at the next steps with other devices.

Page 12 REPEAT FAILURES

As a follow-on to a feature in TRU98, we provide a look at the process for escalating faults and provide some guidance on what to do if individual devices repeatedly fail with the same fault.

ALSO INSIDE...



THIS PUBLICATION IS WRITTEN AND COMPILED BY

POM SCREEN UPGRADES

As an early part of the forthcoming May Fares Revision changes, Cubic deployed some further changes to POM screens as part of a base data upgrade on **Sunday 12 March**.

Following staff feedback, screens have now been changed so that if an Oyster card which has been cancelled and refunded or has been disabled is presented to a POM, the customer will now see an orange box with a message displayed indicating that the card has been stopped and can no longer be used.

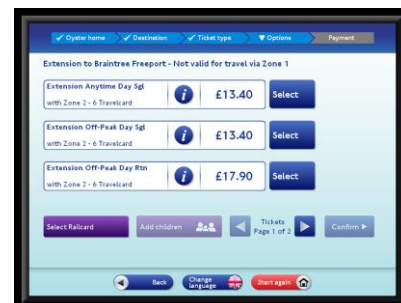
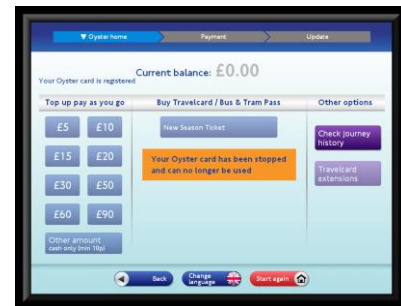
Previously if a cancelled card was presented to a POM, the screen showed the balance, but was greyed out, leading to some confusion over the cards status and whether it had failed or not. This had resulted in some cards being treated as a failed card, when they had actually been previously refunded and cancelled.

The same base data update also saw the expansion of the pilot of the facility for non-Zone 1 ticket holders to buy extension tickets to NR destinations outside of the zonal area.

The initial pilot which commenced at **Buckhurst Hill** in November 2016, has now been extended to the further 10 stations listed below.

AMERSHAM	EARLS COURT	LEYTONSTONE	STRATFORD	WEST FINCHLEY
DAGENHAM EAST	LEYTON	MILE END	WATFORD	WEST RUISLIP

The number of stations offering this facility will now be progressively increased until the facility is eventually available on POMs at all locations.



GMT ➔ TO ➔ BST ➔ TIME ➔ CHANGE – What went well / What ‘not so’ well

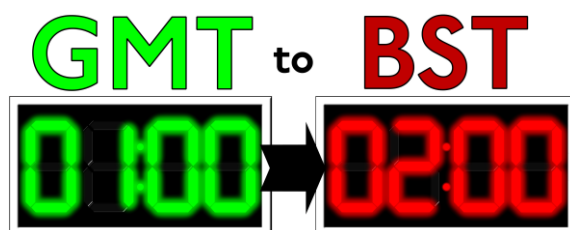
UK clocks changed from Greenwich Mean Time (GMT) to British Summer Time (BST) at 01:00 hours on **Sunday 26 March 2017**, marking the first time that clocks had gone ‘forward’ since the introduction of Night Tube Services on LU.



Put simply - The good news is that for this particular time change, there do not appear to have been any problems with LU devices switching over to BST.

With **Maximum Journey Times** and the recent introduction of **Bus Hopper** fares, this meant we now had possible scenarios of customers entering through a gateline or boarding a bus at 00:59 hours and in the minute or two they’d taken to find a seat, could have been “travelling” for over an hour.

Potentially this would have resulted in their journey exceeding the maximum journey time allowed and them being charged for two incomplete journeys. Whilst bus users interchanging between Night bus services may have been charged for their second journey, when this would normally be free. To mitigate for this, the Customer Experience team put in place measures to identify Oyster cards affected and apply automatic refunds.



Part 2 – The new £1 coin was introduced into circulation on Tuesday 28 March 2017...

Q1) ... but do you know when the very first £1 coin became legal tender?

- | | | | |
|---|------------------|---|---------------|
| A | 16 February 1980 | B | 25 May 1981 |
| C | 30 October 1982 | D | 21 April 1983 |



Ticketing & Revenue
T&R
Trivia

Answers on Page 11



HOW LONG WILL THE OLD £1 COIN BE A-ROUND?

We have devoted quite a lot of TRU coverage to the new design of £1 coin and our plans to ensure our equipment is ready for its introduction.

As the new coinage has now entered circulation, we enter a period of dual running where POMs and the CHD will accept and dispense either version of £1 coin. During this period we will bank £1 coins in mixed bags, which G4S will process and separate at their cash centres.

One question we have been asked is how long customers can still use the old design of coin? The official date for the withdrawal of the current round pound is **Sunday 15 October**, which is actually just over 6 months after the new coin was launched on **Tuesday 28 March**. This is due to a fairly aggressive swap out of the old coins, which will see any of the older design which are banked, being immediately withdrawn and only new coins being sent out by banks and cash centres.

As volumes of the old style of coin reduce, we will need to complete several further rounds of work.

- *Further upgrade to CHD to direct old £1 coins to the overflow rather than the £1 coin hopper – so that we can start to bank the small amounts still coming through POMs separately*
- *Upgrade to POM coin validators to prevent acceptance of the old type of £1. It is possible that this work will start before 15 October on some devices*
- *Finally a further change to CHD settings to get devices to reject the old style £1 coins once they are no longer legal tender.*

END OF THE ROAD FOR THE PAPER FIVER

Following the introduction of the new polymer £5 note last September, it has been announced that the old design of paper £5 note will cease to be legal tender from **Friday 05 May 2017**. This means they will no longer be accepted for purchases in shops, but if for some reason there is a stash of them under your mattress, you will still be able to exchange them at a bank.

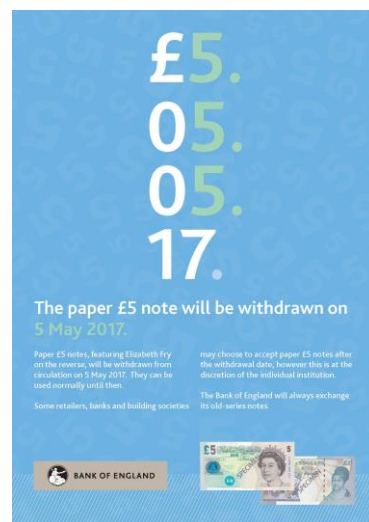
At stations where the MFM's are fitted with the Bank Note Recycler (BNR) units, it will be necessary to dump the contents of the note recyclers into the note vault on the evening of **Thursday 04 May**, to ensure there are no old £5 notes still on the recyclers and remove the risk of an old note being dispensed to a customer, either as change or as a refund after 05 May.

Similarly it is recommended that any £5 notes held on the recyclers of the CHD are also transferred into the collection sack on the night of Thursday 04 May or morning of Friday 05 May, to avoid old notes being dispensed for change giving etc.

From 05 May, Cubic will begin a 2 week programme to upgrade all of the 98 MFM's which are currently fitted with BNR units. A site visit undertaken during the day (to minimise the impact on staff and customers) will see an engineer load a new note set onto the device. In addition to stopping acceptance of the paper £5 note, the upgrade will include the addition of the new designs of polymer £10 notes which are due to be introduced in September. The BNR upgrade will allow both £5 note recycling units to store polymer notes, rather than the current situation, where one takes polymer and the other paper. Unfortunately, the capacity for storing paper £10 notes will be reduced, as one of the current £10 recyclers will need to be set aside for polymer £10 notes. This will mean that from May until the new notes come into circulation, MFM's with the BNR will be able to store fewer £10 notes than currently.

For the remaining MFM's that are fitted with the traditional Bank Note Acceptors (BNA) we will not be taking immediate action to upgrade these. Since these devices do not dispense notes, there is not such urgency to perform the necessary modification. They will therefore continue to accept the old paper £5 notes for the time being. The new note set to allow acceptance of the polymer £10 note later in the year, is not yet ready for deployment and we will therefore wait for all of the testing to be completed and deploy the new note acceptance software during the summer, to avoid two separate visits having to be made to each machine.

Please note that any old £5 notes accepted can still be banked as normal, either via the CHD or in a counted bag as **VALID currency**. They must **Not** be treated as Invalid currency as we can still bank them.



ITSO ISSUES

The RTD, card reader or Tri-reader as it is also known, has the functionality to read three formats of card; Oyster, contactless and ITSO. We have devoted quite a lot of TRU space to the first two of these but ITSO, which is currently the least used of the three, is often overlooked. However, as the number of Train Operators (TOCs) issuing products on ITSO format cards and the number of customers using ITSO cards increases, we have recently seen a number of issues being reported by our stations.

At **Charing Cross**, where the closure of the Strand ticket hall has led to the growing number of Key card users being concentrated through the Trafalgar Square gateline. A customer complaint recently highlighted that several of the gates there would not accept Key cards whilst a couple did. A subsequent investigation by Cubic identified that a card within the reader (RTD) had not been correctly profiled to accept the full range of ITSO cards. When a new RTD is installed or needs to be updated, the correct profile should be loaded from the Station Computer (SC). In the case of the gates at Charing Cross, this process appears to have failed and subsequent attempts by Cubic to remotely update the cards within the affected RTDs proved unsuccessful. The issue was eventually resolved via an engineer visit to each of the affected gates.

So if you encounter ITSO cards on which the customer has a Travelcard season ticket loaded and it fails to work our gates, you should:

- *check the card on a POM to verify a valid product is held*
- *try the card on another gate reader*
- *report any gates that are not accepting ITSO cards, to the Cubic Helpdesk.*

The other ITSO related issue we have recently resolved, also involved South Eastern Key card customers, this time at Stratford.

Here the issue was slightly different and involved South Eastern customers with point to point season tickets valid to London Terminals, breaking their journey at Stratford International (usually to visit the Westfield shopping centre). Unfortunately when they attempted to resume their journey and travel on into central London, their cards were rejected by our gates at Stratford.

Inter-availability of tickets on NR and TfL services between **Stratford** and **Liverpool Street**, means that holders of these London Terminals tickets are able to use them to travel between Stratford and Liverpool Street via the Central line. It was subsequently discovered that the inter-availability on this route had been overlooked when South Eastern provided the necessary settings for gates to be able to accept their ITSO Key cards and season ticket products loaded onto them. The situation has now been resolved and Key card users should now be able to use their cards at Liverpool Street and Stratford when continuing their journey into the City.



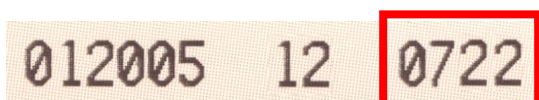
NEW NLC FOR VICTORIA

As previously reported in **TRU98**, the on-going works to expand **Victoria** Underground station will see the installation of a number of additional gates and POMs in an expanded Main ticket hall.

As we are restricted to a maximum of **99 devices** on any NLC (National Location Code), we have had to request a new NLC for part of the station.

As we reported last month, a new NLC (0722) has been set up for the existing Victoria (District) ticket hall and this will require all of the existing gates and other devices to be transferred over to new numbers on this new NLC. Dates for this work to be completed are yet to be confirmed, but it will probably need to be completed in two phases.

This will allow us to re-number these devices so that devices are numbered in sequence, as well as freeing up a range of numbers on the existing Victoria NLC, which we can then use to provide numbers for an extended Victoria gateline within the expanded main ticket hall. It will also eventually allow a number of devices numbered outside of the conventional device number ranges, to be given more appropriate numbers in the final numbering scheme.



Like the work previously undertaken at Stratford, this may require a number of phases of work to be undertaken to renumber the machines to the correct numbers.

T&R TEAM – WHO DOES WHAT and WHO TO CONTACT?

In response to a couple of requests and a steady flow of emails and other queries which are often misdirected, we had planned to include a feature this month to outline who does what within the LU T&R team.

Recent events and the introduction of a new telephone system within the 55 Broadway Complex (where we are based) have now made this a necessity, as the new phones will mean that all team members will be having new personal phone numbers.



This has given us the opportunity of setting up some additional short or abbreviated dialling numbers in line with some of the email mailboxes we currently use. It also will help us ensure that queries are directed to the right place and avoid the need to change numbers again in the future.

We strongly recommend use of the contacts below, rather than sending emails to or calling individual team members, as this will ensure that the matter is actioned by the first person available, rather than waiting for a named individual, who may be on leave or away from the office, and therefore unable to respond.



	TSID HELPLINE	TSID ACTIVATION	CSID HELPLINE	CHD HELPLINE
Autophone	1768	55791	1768	1769
Email				

As mentioned, individual phone numbers have also been changed as follows:

	ALAN MUNDY	DAVID NIX	SHABIR AHMED	DAVE PYE	NEVILLE WEBB	BEN BAWUMIA
New Auto number	84689	84663	84772	84817	84652	82769
Previous Auto number	44457	44070	44086	44418	44719	43661

The new contact details are included in an updated version of **T&R Book Appendix 4** which can be viewed or printed from the T&R Books section of the intranet or by using the link below.

http://luintranet.tfl/static/documents/coo/Appendix_4.pdf

We will also be producing a new version of the CHD laminated poster with the new contact details on. These will be distributed to all sites with CHDs over the next few weeks.

Mi-APP FORMS LAUNCH & ISSUES

On **Tuesday 07 March 2017** a new and improved eForms mobile app called Mi-Apps became available to iPad users. This new application provides access to the Missed Collection, Consumable Ordering and Change Delivery eForms that were previously available via Mi-Forms.

Once an order is placed via Mi-Apps, staff will receive a confirmation email from the TfL eForms Server, containing the order summary and the email address of the team it has been sent to for processing. The latter details are provided, as any enquiries should be directed to them.

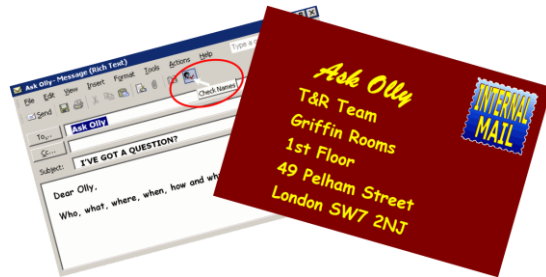


Since the introduction of the Ticketing eForms, we have received a number of queries, where staff have placed an order but haven't received the item or any response. Upon further investigation, most of these are for items which are sent to Cover Group Support staff to process via SAP. A list of these items has been provided below, which would need to be processed by the Cover Group Support staff either on SAP or by using the link in the Ticketing and Revenue Intranet page to order the Bulk coin bags.

SAP items	Inability to Pay Fares	Multi-Safe Bags	V&C Multi-Safe Bags	ROLT\ROLMP Pads
	Secure Suite Log Book	Plastic Key Seals	V&C Transportation Sacks	
T&R Pages	All Bulk Coin Bags – using the embedded link provided.			

The T&R Intranet site also hosts a **Ticket & Revenue Supplies list** specifying where items can be found and the method of ordering; <http://luintranet.tfl/static/documents/coo/Ticketing and Revenue supplies v9.pdf>





askolly@tube.tfl.gov.uk

From: [REDACTED]
Sent: 06 March 2017 01:02
To: Ask Olly
Subject: **Device Monitoring App**

Dear Olly,

Ever since the ticket monitoring app went live on the iPad I and all my colleagues are getting what can only be described as spammed on a massive scale. At Waterloo we seem to receive in excess of 30 emails per day advising us of issues with the gates and POM's. It would not be so bad if we only received one email about these, but we often receive 3 about the same problem.

I understand that this can be useful as if you are monitoring your emails regularly you can pick up on problem machines quickly, but that is not always possible and god help you if you are on leave and find hundreds of these useless emails clogging up the inbox.

I spoke to IM about this issue and they say there is nothing can be done about it. Perhaps a rewrite of the app is in order.

[REDACTED]
Customer Service Supervisor I
Waterloo

From: [REDACTED]
Sent: 16 April 2017 13:04
To: Ask Olly
Subject: **New bankcard slots**

Hi Olly,

Ever since the new bankcard readers came in on the MFM's we've had a lot of people not being able to find the slot.

It's quite remarkable how many people struggle to find it. Is there any signage or stickers that could be used to highlight the area more?

Regards

[REDACTED]
[REDACTED]
[REDACTED]

Hi [REDACTED]

Thank you for your email and for raising this issue.

The emails you are referring to relate to the escalation process that was built into the design of this app. If a fault is not acknowledged by a member of staff or remains open for a set period of time, reminders about the fault are sent to iPad users at the location. If the item remains unresolved after further periods where no action is taken, it will eventually result in the item being "escalated" and this would result in an email notification about the item being sent to all supervisors at the location.

Your concern about the volume of these notifications mirrors feedback that we have had from users elsewhere and seems to reflect two main problems. Firstly that faults that have either self-cleared or have been cleared by a member of staff resolving the problem, require a user to use the app to acknowledge and close the item, rather than itself closing once the device returns to full service without any errors. This then means that all users that are logged on to that station will receive notifications and reminders about items that have already been resolved or are out of date.

The second issue arising from this, is that many potential users have been put off using the app because of these "spurious" notifications and as a result, faults that should be acknowledged and dealt with, are also going unacknowledged, further adding to the level of reminders being transmitted.

We are currently in discussion with Cubic and the TfL Technology & Data team (formerly Customer Experience) to try and resolve these issues and get the Device Monitoring app to work in the manner we had wanted.

Regards

Olly Oyster

Hi [REDACTED]

We are currently waiting for Cubic to produce a sticker to highlight that the slot above is for notes, based on a sticker used on MFMs with the Bank Note Recycler, as we have had quite a few reports of customers trying to insert their card in the slot above the keypad. Hopefully these will be available in 2 or 3 weeks and as more devices have the new style of PED, customers will become more used to the revised layout of the POMs.

Regards

Olly Oyster

From: [REDACTED]
Sent: 07 March 2017 18:22
To: Ask Olly
Subject: Apple Pay

Hi Olly,

If a customer touches in, for example, using Apple Pay on their phone but was to then touch out for their journey using the actual card (the same one registered to their phone), would they be charged for 2 incomplete journeys? Or would their journey complete correctly?

Customers sometimes approach the gateline to exit when their phone has died, and ask whether or not touching the card itself would complete the journey correctly.

Thank you,

[REDACTED]
[REDACTED]
[REDACTED]

Hi [REDACTED]

Where a customer has touched in, they should always be able to exit at the end of their journey, even if it means that the fare for the journey they have made will result in their card having a negative PAYG balance.

If the customer is using only PAYG for their journey, then they have basically travelled without a valid ticket and strictly speaking should be charged the standard Single fare and a Fare paid ticket issued from the POM.

In the example you have given, where the customer has a valid Travelcard, they are not obliged to validate if travelling within the zones covered, so could end up at the end of their journey and not be able to exit.

In such cases they would need to pay the additional (extension) fare for the zones not covered by their season ticket. They would need to load sufficient PAYG to cover this and the negative balance on their card and after having done so, their card will need to be validated on an exit gate to ensure that they pay the correct fare for the journey they have just made.

Regards

Olly Oyster

Hi [REDACTED]

Unfortunately if the customer behaves in the way you describe, they will receive two incomplete journey. For Apple Pay and all other contactless payment methods, the customer has to use the same card or device at the beginning and end of their journey to ensure that they are correctly charged. The phone or other device has its own identity which is picked up and reported by the card reader, so it would not be able to link the card and device transactions. The result is similar to what would happen if two different cards relating to the same bankcard account were used on the same day.

In relation to your second point, one of the requirements of using a phone or other device for payment for your travel, including using an e-ticket or barcoded tickets on NR services, is that there is an obligation on the user to ensure they have sufficient battery life to be able to complete their journey.

If the customer goes away and charges their phone and subsequently touches in to make a return journey from the station, it is likely that the missing exit validation will be identified and automatically resolved within the back office processing, before the customer is charged. However, they would still need to request a refund on the incomplete journey charge on the card they used to exit the station after the failure of their phone.

Regards

From: [REDACTED]
Sent: 03 March 2017 14:16
To: Ask Olly
Subject: Travel with a negative balance

Hello Olly,

When a customer tries to exit a station outside of their Travelcard zones and are already in a negative balance (hence the gate not opening), what charges need to be applied via the POM for the extra zones? Am I right in thinking it's a reduced amount as they already have a Travelcard?

[REDACTED]
[REDACTED]
[REDACTED]

Ticketing & Revenue T&R Trivia

Part 2 – Still on the subject of the introduction of the first £1 coin...

Q2) ... when did the Bank of England
£1 note cease to be legal tender?

- | | | | |
|---|------------------|---|---------------|
| A | 12 November 1984 | B | 15 June 1986 |
| C | 23 October 1987 | D | 11 March 1988 |



Answers on Page 11

E1 LCP ROLLOUT BEGINS

The start of the E1 gate LCP upgrade didn't go quite to plan, as a station router problem at **Canary Wharf** required us to switch the first nights work to **London Bridge** instead.

Despite this change, all didn't go to plan and some issues with the sub-contractors undertaking the work meant that not all of the gates could be completed on the first night, delaying the start at the second training site until the beginning of the next week when all of the teams were then available. A number of other staffing and training issues resulted in the rollout starting much slower than planned with only one or two sites being completed per night, until all teams were up to an acceptable speed.



The knock on effect of this was that we then had to cancel work scheduled at other stations for the first week of rollout, to ensure that all 6 installation teams were all able to start working on their own, rather than as part of a larger team.



The rollout to all stations with E1 gatelines and associated WAGs, is now scheduled to be completed on **Thursday 20 April 2017**.

The completion of the E1 and E2 elements of the LCP programme means that a majority of our gates are now fitted with the new LCP3, although the planned connection of these devices to the Device Monitoring app on the iPad, which allows gate status and faults to be monitored and reported via the iPad, has been put on hold pending the resolution of some issues with the app.

There are currently some issues which have been identified by Cubic, which they would like to fix before more stations are added. Resolution of this should avoid the need for Cubic to manually remove large numbers of closed jobs which are currently not being resolved automatically.

And finally on the subject of LCP3, as reported in **TRU98** the long awaited Vanguard of the LCP3 on the older pneumatic gates commenced on **Monday 13 February**.



11 gates at **Liverpool Street (Central)** and all 15 gates at **Tower Hill** are now equipped with the LCP3 and initial results seemed quite encouraging. Unfortunately, the new LCP3 has not resolved a problem we have had on the older pneumatic gates, where after validating their card, the gate paddles fail to open to allow the customer to pass through.

Prior to introduction of the new LCP, pneumatic gates could not support the remote extraction of event logs from a gate, so Cubic were unable to identify why issues like this had occurred.



Installation of trial LCPs on 2 pneumatic gates at **Green Park** last year enabled some event logs to be captured and we had hoped that a suitable fix would have been included within the LCP3 software.



Feedback from further observations at the 2 Vanguard sites has confirmed that instances of the paddles not opening are still occurring.

We are currently following this up with Cubic with a view to getting the issue resolved before we can start the main pneumatic gate rollout programme. It now looks likely that once a fix is available and has been tested, we will have to restart the pneumatic gate LCP Vanguard to confirm that this issue has finally been resolved.

If this issue is resolved we should be in a position to approve the start of the pneumatic gate rollout. This is now likely to be quite a while after the end of the E1 programme and due to the slowly diminishing number of pneumatic gates is likely to be completed in a relatively short period.

AFM & MFM SOFTWARE UPDATES

Since publication of **TRU98** we have completed the upgrade of most AFMs to eradicate the latest in a series of POM frauds.

The latest variant involving an unusual combination of button pushes to cancel the transaction whilst still managing to add PAYG value to the card.

Station	AFM
EMBANKMENT	29
KINGS CROSS (Tubes)	29
EUSTON	29
LIVERPOOL STREET (Main)	29
OXFORD CIRCUS	29

As we outlined in **TRU98**, the fix for this was not included within the software build that supports the new PED and following completion of testing, a further version of software was deployed as a vanguard to the following 5 AFMs listed above from **Sunday 19 March**.

After a week of monitoring to ensure that the upgrade had not had any adverse impact on device performance, the rollout of this new software to around 50 other AFMs that have been equipped with the new design of PED, began on **Sunday 26 March**, with all devices completed within three nights. From the same date, all AFMs which are upgraded with the new PED will immediately be loaded with this new software.

Linked to the PED upgrades outlined on **Page 10**, it was recently identified that the current version of MFM software which was rolled out to support the introduction of the PED, does not include either the current fraud fix recently applied to AFMs nor some of the changes that were deployed to all MFMs to counteract on-going fraud issues last year.

This oversight first came to light when it was highlighted by staff at Kings Cross, that Visitor Oyster cards on which the PAYG balance had been refunded, were being left as live cards, rather than being cancelled to prevent further use. An emergency software release has since been developed to update the MFMs with these anti-fraud measures and prevent any frauds similar to the one we have just fixed on the AFM. A Vanguard of this new version of MFM software on the 4 MFMs listed below commenced on the night of **Tuesday 21 March**.



Again after a short monitoring period we commenced a rollout of the new MFM software to the remaining MFMs, which were progressively upgraded during the two week period starting with 20 devices on the night of **Sunday 02 April** and finishing with the final 31 devices being completed on the night of **Thursday 13 April**.

Station	MFM
KINGS CROSS (Tubes)	31
EUSTON	32
LIVERPOOL STREET (Main)	32
OXFORD CIRCUS	29

Within this latest software release, Cubic have also included some enhanced logging to assist them in tracing the cause of an issue that has been reported recently from a number of sites with Bank Note Recycler (BNR) units, where despite a service being correctly registered by a device, the vault contents appear not to have correctly reset, when the following service is completed.

We are hoping that the additional logging being provided on these devices will help to quickly identify why this is occurring and allow a further fix to be quickly deployed.

The latest release also resolved an issue previously reported at Euston and a couple of other stations, where an updated table being downloaded to a device caused the device alarm to activate.

LAL MXIDE PU Part 3 – We've mixed up the letters in these station names. Can you work them out?

Ticketing & Revenue
T&R
Trivia

(a) ROVER ON GAS

(b) HOBO RUG

(c) NURSERY BUNG

(d) PROD KEY RANCHER

(e) OR A TOWEL

Answers on page 11.

PED UPGRADE.... UPDATE

The programme to replace the Chip & PIN units on all of our MFMS is now close to completion and would have already been completed, had we not taken the decision to scale down the rollout from two teams to one and defer upgrading of the final batch of devices at **Heathrow T123** and **Heathrow T4** until after the Easter holiday weekend.



This change to the programme will ensure that devices will continue to support purchases with magnetic swipe bankcards during the busy Easter holiday period at the airport. The upgrade of these devices will now be co-ordinated with the upgrading of all of the AFMs at these two stations during the same week.

The final MFMs at Heathrow and the MFM at neighbouring Hatton Cross station are scheduled to be upgraded on the night of **Wednesday 19 April**, although the 2 MFMs located at our training facility at **Ashfield House** will still need to be fitted with the new PED, as we need implement a new method of processing bankcard transactions which are generated during training. Previously Ashfield House had its own Bank Card Processor (BCP) which mimicked the routing of live bankcard transactions from stations, through the Cubic BCP, a process that has now been outsourced to The Logic Group (TLG).

Whilst we are close to completing the MFM rollout, we are still officially at the Vanguard stage for the AFM. The need to fix a number of outstanding issues before a formal rollout could officially start, has led us to extend the Vanguard beyond the original plan of 24 devices to the total at the Easter break of 135 of the 585 AFMs.

We currently have two teams each upgrading 2 devices per night (a total of 20 machines per week) with the possibility of increasing this to three teams after Easter, using staff released from the MFM upgrades. As stated above, our focus in the period after Easter will be on completing the upgrade of all the remaining devices at stations that currently still accept magnetic swipe bankcards. After completion of the Heathrow devices, the PED upgrade will then be rolled out to **London Bridge** and **Victoria**, which will be the last two stations to have the facility to accept magnetic swipe bankcards. If all goes to plan, the final devices at these stations should be upgraded in early May.



QBM PED VANGUARD

As reported in our last edition, we are now close to the start of the Vanguard of the new PED on the final device type; the QBM.

Testing had been successfully completed and the first device was due to be installed at **Embankment** on the night of **Thursday 06 April** followed by the second device at **Blackfriars** the following week. However, this upgrade had to be postponed at the last minute due to concerns about the new method for staff and engineers to sign-on to the QBM. Although tests undertaken within the Cubic System Test facility had been satisfactory, during the final preparations of the devices to be installed at the Cubic workshop, some issues were identified when the device was connected to the "live" system.



The issue is currently being investigated, but has been somewhat hampered by some major refurbishment work being undertaken at the Cubic Headquarters building before and after Easter. We are hopeful of being able to deploy an initial QBM upgraded with the new PED towards the end of April.

As previously reported, this will be achieved through replacement of the whole machine, as for the QBM, all of the upgrade work will be completed within the Cubic workshops. On the night of the upgrade the existing QBM will be removed and a new device installed.

We intend to gradually expand the Vanguard up to 10 devices, whilst the Cubic workshop build up a buffer stock of upgraded devices to support the start of a rollout. We will need to have enough devices ready to cover the 10 devices we plan to upgrade per week, when we commence the rollout and are replacing 2 machines per night.

PINK ROLL STOCK

TfL and Cubic have recently announced plans to introduce a revised design of pink roll stock for POMs across the LU network. However, since the closure of LU ticket offices, the T&R team have received a large number of enquiries from stations who have built up large quantities of the existing pink ticket roll stock. As these rolls are delivered to stations in boxes of 5, they take up quite a lot of room in secure suite stations that often have very little to spare.

It is a little unclear why such large quantities have built up at certain locations, but is probably related to an over estimate of the number of receipts requested, as although Cubic are able to see exactly how many tickets a device has issued, the printing of a receipt isn't recorded as a transaction. Up until recently, Cubic provided supplies of ticket rolls to stations based on the numbers of tickets issued by devices in the preceding period.



Whatever the reason for these large stock surpluses, in these times where we need to ensure that money is spent wisely, we have advised TfL and Cubic that we would not want to introduce any new design of roll stock until the bulk of the current stock has been used up. We want to avoid an extended period of dual running with two different designs of stock, or having to potentially bin a large amount of useable ticket stock.

To enable the current stock to be used, we have taken a number of measures;

1. Cubic have suspended further automatic deliveries of ticket rolls to LU stations
2. Stations that are short of ticket roll stock can order this via the Mi-app Consumables Order form, but these requests will be automatically routed to the T&R Team rather than Cubic
3. Following a recent request in the weekly Hot Issues Bulletin, the T&R Team are collating information about the current stock levels from all LU stations
4. Once all stations have responded, our intention is to then co-ordinate the redistribution of excess ticket rolls to stations that have reported low levels of stock.

So far our enquiries have uncovered stations in the outer Zones that although only have a couple of POMs, have over 200 rolls on hand, which is probably enough to last them for several years.

Hopefully the planned redistribution of stock will allow us to move some of the excess to sites where it will be used more quickly.

We will provide a further update on the plans for introducing the new design of roll stock, once the stocks of the current design have been reduced.



Please Note - Other consumable items are not affected and are available as normal.

ANSWERS TO T&R TRIVIA

Pt.1

WHERE'S WOLLY?

Olly's on the 'exit' gateline at **COVENT GARDEN.**

Pt.2

Q1

D

21 April 1983

Did you know - £1 notes stopped being produced in 1984, but were originally introduced in 1797 in response to a shortage of gold coins during the French Revolutionary wars

Q2

D

11 March 1988

Pt.3

LAL MXIDE PU



How did you do?

...AND FINALLY!

REPEAT FAILURES AND FAULT ESCALATION

Since the start of the year, one of the most common topics in our mailbox has been repeated failures on certain devices. As stated in the TRU98, although device availability continues to be high, the overall figures often mask the poor performance of certain devices.

Sorry...
**TEMPORARILY
OUT OF
SERVICE**

The current Revenue Collection Contract (RCC) requires Cubic to deliver overall levels of performance across the network and for individual device types and when faults do occur to fix these within set times. Typically this can lead to a tendency for their engineers to try to clear faults as quickly as possible, often at the expense of a more diagnostic analysis of the root cause of the initial fault. The follow on from this, is often that the same fault then reoccurs and a further job then has to be raised. If the same pattern is repeated, we can then build up a fairly lengthy history of jobs and component changes, without ever actually identifying or curing the problem.

Cubic do undertake monitoring and will schedule visits by their R&D team (a team of specialist technicians) where there is pattern of 'repeat failures' within a reporting period. However, devices can be missed particularly where the repeat failures span two separate reporting periods. In the event of either a pattern of repeated failures on the same device or where there are excessive delays in Cubic resolving a fault, the issue can be escalated via email to the CE Service Desk (soon to become Tech & Data Service Desk). When doing so it is helpful to quote dates and job numbers of previous faults.

They will then raise the issue with Cubic's management and escalate it as necessary. This will generally result in a visit from one of the specialised engineers, who will make a much more comprehensive examination of the device including checking voltages and connections, to get to the true cause of the problem. Such visits over the last couple of years have been highly successful in identifying the true reason for a device's problem, without the need for wholesale exchanges of components. One example of repeated failures of a MFM's note handling unit were traced to an issue with a sensor on one of the station's note vaults and on other devices multiple failures were eventually traced back to faulty pins in a connector and to a damaged cable. In each case the device had previously had modules replaced on a number of occasions before they in turn failed.

In most of these cases, following the visit by a specialist technician, there have not been further problems with the same device. The one exception to this has been some of the recent note handling problems that have increased as the volume of polymer banknotes have increased. This looks to be a more general issue rather than one that is device specific. We are continuing to push Cubic to identify the cause and solutions to resolve these issues and we hope to be able to provide a more detailed explanation in next month's TRU.

In the meantime please remember to escalate issues via the CE Service Desk, rather than sending emails to large numbers of people including LU senior managers, who are not best placed to resolve the issue.

LOOKING AHEAD TO TRU 100

Mid May should now see the publication of our centenary edition. In **TRU 100** we will take a nostalgic look back over the history of the publication and some of the milestone events we have covered during that time.

Within the same edition we also celebrate the 30th anniversary of the Underground Ticketing System (UTS) which introduced our current design of magnetic tickets, gave us the MFM, pneumatic gates, the SCU and the first generation of Ticket Office Machine (TOM).

On top of these nostalgic pieces, we also need to keep you up to date the present and **TRU 100** will also include:

- Preview of the forthcoming May Fares Revision
- Update on progress on current upgrade projects
- Plans for a revamp of the TOM/SAF and SCU
- The start of the countdown to the introduction of the polymer version of the £10

Plus + other T&R news stories and a selection of letters to Olly and some of our other regular features.

