

For the attention of all Station and Revenue Control staff

Ticketing & Revenue

UNDERGROUND

January / February
2019

Update #115

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GATE READER CHANGE TO REDUCE REJECT CODE

Following on from a successful vanguard across 15 stations at the end of 2018 (as we outlined in [TRU113](#)), we saw a significant drop in the volume of Oyster cards rejected on exit with reject code "36" (Insufficient PAYG).

As a result, a decision was taken to deploy the revised gate reader software and Exit threshold settings to all other London Underground stations.



The change was deployed in two phases, with new tables including the new lower 'Exit Threshold' being deployed from Sunday 26 January and a reader upgrade taking place on Sunday 03 February, allowing different entry and exit thresholds to be applied on our gates.

Initial figures since this change was applied at all stations, indicates a reduction of around 70% in the number of code "36" exit rejections.

Our [Oyster Explained](#) feature on [Pages 12/13](#), provide some further detail on how this particular change works.

KEY STORIES INSIDE

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[FARES REVISION REVIEWED](#)

We take our traditional in depth look at how the January Fares Revision went. What went well and perhaps not so.

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[PAYG EXTENSIONS](#)

We provide an update on plans to extend PAYG acceptance to further parts of the rail network.

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[REVIEW OF 2018](#)

In another annual feature, we look back at what we achieved and a few things we didn't get finished.

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[IMAGE IS STILL IMPORTANT](#)

In a follow up to our feature on POMs, we take a look at gates and validators and how they should appear to our customers.

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[MFM BNA REPLACEMENT TRIALS](#)

We update you on progress; the performance of the two units already installed and plans to deploy a third model as part of a search for a suitable replacement for our note handlers.

Written and compiled by

JANUARY FARES REVISION

JANUARY FARES REVISION REVIEWED

As is customary in our first TRU after a fares revision, we take a look back at what happened.



WHAT WENT WELL!

The implementation of the last Fares Revision on Wednesday 02 January 2019 went very well and was probably one of the smoothest we have had.



Although fare changes were limited due to the on-going TfL fares freeze, the fact that fares were being changed still required new fares tables to be loaded to all devices.

On the morning of the revision, all devices were confirmed as loading their new tables successfully without interventions being required. Recent revisions have seen a gradual reduction in the number of devices requiring a technician visit or the reloading of tables, but this time we had a 100% success rate for the first time.

Following the fares change, we did have one AFM reported to us as still showing 2018 prices. AFM 29 at Uxbridge was observed to show the 2018 price when a Zone 1-6 Day Travelcard (Off Peak) was selected, but the payment screen correctly showed the 2019 price as the amount to pay. This issue was quickly resolved by Cubic restarting this device.

Well, we are scratching around for issues where things didn't go as planned.



WHAT DIDN'T GO SO WELL!

We did have one very minor issue identified on POMs at Moorgate, where at the weekend it wasn't possible for customers to buy a through NR ticket to Cuffley.

This was subsequently identified as being due to the best value ticket being a Super Off Peak fare which had been rendered unavailable by preparatory work for the extension of PAYG to Cuffley (see [Page 3](#)). Cubic downloaded an updated file to stations affected to resolve this issue on Sunday 27 January, as part of a scheduled base data update.

As is normal we had a couple of stations querying the delivery of their new Fares Poster, but this time round it was established that we had no proof of delivery for either Harrow on the Hill or Northwood and as a result Cubic arranged for both of these to be reprinted and delivered free of charge.

TRAVELCARDS	ADULT		
	7 Day	Monthly	Annual
1+2	£35.10	£134.80	£1,404.00
1-3	£41.20	£158.30	£1,648.00
1-4	£50.50	£194.00	£2,020.00
1-5	£60.00	£230.40	£2,400.00
1-6	£64.20	£246.60	£2,568.00
1-7	£69.80	£268.10	£2,792.00
1-8	£82.50	£316.80	£3,300.00
1-9	£91.50	£351.40	£3,660.00
1-9A	£92.00	£353.30	£3,680.00

We did have at least one site which queried the prices shown on their fares poster, only to find that they were still displaying the 2018 version.

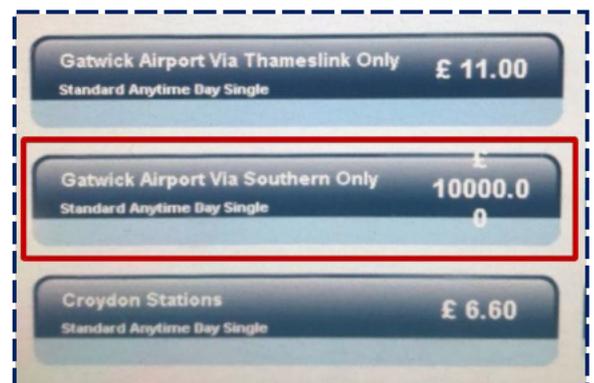
We received a number of queries relating to the Fares Revision Circular, where a formatting error in the Travelcard Season ticket table led to the Zone 1-3 monthly price being repeated for Zones 1-4 and the entries below all being one line out as a result. A corrected table was published within the [Hot Issues Bulletin 01-19](#) and is reproduced on the left in case you missed it. The online version of the Fares Revision Circular shows the correct prices ([Click here](#)).

But it wasn't just us that got a fare wrong.

The news headlines for 02 January generally focus on the scale of fares increases and in particular the price increases for a number of longer distance season tickets from NR commuter stations outside the London area.

However, the fare that hit the headlines on the internet news feeds this year was a Single ticket to Gatwick Airport via Southern services which was displayed on NR TVMs at a fare of £10,000.

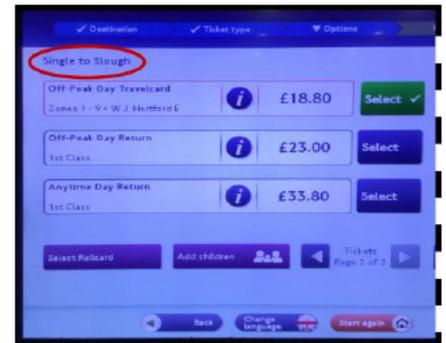
Most customers probably opted for the cheaper via Thameslink fare priced at a more reasonable price of only £11!



FARES REVISION UPDATE ...continued

Just before we went to print with this edition, a further issue came to light.

It was noticed by staff at Paddington, that if a customer attempted to buy a Single to Slough on their POMs, the best value option offered to them was a Zone 1-9+ Watford Junction / Hertford East Day Travelcard, which wasn't actually valid for that journey. This stemmed from the inclusion of Slough, Maidenhead and Reading within the fares system as part of the GWR preparations for the introduction of ITSO cards on their services.



The inclusion of these stations wasn't supposed to offer Travelcards to these destinations, but unfortunately the destination Slough did offer a Day Travelcard on POMs at all of our stations.

Fortunately this was discovered just in time for it to be included as an emergency change within the base data update on Sunday 27 January.

PAYG EXPANSION

HEX PAYG LAUNCH FURTHER DELAYED

Further to our previous coverage of the planned extension of PAYG onto *Heathrow Express (HEX)* services between London Paddington and Heathrow Airport, we have been advised of a further delay to the start date.



In [TRU114](#) we had indicated that PAYG might be accepted from mid-January 2019, but we subsequently learnt that the launch had been pushed back until mid-February and is currently scheduled for Tuesday 19 February.

As previously stated, we will communicate the actual launch date via the weekly *Hot Issues Bulletin*, once it is confirmed.



OTHER PLANNED EXTENSIONS

As we have previously outlined in the TRU, planned extensions of PAYG acceptance for Oyster and contactless payment users are due to take place in February. Two separate expansions are planned on opposite sides of the capital; both are currently to be implemented from Monday 25 February.

<p>EPSOM</p>	<p>Customers will be able to use PAYG to travel beyond Ewell East or Ewell West, to and from Epsom.</p> <p>As outlined on Page 20, Freedom Passes will not be valid on NR services to Epsom.</p>	
<p>HERTFORD NORTH</p>	<p>Customers will be able to use PAYG to travel beyond Crews Hill, to Cuffley (Zone 9), Bayford (Zone B) and Hertford North (Zone B). This will mean that PAYG can then be used on both rail routes into Hertford, as PAYG is already valid on the Greater Anglia service to Hertford East.</p>	

The PAYG map and T&R Book Appendix 2 will be updated to reflect all of these changes and will be available via the links below from Monday 25 February.

http://luintranet.tfl/static/documents/coo/Oyster_PAYG_Map.pdf http://luintranet.tfl/static/documents/coo/Appendix_2.pdf

Some further PAYG extensions will follow later this year. Phase II scheduled for June 2019 will include a further northward extension on the Great Northern route to Potters Bar and Brookmans Park and an extension of PAYG on contactless only to Radlett on the main Thameslink route.

This will be the first of a number of stations outside of London; where contactless will be accepted but not Oyster. Further information and confirmation of launch dates for these will be included in future editions of TRU, once they are confirmed.

IN THE NEWS...

2019 FREEDOM PASS REISSUE

Approximately 50,000 Freedom Passes (42,000 Older Person and 8,000 Disabled) are due to expire on 31 March 2019.

From Tuesday 05 February 2019, all London Councils (except Camden) will be sending letters to holders of Older Person Freedom Passes which are due to expire, advising them on how to renew their pass online. They will not be able to renew by phone or at a Post Office, as some may have done previously.

Provided the information held by their council is correct and up to date, to renew online Freedom Pass holders will need to:

- Go to www.freedompass.org/renew
- Enter the unique renewal number printed on their renewal letter
- Enter their date of birth
- Enter the last 4 digits of their existing Freedom Pass number

Pass holders will be able to change their details online, but if they have changed their address, they may need to scan and upload documents that show their name and new address. There is no need for a new photo to be uploaded.



Sutton

Pass holders that are unable to complete the online renewal process (excluding Sutton residents) will be able to renew by completing a form enclosed with their renewal letter and posting this with any accompanying documents to the address on the form. London Borough of Sutton Freedom Pass holders unable to renew online should be advised to visit a Sutton library for assistance.

London Borough of Camden Older Person Freedom Pass holders will have their entitlement confirmed by internal borough residency checks and will have their new Freedom Pass sent to them automatically.



Camden

Camden residents, whose residence cannot be confirmed in this way, will be asked to provide proof of their current address in the borough.

Disabled Freedom Pass holders will not be invited to renew online. Each borough will assess their holders' continued eligibility before 31 January 2019 and will "hotlist" Freedom Passes of Pass holders deemed to no longer be eligible. New Disabled Freedom Passes will automatically be sent to holders that are still eligible from 7 February 2019.

The new issue of Freedom Passes will start to appear in early February. They will have an expiry date of 31 March 2024 and will valid for travel immediately. Holders will be advised to destroy their old Freedom Pass as soon as their new one is received.

Pass holders that have questions about the renewal process should be advised to contact the Freedom Pass helpline on 0300 330 1433 or by email info@freedompass.org.



Part I – On a fares revision related note...

Q1) In January 1988 what was the cost of a 7 Day Travelcard for unlimited travel within Zone 1?

A £ 4.00

B £ 5.00

C £ 7.00

D £ 8.00

Based on your answer to Question 1, how many Zone 1 journeys could you make today for the same price? Either

Q2) using;

a) A single ticket

b) PAYG

[Answers on Page 19](#)

Ticketing & Revenue

T&R
Trivia

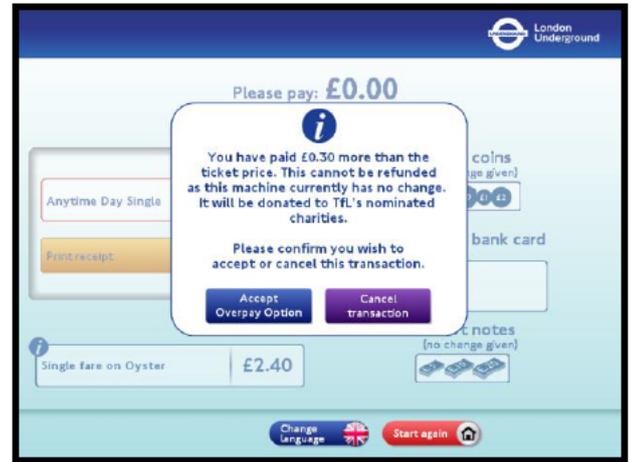


OYSTER CHARITY UPDATE

The year has kicked off with a couple of positive results in terms of our T&R charity initiatives.

Firstly as part of a recent base data update on 10 February 2019, the message displayed on the POM screens on the AFM and MFM when a customer is offered the opportunity to overpay by up to 30 pence on a transaction was updated.

The screen now displays a message which includes reference to the fact that the additional money will be donated to TfL's nominated charities, rather than being kept by TfL as many customers may have previously thought.



This should hopefully avoid unnecessary bad feelings amongst customers when our devices aren't able to give them the change they are due.

In a separate piece of work involving LU, Railway Children and Heathrow Airport, the team at Heathrow have recently completed the development of a new design of Oyster Charity Box, which has been developed for use within the terminal buildings of the airport (both airside and landside).

This follows on-going discussions with Heathrow Airport and feedback from their security staff, regarding a large volume of Oyster cards which were being discarded within the airport buildings, before and after air passengers had gone through the airport's security checks.

Hopefully the new design of box (illustrated to the left) will soon be up and running within the various terminals and will contribute some additional funds to Railway Children.

GOING NORTH! - CUBIC HELPDESK ON THE MOVE

The Cubic Helpdesk previously located at their headquarters building in Salfords in Surrey will shortly be on the move to a new location in Stockton on Tees. The Stockton facility already manages the London Cycle Hire Network.

Since the beginning of December, some callers to the Cubic Helpdesk (Auto1610) are likely to be greeted by staff with a pronounced north eastern accent. This being as a result of an overflow of around 250-300 LU calls being rerouted to the new location at busy times.

The process of migrating services to Stockton will continue over the next few weeks, during which a small number of helpdesk staff will be retained in Salfords. The current plan is for the move to Stockton to be completed with effect from Sunday 10 March, after which all calls to 1610 will routinely be directed to staff at Stockton, rather than just when there is an overflow in demand.

In preparation for the migration of services, batches of the new helpdesk staff have visited London and have been given first-hand experience of both our stations and equipment, to prepare them for taking calls from staff once the new centre goes fully live next month.

It is hoped that the relocation will provide the helpdesk with a more stable workforce, as the helpdesk at Salfords has suffered quite a high turnover of staff in recent years, given its location quite close to London, Gatwick and other centres of employment.

The changes will also include the migration of some activities that were previously undertaken by the TfL T&D Service Operations Desk to the new call centre in Stockton.

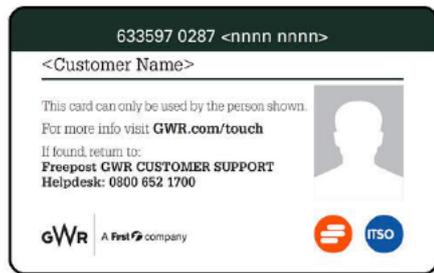


IN THE NEWS...

GREAT WESTERN LAUNCH TOUCH CARD



Hot on the heels of the launch of Chiltern Railway's ITSO format smartcard featured in [TRU114](#), a further train operator Great Western Railway (GWR) has announced the launch of their own branded ITSO card; the "GWR touch".



CUSTOMER SMARTCARD

STAFF PASS – NOT VALID ON LU SERVICES

GATELINE PASS – NOT VALID FOR TRAVEL

Following testing, an initial "soft launch" was scheduled to take place from 27 January 2019, with acceptance initially only on GWR services between London Paddington and Reading, but not at the intermediate stations in between.

Acceptance will then be progressively extended to other GWR services from Paddington and once fully launched, their customers will also be able to load Zone 1-6 Travelcards onto their GWR touch cards.

Like other ITSO format cards, they should work our gates at stations within the zones covered by the ticket loaded onto the card and validity can be checked by presenting the card to the RTD on an AFM or MFM, in a similar way to how we check an Oyster card.

Images will be included in an updated version of T&R Book 2, when this is re-published.

As the number of different types of ITSO format smartcard in circulation increases, it has prompted a number of queries concerning whether it is possible for customers to purchase products from any Train Operating Company (TOC), or whether they could only be bought from the company issuing the actual ITSO card?



The long term objective is that as a 'national standard' for smartcard ticketing, the ITSO format should allow a customer with an ITSO card to buy a ticket from any TOC and then add this to their ITSO card.

However, at present the post-sale customer service elements to support this are not fully in place, if a problem does arise. As a result, it would mean that if a customer with a Govia 'the Key' card was to subsequently purchase a season ticket from another operator e.g. C2C, the process to be followed if the card was lost or became defective, is a bit messy.

The customer would be required to obtain a replacement ITSO card from Govia, but they would not be able to replace the season ticket product. Having obtained a replacement card, the customer would then need to go back to C2C to get the product reinstated on their new card.

SO THAT WAS 2018!

A review of the major T&R events of the year

Back in [TRUI06](#), the final edition of 2017, we took our customary look forward into our crystal ball to see what was in store for us in terms of ticketing and revenue changes in the year ahead.

Now that 2018 is behind us, it is time to look back to see which of those hopes came to fruition and which remain to be fulfilled! Below we list nine of the issues we identified in December 2017 and what actually happened.



1	Gate LCP3 Completion	
<i>This got a big thumbs down in our review of 2017, but in March we finally reached the finishing line of this longest running of projects when the last pneumatic gates were successfully updated. We still needed a software upgrade in April to tone down the volume of the alarms sounded by the P Gates!</i>		
2	TOM/SAF Upgrade	
<i>Another project that got the thumbs down in our 2017 review, but following a Vanguard which started in December 2017, we progressed to a full rollout which was successfully completed in May.</i>		
3	SCU Upgrade	
<i>This project also got the thumbs down for 2017 and has repeated that for 2018. Hopes of starting a Vanguard in April 2018 were not fulfilled and we are still awaiting the first units to be installed on a station to commence this delayed Vanguard.</i>		
4	Bus Hopper	
<i>An early success for 2018, with the launch of the multi-journey bus hopper facility allowing PAYG users to hop from one bus to another within an hour, without further charge and offering a big saving to those needing to catch more than one bus to complete their journey.</i>		
5	Visitor Ticketing Trial	
<i>Plans for a March launch were shelved and the trial eventually kicked off on 24 June. We subsequently found that a couple of the trial stations with multiple NLCs hadn't been completely included and sales have generally been quite disappointing. The late start to this trial has resulted in it being extended until the May Fares Revision.</i>		
6	TSID Reissue	
<i>Making any change on 01 April is always brave, but on the whole the transition of all LU staff to the new series of TSID cards generally went well. The big spanner in the works and the cause of the thumbs down was the fact that around 800 cards were configured incorrectly and would not work on the back of our POMs. Fortunately not all had been issued, but it still resulted in around 400 staff having to be issued with a replacement card.</i>		
7	LU TVM Vanguard	
<i>The start of the planned TVM Vanguard at Stratford was delayed until May, but after some initial teething problems and some device software upgrades the first 2 LU TVMs have settled down to a reasonable level of performance, with a further two units being installed at Bond Street later in the year.</i>		
8	TfL Rail to Heathrow	
<i>Although hopes of the opening of the new Elizabeth line drifted away from us part way through the year, we did at least see TfL Rail services taking over the former Heathrow Connect service between Paddington and Heathrow Airport</i>		
9	Weekly Capping on Oyster	
<i>The planned launch after the September Fares Revision was delayed and although we achieved a step forward with the launch of Oyster weekly capping for bus and tram users on 17 December, we still await the expansion to cover rail modes.</i>		

IMAGE IS IMPORTANT (PART II) – GATES

As detailed in TRUI 12 (Sep 2018) the image we portray to our customers, gives them an impression of how we are as an organisation and the service we offer. This image can often be let down by shabby or unprofessional signs and notices on our equipment that we display or fail to keep up to date.

In that issue we focussed on POMs and this time we turn our attention to the various gatelines we have around the network. Below we have produced a number of examples of what Gates shouldn't look like.



1	MISSING CARD READER STICKERS
2	DAMAGED STICKERS
3	MISSING DEVICE NUMBERS
4	NON-CORPORATE STICKERS

All of our corporate designed stickers have a place and purpose and portray a consistent message to our customers. Missing or damaged stickers not only look bad, but are also likely to cause confusion and consternation.

So what do staff need to do?

CHECK ALL GATES	REMOVE OUT OF DATE STICKERS OR NOTICES	REMOVE UNOFFICIAL STICKERS OR NOTICES	REMOVE DAMAGED OR DEFACED STICKERS	IDENTIFY MISSING STICKERS	ORDER REPLACEMENTS
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In comparison, we thought it would be useful to include below some examples of what Gates should look like, when the correct stickers and signage are in place.

PNEUMATIC GATES

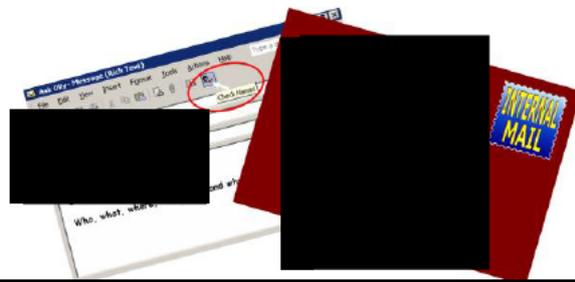
No	Sticker	Part No	Gate(s)
1		LUSS/327 (140 x 60mm)	P, EI, E2, WAG
2		YV/011 (95mm diameter)	P, EI, E2, WAG
3		TfL/PF004 (162 x 72mm)	P
4		TfL/PF005 (120 x 67mm)	EI
5		TfL/PF006 (115 x 37mm)	E2, WAG
6		LUSS/105A (82 x 25mm)	EI, E2, WAG
7		LUSS/107A (225 x 135mm)	WAG
8		LUSS/107B (225 x 135mm)	WA
9			
10			

E2 GATES

EI GATES

No	Sticker	Part No	Gates
1		LUSS/104 (70 x 155mm)	P
2		LUSS/101 (19 x 17mm)	P, EI, E2, WAG

E2 WAGS



██████████ inbox has been quite busy of late, but here are a selection of some of his recent emails....

From: ██████████
Sent: 14 January 2019 21:26
To: Ask ██████████
Subject: Ticket enquiry

Hi ██████████
A customer has looked for a ticket to Slough and bought a Zone 1-9 plus WJ. I was wondering as to why this option would appear for Slough as it is not in the special fare zones?

Can you confirm as to why this option for the Day Travelcard appears on the POM?

Kind regards
██████████
██████████
██████████

Hi ██████████,
This is one of those situations where something that would seem quite simple is actually much more complicated when you look into it in more detail.

In the example you have given, the non-Zone 1 route is both the shortest and most logical to take. However, to set the chargeable route for this and a number of very similar journeys in the same area, would hugely increase the number of individual fares within the fares system and each of these would then need to be changed whenever there was a fares change.

If we were to set the chargeable route as a non-zone 1 fare, the fact that there are a number of places where open interchanges can be made, would make it difficult to enforce the via zone 1 fare for certain journeys.

There are also some other complications around OSIs where the customer would potentially be charged a different fare in one direction than when travelling in the other direction, which is never desirable. This stems from the fact that software retains the higher charge if the first leg of the journey attracts a higher fare than the fare from the original station to the destination.

In the case of the journeys you mention, the customer should be advised to use the validators at Wimbledon to ensure they are charged the correct fare for the journey they are making.

Regards
██████████

Oyster

Hi ██████████
Thank you for your email and for highlighting this issue.

We have now established that as part of the January Fares Revision, some additional Great Western Stations (Slough, Maidenhead and Reading) were added to the fares system in readiness for testing of their new ITSO card and the eventual start of the Elizabeth line services to Reading.

Unfortunately in the case of Slough, this has led to POMs incorrectly offering a Day Travelcard which isn't currently valid for travel to Slough, as the best value option for this destination.

Cubic have confirmed that this issue will be resolved as part of a scheduled base data update on Sunday 27 January, after which all POMs should offer correct fares to Slough.

Regards

██████████ *Oyster*

From: ██████████
Sent: 14 November 2018 18:24
To: Ask ██████████
Subject: Chargeable routes

Dear ██████████,
Thanks for the information about chargeable routes in TRU113. Could you please explain why when the more direct route is cheaper, customers still need to touch the pink reader?

The most glaring example of this issue is Streatham to Putney Bridge. The route via Wimbledon and Zones 2&3, covers only seven stops and requires only one change. Contrast that with the shortest route via Zones 1-3 which requires two changes (at Victoria and Herne Hill) and involves twelve stops (including the very long gap between Brixton and Victoria).

Surely the shortest route should be the one charged automatically. If someone did go via Victoria, Blackfriars or even London Bridge the zone one fare could be applied by the need to touch both NR and LU gates at the interchange. Is there an explanation why this is not already the case?

Many thanks
██████████
██████████

From: [REDACTED]
Sent: 25 January 2019 14:13
To: Ask [REDACTED]
[REDACTED] Registration forms

Hi [REDACTED]

I understand that Oyster registration forms are being discontinued.

Could you please explain what the revised procedure will be if a customer with an unregistered Oyster card brings a Railcard or other applicable discount card, to be added to their Oyster card? At present, with the form, we can use the TOM to register the card and then submit the registration form in a correspondence bag via the banking process. If the forms are being discontinued, what are we supposed to do?

Regards,

[REDACTED]
[REDACTED]
[REDACTED]

Hi [REDACTED]

Thank you for your email and query.

The current Oyster Registration forms are being withdrawn from the May Fares Revision as they cannot be made to be fully compliant with new Data Protection legislation.

The revised processes to be introduced have not been fully agreed yet, but the general steer will be towards getting customers to set up an online account and link their Oyster card to this before they come to the station to have their discount added.

On production of a confirmation that the card has already been registered online, the member of staff would set the registration flag on the card and then add the appropriate discount entitlement.

Further information on this planned change will be published in the T&R Update over the next couple of months, once the new arrangements have been finalised.

Regards

[REDACTED] *Oyster*

Hi [REDACTED]

Thank you for your email and query.

"the Key" is one of a number of brands of ITSO format smartcards issued by various Train Operating Companies (TOCs).

Most of these can be loaded with Travelcard products valid on LU, in a similar manner to Oyster. They should work our gates at any station within the zones covered by the Travelcard.

The products on the card and the most recent journey made can be checked on our POMs by presenting the card to the yellow card reader.

If no valid product is shown on the card, the customer must be advised to use an alternative form of payment for their journey.

Details of new brands of ITSO cards are included within the T&R Update and the weekly **Hot Issues Bulletin**.

We have included details of the latest version to be issued by Great Western, on **Page 6** of this edition of TRU, together with some examples of other cards currently in circulation.

Regards

[REDACTED] *Oyster*

From: [REDACTED]
Sent: 11 January 2019 08:10
To: Ask [REDACTED]
Subject: NR smartcards

Hi [REDACTED]

I'm a CSM at Acton Town and one of my CSAs encountered a new "the Key" card that did not work our gates.

What can you tell me about the South Western "the key" as they call it?

Can we check it? And if so how

Regards

[REDACTED]
[REDACTED]
[REDACTED]

From: [REDACTED]
Sent: 01 February 2019 07:31
To: Ask [REDACTED]
Subject: Veterans Oyster

Hi [REDACTED]

This morning at Hatton Cross, we had a customer who had lost his wallet and his Veterans Oyster card.

On checking on-line there was a difference in validity explained.

T&R Book 8 said "TfL Rail, buses and trams", the other source included Tubes.

Which is correct?

Regards

[REDACTED]
[REDACTED]
[REDACTED]

Hi [REDACTED]

Thanks for your email and for highlighting this.

There does appear to be an error in the text within the last edition of T&R Book 8, as the Veteran's Oyster card is of course valid on LU services as well.

The information concerned is due to be incorporated into an update version of **T&R Book 2** which is due for publication shortly and will replace the old **T&R Book 8**.

Thanks again for spotting the error.

Regards

[REDACTED] *Oyster*

Hi [REDACTED]

Thank you for your email and observations on POM refunds.

You are correct that since the refund facility was added to the MFM there are now less controls on who can obtain a refund. The current refund software does have a level of monitoring built into it which can identify suspicious patterns of purchase and use of cards and this has been successfully used to block refunds on cards which had potentially been bought using compromised bankcards.

We also successfully used the data from POM refund transactions to track and apprehend an individual who had used large volumes of invalid coins to obtain Oyster cards from POMs and then obtain a refund in cash at a later date.

We would encourage you to report any suspicious activity you observe. The time and device number should then enable us to track the cards used and their history.

Regards

[REDACTED] *Oyster*

From: [REDACTED]
Sent: 15 December 2018 20:22
To: Ask [REDACTED]
Subject: Limiting fraudulent Oyster card refunds

Hi [REDACTED],

You would have experienced or witness multiple Oyster card refunds, from individuals, which are suspicious. This often happen mostly in the late peak, when things are quiet, mid afternoons after school closure, or at weekends, after pub closure. In the period past, we used to ask for evidence of ownership and identification before a ticket refund is made but with the improvement in technology and with a view to reducing overall cost, customers are now able to ask for a refund, under a minute through MFM 30.

This facility is now being abused by many 'customers', who now see you as a 'bank of free money'.

[REDACTED], would you consider restricting all such refunds to online, so that at least you will be able to trace the claimants, local and international, through their banks, in the absence of identification document, and reduce your outgoings of 'free cash' to fraudulent claimants.

With kind regards,

[REDACTED]
[REDACTED]
[REDACTED]

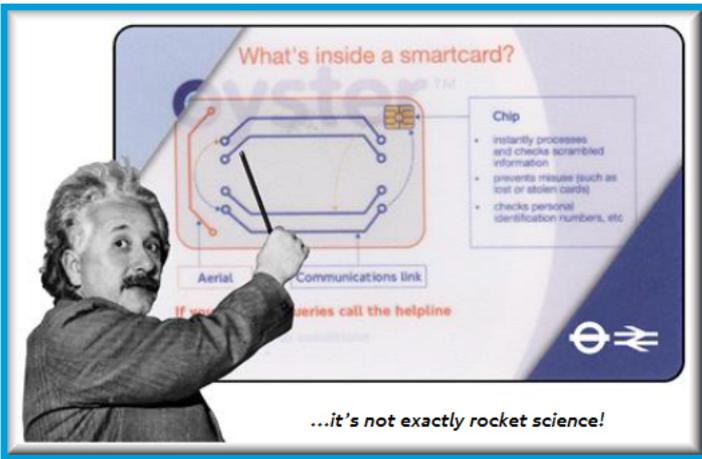
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OYSTER EXPLAINED



Following on from this edition's lead article regarding the recent gate reader upgrade, which implemented a change to the "Exit Threshold" on our gates, we thought it would be an opportune time to explain the operation of "Entry and Exit Charges" and "Entry and Exit Thresholds".

ENTRY / EXIT – CHARGE OR THRESHOLD?

This is an area which has caused some confusion amongst gateline staff in the past, so probably the best starting point is to provide a quick definition of each.

"Entry Charge" – This is the amount that a PAYG user will have deducted from their PAYG balance when they touch-in at the start of their journey. The amount charged will depend upon the time the journey is started and whether the standard rate of PAYG or the reduced rate of PAYG applies. The amount charged will also depend upon the type of card being used and whether there are any valid discounts or a season ticket on the card.

In most cases, an adult card without any valid discount will be charged the maximum fare of £8.20 at standard rate or £5.60 if the reduced rate of PAYG applies. However, there are some exceptions to this, notably at some of the NR stations outside of Zones 1-6 and on sections of line where higher fares and therefore a higher "Entry Charge" will apply. Whilst at the Heathrow Airport stations a £0.00 "Entry Charge" is made, to facilitate free travel by train between the various terminals.

If an Oyster card containing a current season ticket is touched-in at a station outside of its zonal availability a lower "Mixed Journey Entry Charge" of £5.90/£4.60 will be deducted, reflecting that part of the journey is likely to be covered by the season ticket.

For other users, the "Entry Charge" is generally set at the Maximum PAYG fare, as part of the function of the deduction of an "Entry Charge" is to help protect revenue. If the customer touches-in and subsequently fails to touch out, they will end up being charged a maximum fare for their incomplete journey. However, if they touch-out, they will be automatically refunded the difference between the "Entry Charge" made and the appropriate PAYG fare for the journey they have made.

One key misconception is that the customer doesn't have to have the whole amount of the "Entry Charge" on their card when touching-in. What governs whether they have enough PAYG to be able to travel is:



"Entry Threshold" – This differs from the actual "Entry Charge" and rather than being set at the Maximum PAYG fare, is normally set as being the minimum PAYG fare that applies from the station concerned. So within Zone 1, the "Entry Threshold" will be £2.40, whilst outside of Zone 1 it will be either £1.70 at times that standard PAYG charges apply or £1.50 when the reduced PAYG rate applies.

This means that as long as a customer has at least £2.40 on their Oyster card, they would be able to start a journey at a Zone 1 station. Deduction of the "Entry Charge" could therefore mean that their card will have a negative balance immediately after touching-in, but this isn't a particular problem, as when they touch-out at their destination, their card balance will be adjusted to reflect the fare for the actual journey they have made.

ENTRY / EXIT CHARGE OR THRESHOLD....continued

If a customer tries to touch-in and their PAYG balance is below the “Entry Threshold”, then the card will be rejected with Reject Code “36” (Insufficient PAYG) and they should be advised to go and top-up their PAYG balance.

“Exit Charge” - This is the amount that a PAYG user will have deducted from their PAYG balance when they touch-out at the end of their journey, having not touched-in at the start of their journey.

Like the “Entry Charge”, the amount charged will depend upon the time the journey is completed, the type of card and whether the standard rate of PAYG or the reduced rate of PAYG applies. It acts in a similar manner to the “Entry Charge” in protecting revenue, by enforcing a maximum fare for any un-started journey.

“Exit Threshold” – Until recently, the “Entry and Exit Thresholds” at our stations were the same, so that a customer had to have at least the minimum PAYG fare to be able to either touch-in at the beginning of a journey or touch-out, having previously failed to touch-in at the start of their journey.

If the customer had touched-in correctly, the “Exit Threshold” doesn’t really come into play, as the card holder will not be deducted an additional PAYG charge, unless they travel to a station outside the zonal area where fares higher than the normal maximum fares apply.

The recent reader upgrade means that we can now set a different “Exit Threshold” to the “Entry Threshold” and rather than the minimum PAYG fares outlined (on the previous page), LU stations now have their “Exit Threshold” set at -£2.00.

The main impact of this change, is that as long as an Oyster card does not have a PAYG balance of less than -£2.00, the customer will now be able to exit at their destination, even if they failed to touch-in correctly.

Rather than their card being rejected with reject code “36”, the gate will now open to let the customer out, the appropriate “Exit Charge” will be deducted and the card is likely to end up with a negative PAYG balance. This will prevent further use of the card until it has been topped-up.

To illustrate the impact of the change to the “Exit Threshold” we use as an example an Oyster card being used to travel between two stations within Zone 1.

The first two lines of the table below reflect what would have happened prior to the change being made. The first journey is completed without any issue, but the resulting balance is below the “Entry Threshold” so the card is rejected at the start of the second journey. On the basis that the customer has then got into the system behind another customer, via an open WAG or gate etc. The card is then rejected on exit.

After the change has been applied, the card would still be rejected at the start of the second journey, but if the customer does get into the system, they will now be allowed out.

Starting balance	Entry	New balance	Exit	Final balance
£3.00	-£8.20	-£5.20	+£5.80	£ 0.60
£ 0.60	Rejected	£ 0.60	Rejected	£ 0.60
£3.00	-£8.20	-£5.20	+£5.80	£ 0.60
£ 0.60	Rejected	£ 0.60	-£8.20	-£7.60

Part 2 – On Page 3, we outlined some forthcoming expansions of PAYG availability

Q3) How many counties, other than Greater London can you use PAYG in?

A 3

B 4

C 5

D 6

Ticketing & Revenue
T&R
Trivia

[Answers on Page 19](#)

REVENUE PROJECTS

GATE UPGRADES

As with previous editions of TRU, over the next couple of pages we are providing you with a brief update on the various initiatives being implemented to improve gate performance and reliability.

The Christmas / New Year break means that there has not been a huge amount of progress on several of these projects and progress is currently being hampered by the heavy demand on Cubic testing resources, as a result of a number of different projects vying for the use of the same resources.



PADDLE CONTROL SOFTWARE

A further gate software change which is to be deployed shortly affects the control of the gate paddles on E2 gates and in particular how they react when an obstruction is detected.

This software has been previously been Vanguard at two locations with E2 gatelines; Euston Square (Wellcome entrance) and Stratford (North).

Initial testing of the revised settings identified that the much quicker “backing off” of the paddles actually made it considerably easier for customers to follow another customer through the gate without a successful validation.

As a result, Cubic were asked to revisit the settings and provide a revised version of software which met the requirements of the relevant British Standard (BS EN 16005 – “Power operated pedestrian doorsets”) whilst not making it too easy for customers to pass through a gate without validating.

The latest version of software has changed the angle at which the paddles re-open once an obstruction has been detected and extends the time before the gate fully reopens. This should mean that if a customer or their property becomes trapped between the paddles, the change in the angle of the paddle should allow the customer to remove themselves or their property more easily than on the existing software which is currently in use across the network.

It is intended to deploy this revised version of the software to the two stations used for the Vanguard last year and to then also add Embankment to the Vanguard, as this site has been selected for a further planned trial of a new design of gate paddle made from a new lighter material, which we are planning to try there later this year.

MANUAL GATE REPLACEMENT

We are currently reviewing all of the remaining Manual gates at LU stations to determine whether they are still required or not. Currently there are approximately 65 Manual gates, many of which are at stations which have been equipped with WAGs.

Although at most small stations the Manual Gate was removed to enable WAGs to be installed, at a number of larger stations where the WAG could be fitted in, one or more Manual Gate was left behind and in many cases are now unused and often hidden behind whiteboards.

Cubic are keen to reduce their maintenance liability on these Manual gates and in particular the oldest first generation gates which were not built by Cubic and for which replacement components are no longer manufactured.

We have already identified a number of locations at which Manual gates can be removed and replaced by fixed barriers and some of these are already being progressed as part of project works at the stations concerned.

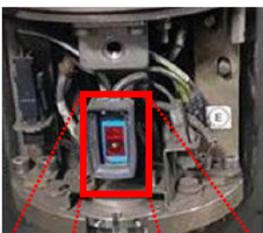
It is likely that at a small number of locations we will need to retain the Manual gate for crowd control issues, but if necessary, these can potentially be upgraded with more modern gates removed from elsewhere on the network. The gates removed from other sites should also provide a larger pool of spares to keep remaining units serviceable.



EI BLU VANGUARD

Good news on this front, as all of the vanguard gates have continued to perform well and show a considerable reduction in Error 246 faults being reported since the shrouds were fitted to them. The gates at the original two Vanguard stations, Swiss Cottage and Paddington (Main) as can be seen from the graphs on the right, continue to show virtually no error 246s since the shrouds were fitted at the start of phase III.

The Vanguard gates at London Bridge and Manor House have shown some incidents over recent weeks, but an initial review by Cubic has identified that at these sites, although the new shrouds had been fitted, the reflectors that the beams use had not been replaced. At the two original Vanguard sites, the E1 gate reflectors had been replaced by ones normally used on E2 gates as illustrated below.

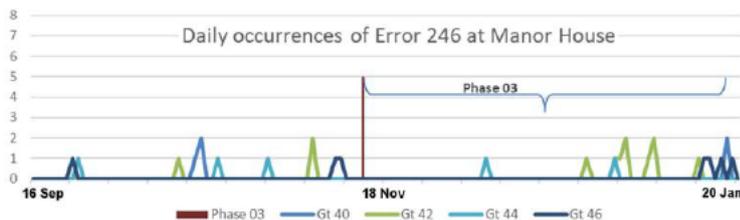
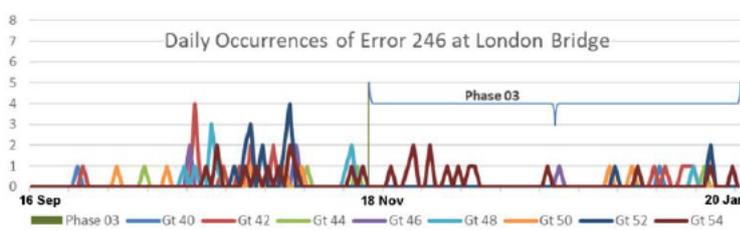
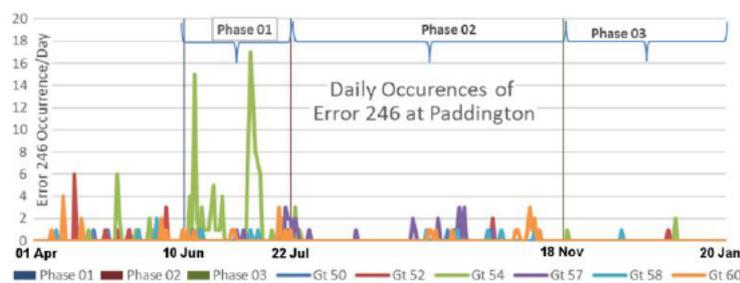
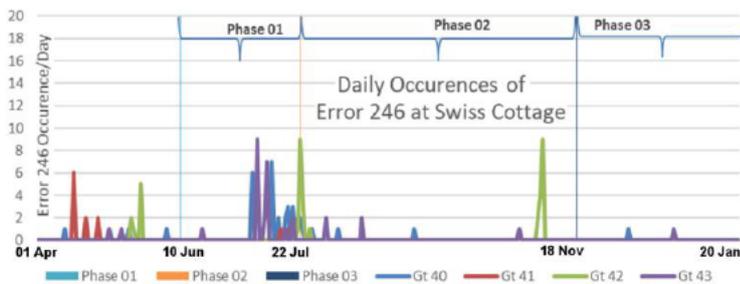


As a result of the overall improvement achieved, Cubic are now planning to move from this being a Vanguard at 4 locations to become a full rollout to all of our E1 gatelines.



Before this can commence, orders need to be placed for the manufacture and delivery of the required number of shrouds for all of our E1 gates.

Installation work is unlikely to start until the summer and initially we will be prioritising locations where gates are located below ground level and other stations which have traditionally suffered from high levels of dust, as the improvement at these locations will be most marked.



GATE SOFTWARE UPGRADES

Following the successful deployment before Christmas, of revised E2 gate software to address an issue with a high level of Error 01 failures previously seen on E2 gates, a similar release of updated software for Pneumatic and E1 type gates is due to be deployed shortly.

The initial release for Pneumatic gates is scheduled to be Vanguarded at the three stations on the right which have seen a high level of Error 01 on gates over the last two periods during week commencing Sunday 03 February.



In addition to resolving the error 01 issue which has existed since the deployment of the new LCP3, the planned release will also address some other issues which have been labelled as 'short duration faults'. These are typically issues which render the gate to be out of service for a short period of time, before the device eventually recovers. Following a short period of monitoring, it is then planned to deploy the new software to all pneumatic gates as part of a remote upgrade spread over a period of about a week. The software upgrade for E1 gates is currently under test and is scheduled for deployment as a Vanguard in early March. Proposed sites for this Vanguard are yet to be agreed with Cubic.

Cubic are also currently developing a further upgraded version of E2 software, which will pick up the 'short duration faults' which are being addressed as part of the Pneumatic and E1 gate upgrades, but which were not included in the last E2 gate release at the end of last year.

REVENUE PROJECTS

SCU UPGRADE

The Christmas break and fares revision further delayed completion of the final round of testing on the new design of touchscreen SCU, which was aimed at addressing concerns around a possible screen freeze issue that had been seen during development (as outlined in previous editions of TRU). To address this potential issue an additional feature has been included to potentially restart the SCU in the likely event of a freeze occurring.



A further witness testing event was held start on Thursday 24 January after which approval was given for Cubic to progress to the start of the long awaited Vanguard. It is planned to install the first of the new SCUs at East Putney on the night of Monday 11 February, followed by the second station Southfields, two nights later. The rest of the Vanguard sites will then be upgraded over the following two week period.

The planned installation dates for the vanguard sites are as follows:

EAST PUTNEY	11 Feb
SOUTHFIELDS	13 Feb
EMBANKMENT	18 Feb
EUSTON	20 Feb

LONDON BRIDGE (Main)	24 Feb
LONDON BRIDGE (Borough High Street)	25 Feb
EUSTON SQUARE	27 Feb

We plan to provide a further in depth review of the new SCU and some of the features included within TRU16 next month.



1987 →

Original SCU with built in comms panel and CRT screen



2017 →

Original SCU keyboard but with bulky comms panel removed and new flat screen



2019 →

All new SCU with large touchscreen display and pro-active icons

SC3 UPGRADE

Following a Vanguard covering around 12 LU Station Computers (SC) before Christmas, Cubic have recently commenced a further programme to update all of our SC3 Station Computers with an updated base image.

The programme commenced on Sunday 20 January and is being completed during engineering hours, with six SCs being upgraded each night on five days a week. This should mean that we will be completing 30 devices per week, with the programme for LU sites being scheduled to be completed towards the end of March. Following this Cubic will then need to complete the replacement of Station Computers at all NR and other stations that accept Oyster, which is likely to take them until June to complete.

During a site visit to each station, a Cubic engineer will physically swap the current SC3 device for a unit, which has been pre-loaded with the new base image already installed. The units removed will then be returned to the workshop to be upgraded and then reissued to other sites, as the programme continues.

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)

(b)

(c)

(d)

(e)

Is there a connection?
– You decide.
[Answers on Page 19.](#)

TVM VANGUARD UPDATE

The performance of the two Vanguard LU TVMs at Stratford (Mezzanine) has improved recently, following these devices receiving several software updates which have also been applied across TVMs in use on other modes. In recent periods the performance of the two machines at Stratford has been higher than most other TVMs.

Following a recent review, the Vanguard has been formerly signed off, allowing Cubic to receive a 'milestone payment' for the development work they have completed on the LU variant of the TVM.

Two further LU TVMs installed at Bond Street (Marylebone Lane), currently remain restricted to bankcard only operation, as we have still been unable to confirm the data connection to allow commissioning of the Cash Handling Device at this location.

A recent change in the TfL contractor responsible for the maintenance of the IT network has hampered our attempts to get the network port installed within the POM Room activated.

The location of the room within the concrete structure above the entrance means that the option of using the 3G/4G router we utilise at most locations is not an option at Bond Street. There has been some recent progress in identifying what needs to be done to activate the line and hopefully within the next few weeks the issue will have been satisfactorily resolved.



Before further LU TVMs can be installed, we still need to resolve some issues affecting the way that user access is activated or removed on these devices.

In recent weeks we have had a number of instances where the process put in place to activate the user lists on TVMs has failed to update with new TSID card holders details after the activation of their cards.

Unfortunately this has resulted in some delays in card holders being able to sign on to machines at Bond Street and some of the RSLU stations on the Bakerloo and District lines.

QBM SOFTWARE UPGRADE

In addition to the various gate software upgrades currently underway, as outlined on [Pages 14 to 15](#), Cubic have also been working on upgrades to POM software to address some known operational issues. In particular to address instances of Errors 91 and 96, which affect bankcard acceptance.

The first of these upgrades is scheduled to be released for the QBM in early March, as this device has the longest period since receiving a software upgrade. Once testing is complete it is planned to deploy the new software to the Vanguard devices listed in the table on the right.

Station	QBM
BRIXTON	19
ELEPHANT & CASTLE (Northern)	18
FINSBURY PARK (Seven Sisters Rd)	19
GANTS HILL	19
HAMMERSMITH D (Main)	18
WESTMINSTER	19

These particular devices were selected as they had all seen high levels of one or both of these error codes during the previous eight weeks. A couple of the sites have more than one QBM, but to mitigate against the potential risk of an issue affecting more than one device, we will initially only upgrade one of the devices.

After a short Vanguard, providing no issues are identified and instances of the two errors decrease, we will then deploy the new QBM software to all of the other QBMs. As there are only just over 100 of these machines, the deployment process will be relatively quick.





Two of the three models of new note handler which are being evaluated by Cubic, were put into service just before Christmas and we currently have two units under Vanguard at Moorgate (Northern) and at Highbury & Islington.

At Highbury & Islington we have had a few issues with note jams occurring on the new unit. To address these, Cubic are looking to install a new design of head developed by the units manufacturers, within the transporter. We have also had a couple of device failures which appear to have been caused by the turning of the unit for servicing the vault putting a strain on the connections between the MFM and the note unit. Cubic are currently looking at a modification to make this connection more robust. We have also had a couple of reports of difficulty in releasing the note vault from the unit, which required Cubic to remotely reset the device to free it.

At Moorgate there have been quite a few incidents where the device has failed to dispense a note to the customer, in most cases a £5 note has not been dispensed. Log files extracted from the MFM after a couple of these incidents seems to point towards a software issue, which Cubic are currently investigating.

To mitigate against this and to put all three units being trialled on an 'even playing field' for comparison purposes, Cubic are planning to restrict the Moorgate unit to work as a BNA, like the other two models. This can be achieved relatively simply by changing a setting within the unit, which will effectively send all notes to the vault at the end of a transaction.

The recycler unit will then effectively only be used as a note escrow, in a similar manner to the Suzohapp unit described later in this article.



INSTALLED AT MOORGATE →

Innovative Technology

Preparatory work to fit the third and final unit which is being supplied by Suzohapp, has continued since the beginning of the year, although the task of physically fitting this new unit within the MFM casing, has proved to be a lot more difficult than anticipated. Modifications have since been made to the initial casting which holds the BNA and Chip & PIN units (as shown in the image below left).



In the prototype casting used for testing purposes, the casting was silver as the metal work had not been painted, but the production version for the trial will be painted black like those on other devices.

One distinctive feature of the new housing is that the PED keypad will be mounted slightly further forward than on other machines. This actually makes it slightly easier for customers to view the screen and keyboard.



Testing was due to be completed in early February during which a couple of minor issues were identified. Providing these can be quickly resolved and there are no further issues identified, this unit is due to be installed within MFM 31 at Vauxhall in late February.



After a short bedding-in period, the Vanguard of this unit will then run in parallel with the other two, to assist with the evaluation of all three models.

Like the unit already installed at Highbury & Islington, the Suzohapp unit that is to be installed at Vauxhall will operate as a Bank Note Acceptor (BNA) during the Vanguard. Should this unit be selected for future use by Cubic, it also has the capability of being upgraded to recycle notes and give notes as change in the future.

The Suzohapp unit is fitted into the MFM in a similar manner to the other two trial devices and our BNR units and to service the note vault, the spine has to be fully withdrawn and the housing of the unit rotated through 90 degrees as shown at the top of Page 19.

MFM BNA REPLACEMENT TRIAL ...continued



The vault is then released by the use of a key inserted into the lock on the right of the vault (circled in red) which then allows the vault to be easily removed. The same key is then used to open the vault and to remove the notes from inside and then lock the vault before it can be reinserted into the device.

The vault has a capacity of approximately 1,000 bank quality notes, which is significantly more than the unit on trial at Moorgate, but less than the very large capacity unit being trialled at Highbury & Islington.

As already mentioned, the Suzohapp unit has the longer term capability of being able to recycle notes, but during this initial trial the note recycler will be restricted and configured to work as a note escrow, holding up to 14 notes until the end of each transaction and then sending all of the notes to the note vault.

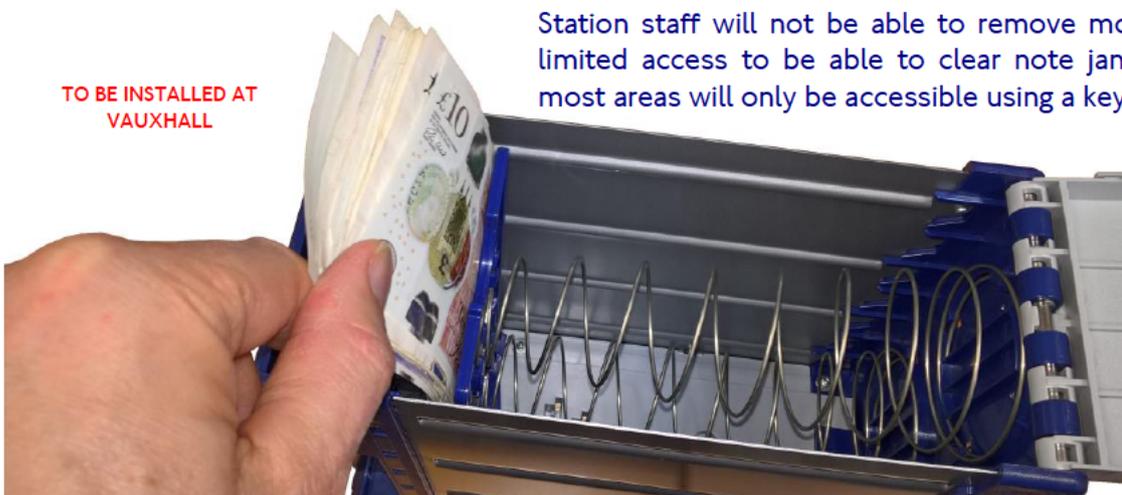


One of the other features of this particular unit is its accessibility for maintenance purposes. Cubic engineers will be able to remove individual modules making up the unit to clear note jams and replace components, rather than having to replace the whole note handler, as currently often happens with our existing BNA and BNR units.

Should the unit fail, this feature should hopefully shorten the time that the device is out of service and reduce the requirement to send whole units back to the workshop and deliver large replacement parts to stations.

Station staff will not be able to remove modules and will have very limited access to be able to clear note jams should they occur, as most areas will only be accessible using a key only held by engineers.

TO BE INSTALLED AT
VAUXHALL



Once all three devices are up and running, we promise to keep you regularly updated on their performance during the trial in future editions of the TRU.

Pt1	Q1	B	£5.00
	Q2	a) 1 x Single, b) 2 x PAYG	

Pt2	Q.3	D	6 (Essex, Kent, Surrey, Herts, Bucks, Sussex)
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Pt.3	LAL MIXIDE PU
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How did you do?

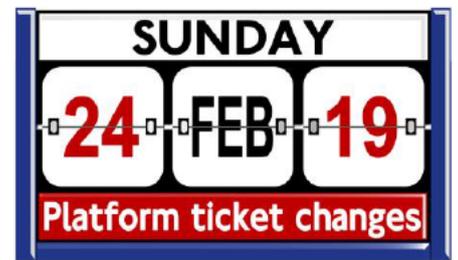
**ANSWERS TO
T&R TRIVIA**



*Is there a connection?
- All stations that begin with "E".*

PLATFORM TICKET CHANGE DELAYED

We had hoped that the planned change to prevent Platform tickets being accepted by way in gates would be implemented as part of a base data update on Sunday 28 January or at the very latest as part of the following load on Sunday 10 February.



Unfortunately, the change was not implemented on 28 January due to some post fares revision fixes that needed to be made, some of which are documented elsewhere in this edition.

To 'de-risk' the level of changes taking place on Sunday 10 February in readiness for the implementation of the expansion of PAYG on NR (see [Page 3](#)), TfL have agreed that Cubic can delay the implementation of the Platform ticket change until the following base data load which is scheduled for Sunday 24 February.

As the table concerned has not been changed for around 15 years, the change being implemented on 24 February will initially be restricted to 3 Vanguard sites. All being well the remaining stations will be updated in the next basedata update on Sunday 10 March.

The 24 February changes will also include some POM screen changes which have also been delayed.

These involve messages that are displayed for Oyster refunds on certain types of card and when a discounted child ticket is selected but is unavailable from the device.



PLATFORM TICKET FROM JANUARY 1980

We start the year with an uncharacteristic apology for a double error which appeared in a couple of recent editions of TRU.



First of all in the [Oyster Explained](#) feature within [TRU112](#), in relation to possible future extensions of PAYG to Epsom, we misleadingly mentioned that Freedom Passes were currently valid for travel to Epsom, which is not completely correct.



Freedom Passes are only valid for travel to Epsom on TfL Bus services and are not valid on NR trains to Epsom. The last stations at which Freedom Passes are valid within Zone 6 are Ewell East and Ewell West.

Unfortunately we compounded this error in [TRU113](#), in our look ahead to the January Fares Revision, where we included the same statement in relation to the future extension of PAYG to Epsom.

Please note that even when the expansion of PAYG acceptance to Epsom takes place, Freedom Passes will still not be valid for rail travel to Epsom. Holders wishing to travel will continue to have to buy an extension ticket from the Zone 6 boundary to Epsom.

LOOKING AHEAD TO TRU116

Our next edition of TRU will be published in mid-March and will include:

- A further in-depth look at the new SCU
- An update on the MFM BNA trials
- The latest Fraud survey results
- A review of the impact of the Exit threshold change
- Updates on other projects
- A further selection of your Ask ██████ letters and queries

Plus all of the latest T&R News stories and a selection of our other regular TRU features.

