

Issue 146 - July / August 2023

Ticketing & Revenue Update

The Cash Handling Device Upgrades are here
Details of the Vanguard are on Page 17.

Barcode tickets - could we be getting closer
to a solution - see Page 7.

Our reporting processes are being improved
Find out how - see Page 12.

Inside Issue 146

In the News - [Pages 2-7](#)

September Fares Revision, POM screen changes, Project Oval, Collection Issues, Barcode ticketing, Notting Hill Carnival Special Features - [Pages 8, 9 & 12](#)
Ticket Irregularity survey, Basedata and Report improvements

Ask Olly - [Pages 10 & 11](#)

More of your questions answered
Revenue Projects - [Pages 13-17](#)
POMs, Gates, PEDs, SCU and CHD updates

And Finally - [Page 18](#)

RID Issues

The results of the February On Train Fraud survey have been published - see Pages 8&9.

A fares revision will take place on Sunday 11 June. Find out what's in scope on Pages 2&3.

Liverpool Street (Central)
October 2019

JUNE FARES REVISION REVIEW

The last fares revision on Sunday 11 June like other recent revisions, went exceptionally well, with no major issues highlighted.

All LU devices appeared to have accepted and implemented their new tables at start of traffic on the Sunday morning and there were no issues reported with Oyster, contactless or ITSO validations across the whole network.

Testing was undertaken throughout the Sunday and on the morning of Monday 12 June, to ensure both Peak and Off-Peak charges were being correctly applied. No issues were identified allowing the fares revision change moratorium to be quickly lifted on Tuesday 13 June.

Although the scope of the revision was relatively modest, overall, it went very smoothly.



SEPTEMBER FARES REVISION PREVIEW

Very much hot on the heels of the completion of the Fares Revision on Sunday 11 June, the next scheduled fares revision is due to take place next month on Sunday 03 September.

SEPTEMBER FARES REVISION

This means that we will have had fares revisions at basically 3-month intervals since March (March, June and now September).

The main items scheduled to be included in this forthcoming fare revision are:

- Removal of the single sided OSI settings from gates at Euston LU and Euston Square,
- Removal of the single sided OSI settings from gates at Blackfriars LU station.

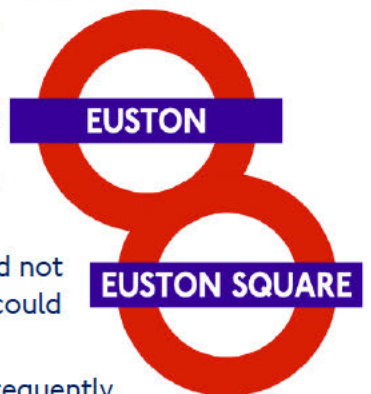
The single sided OSI setting is applied a very small number of locations where customers interchanging may not be able to validate at the end of the first leg of their journey. At the locations where it is set it allows any Oyster card with a current open journey, to be used to enter the station, so effectively continuing the previous journey without incurring an additional entry charge.

In the case of Euston / Euston Square, there were platforms at Euston which did not have gates or validators and into which trains from Watford Junction could occasionally be routed.

At Blackfriars when the new Thameslink station initially opened the gates were frequently left open resulting in customers not validating before reaching the LU gateline.

Since these settings were applied, the historical reasons for these particular locations to have such settings have now been superseded and today are outweighed by customers being able to validate the same Oyster card more than once.

After the change, validation arrangements will be the same as other locations where we have Out of Station Interchanges (OSIs) with other stations.



- PAYG fares on Thames Clippers River services will change. Fares in the morning peak period (06.35 to 09.27hours on Monday to Friday, but excluding public holidays) will decrease, whilst fares at all other times will increase. This will mean that unlike the PAYG charges on other modes, fares in the morning peak period will be cheaper than at other times. **Please note this change may not now go ahead.**



- The price of the Zone 1-6 child rate Discounted Day Travelcard for children travelling with an adult holding an eligible Railcard or Gold Card, will increase by 10p to £2.90 on LU ticket machines. Rather than an actual fare increase, this is actually a correction of a pricing error that occurred in the 5 March 2023 Fares Revision. The £2.90 is already charged elsewhere and unfortunately there was insufficient time to correct this as part of the 11 June changes.

Discounted Day Travelcard (Off Peak)

Child

Currently ➔ £2.80

11 Jun ➔ £2.90

SEPTEMBER FARES REVISION

- Single and Return fares for a few wholly NR journeys and through journeys to these destinations from LU) will increase, as a result of changes made by the relevant TOCs.

Some TOCs chose to increase certain fares in September, rather than at the main fares revision each year.

- An Off-Peak capping easement will be implemented at Enfield Chase at the request of GTR to allow customers travelling on the first service from the station after 09.30 hours, to be able to touch-in and be charged an Off-Peak journey from 09.25 hours
- Platform tickets will be withdrawn from all LU stations except Southwark, as the first step in a move to reduce the range of magnetic tickets sold at LU sites.

Sales of Platform tickets are extremely low across the network.

- A new Southeastern station, Thanet Parkway (which opened on Monday 31 July 2023) will be added as a destination for Single / Return tickets on POMs, so customers will be able to buy tickets to this new destination.

As part of the September Fares Revision, there will also be some changes to POM screens as outlined on Page 04.

The other main changes being made in September, relate to the loading of further fares data for the forthcoming extension of PAYG acceptance on contactless payment, to a number of NR stations outside of the London Zones, as part of the Department for Transport (DfT) funded "Project Oval".

Further information on Project Oval appears on Page 05.



STAFF FARES LISTS

LU Staff Fares lists are also being updated to reflect the changes to prices from Sunday 03 September.

Since printed versions of the Staff fares lists are no longer provided, these will be available to download from the T&R Platform pages of the intranet on a date we will provide in the weekly Hot Issues Bulletin along with a link to the site.

Any previous versions of fares lists for stations on your Area that have been saved on staff issued iPads should be deleted on Sunday 03 September, to avoid any confusion when checking a fare for a customer.

SINGLE FARE FINDER

As the Fares Revision Circular contains only a selective list of NR Single and through-fares, there will only be a small number of changes made to it in the week leading up to the fares revision.

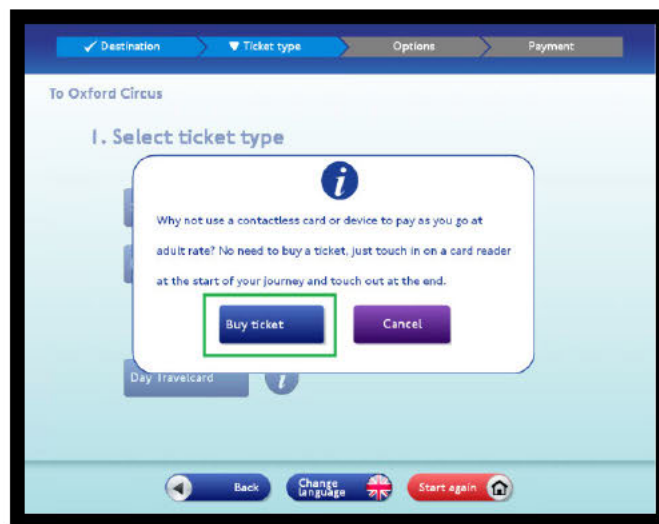
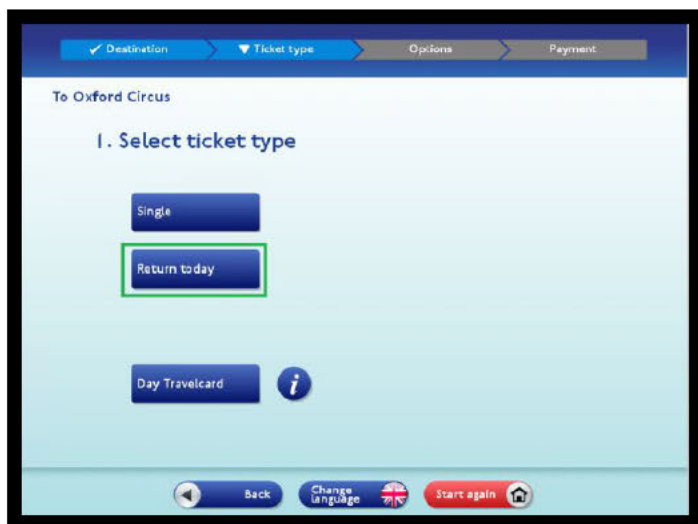
A useful tool available to both staff and customers that enables them to check fares where either Contactless or Oyster is accepted, is the Single Fares Finder on the TfL Website.

[\(Click here to visit the website\)](#)

POM SCREEN CHANGES

As part of the September Fares Revision on Sunday 03 September, a couple of further changes will be made to POM screens to improve information given to customers.

The first of these, in an effort to highlight to customers attempting to purchase a Single or Return ticket, that they may be able to use contactless payment for their journey, will result in a display a pop-up message appearing on the screen as illustrated below, with messaging to encourage the use of contactless payment if customers select a destination where PAYG is accepted.



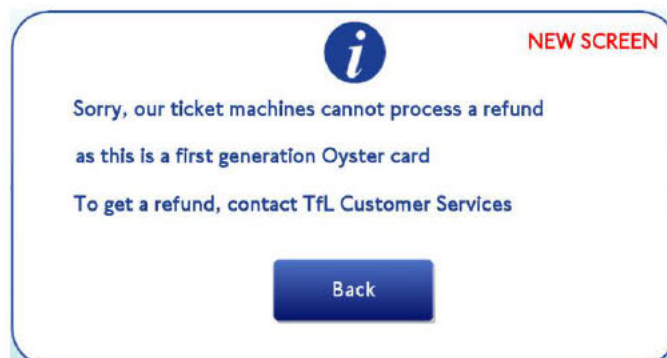
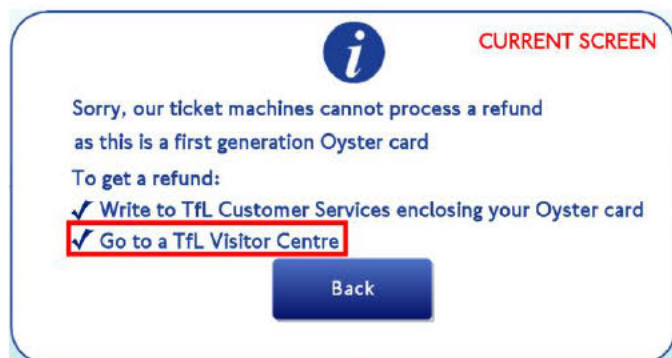
This should hopefully avoid customers that are not familiar with our network or ways in which they can pay for their travel, unnecessarily buying a Single ticket and paying more than they need to when they could have actually used their contactless bankcard or device. It seems to be the default option of many new customers to select a Single ticket to their chosen destination as their first step.

It will also hopefully support steps to further reduce sales of magnetic tickets. Sales of Singles and Returns are very low compared to the volumes we used to sell, but the feeling is that many that are sold, were probably not the best choice for the customer.

In parallel with this, TfL's Tech & Data and Customer Experience teams are currently looking at other ways to further highlight the benefit of contactless over magnetic tickets and are planning some mini promotions at stations which sell high volumes of Day Travelcards, where again some customers might be better off using contactless or Oyster.

The second of the POM screen changes will see an update to the screen message which is displayed to customers when a refund cannot be processed on their Oyster card. From 03 September this will change to a modified message (as shown below) and refer customers to TfL Customer Services removing the current reference to TfL Visitor Centres which no longer process refunds.

The Visitor Centre team had previously highlighted a number of very dissatisfied customers arriving at their centres only to find that they still could not obtain the refund they wanted.



PROJECT OVAL

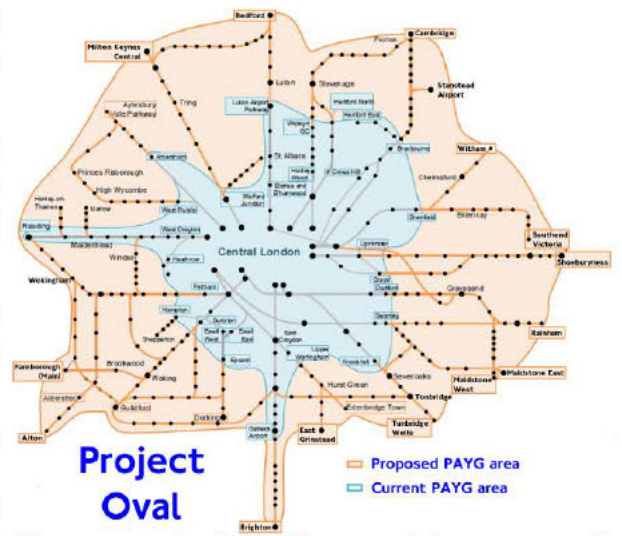
As previously outlined in TRU145, the DfT have agreed £20m funding for the expansion of PAYG beyond Zone 6 to around 200 NR stations within the south-east of England.

This like other recent PAYG extensions will be for contactless payment only, as limitations within the Oyster system mean that we have reached the maximum number of zones that can be configured for calculating fares.

The first phase of Project Oval has recently been announced and will see PAYG expanded to 53 additional stations by the end of December.

Cubic installation work to equip the gates at the stations concerned with readers and to install PVals at ungated sites, has been underway for some time and as fares data has been progressively loaded for these new stations as part of the fares revision process in readiness for the expansion.

The first phase of Project Oval will see contactless expanded to:



Chiltern	LNWR	C2C	South Western
Beaconsfield	Apsley	Basildon	Ashford (Surrey)
Denham	Berkhamsted	Benfleet	Datchet
Denham Golf Club	Bletchley	Chalkwell	Egham
Gerrards Cross	Bricket Wood	East Tilbury	Kempton Park
High Wycombe	Cheddington	Laindon	Shepperton
Seer Green & Jordans	Garston	Leigh on Sea	Staines
Thameslink	Hemel Hempstead	Pitsea	Sunbury
Bat & Ball	How Wood	Shoeburyness	Sunnymeads
Dunton Green	Kings Langley	Southend Central	Upper Halliford
Eynsford	Leighton Buzzard	Southend East	Virginia Water
Otford	Park Street	Stanford Le Hope	Windsor & Eton Riverside
Sevenoaks	St Albans Abbey	Thorpe Bay	Wraysbury
Shoreham	Tring	Tilbury Town	
	Watford North	West Horndon	
		Westcliff	



It is likely that an additional fares Revision will be scheduled on 03 December to add additional sites and fares to facilitate Project Oval, and this may also include some changes to Single ticket fares, to remove some charging anomalies, which will arise through the expansion of contactless payment.

In general, the PAYG fares to these new destinations are likely to match the standard Single fare, unlike within the London zones, where contactless is generally cheaper than the standard fare.

Further detail on the planned implementation dates for the various routes, along with fares and capping arrangements will be included in future editions of TRU nearer the launch.

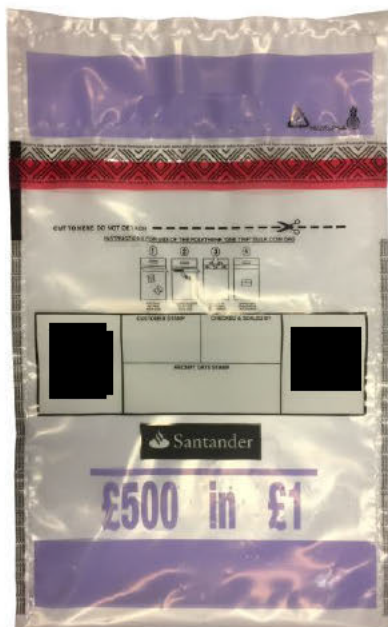
As part of the DfT initiative to allow more NR customers to benefit from the use of contactless payments, in addition to the South East, the DfT and the Great British Railways Transition team are working towards PAYG pilots in both the West Midland and Greater Manchester.



COLLECTION ISSUES – BARCODE SCANNING

In TRU145, we highlighted a few pitfalls which had resulted in cash collections being either missed or not completed correctly, when G4S had attended a station.

Since that article was published a further issue has been highlighted by colleagues within the finance area, this time concerning the collection of bulk coin bags.



As all of the bulk coin bags we use have a unique number and a barcode, it is a requirement of our current contract with G4S that custodians must scan every bag they collect, so that the bag details appear on the printed receipt.



Recently it had been highlighted that on occasions, certain custodians had just recorded the total number of coin bags collected, rather than each individual bag number. This then resulted in the receipt showing the number of bags of each denomination, but not the individual bag numbers.

The receipt confirms the value of coin collected and does not cause any immediate issues at the station, as bags are individually recorded as being collected on the SAF.

However, this does potentially cause us some major headaches further down the line, as the daily reports that TfL receive from G4S are based on the bag number, so if the actual number is not recorded by the custodian, these are not correctly displayed against the station.

It makes it a lot more difficult when bags from various sites and often covering more than one collection day, are consolidated into a cage to be sent to the Vaultex cash centre, as bags that have not been scanned will be much more difficult to trace back to the originating site, other by the time-consuming process of elimination of identifying bags on our SAF reports that don't appear on the G4S report.

Case of custodians not scanning bags are now being fed back to G4S each week, but it would also be helpful if TSID card holders could ensure that when handing over each bulk coin bag, the custodian scans each bag so that the serial number is displayed on the collection receipt.

There will be a few occasions where technical issues may prevent the custodian scanning items into their hand-held device, in such circumstances they will generally complete the collection but issue a handwritten receipt instead of the normal format.



MISSING COLLECTIONS

We have successfully managed to reduce the number of missed collections attributable to G4S non-attendance, so we are now averaging around 11 or 12 missed collections per week. Unfortunately we would have been able to get these numbers even lower had we not suffered a frustrating number of missed services due to LU staff errors.

Despite numerous reminders, we are still seeing a worrying number of missed collections due to 'no TSID card holder available'. We need to emphasise again that since the CHD was introduced 7 years ago, it isn't necessary for a TSID card holder to be present, for a collection of the CHD note sack to be collected. All that is required is for the custodian to be given access to the secure suite so that they can use their own CHD log in to make the collection. The bulk of money will then be collected.

Collections which are refused result in LU being charged for that visit and we will then incur further costs if we have to arrange a further visit to complete the collection.

BARCODE SCANNING

Now for a different barcode issue to the one we have covered on Page 6.

One of the hot topics, particularly amongst colleagues at stations that are served directly by NR or Elizabeth line services, is the gradual increase in the number of barcode format tickets that are being used by customers and more importantly, the fact that our gates do not currently have a facility to validate and accept these.

Work is continuing towards finding a solution that will allow integration of barcode scanning technology into our gates and report transactions to both the TfL Central System and to the NR back-office systems which manage the acceptance of barcode ticketing on NR.



This is not a quick job and we currently believe that it is unlikely that the project will be able to deliver a quick solution to our current problems. We are therefore looking at the possibility of as an interim solution, of introducing some form of handheld scanning device at stations with high levels of barcode format tickets. This would at least allow staff working on a gateline to check whether a barcode presented to them on a phone or mobile device was valid or not.

Currently we believe that there are a number of options which are already being used by Train Operating Company (TOC) colleagues around the country. It is hoped to have an initial demonstration of some of these solutions in mid-August. Hopefully this will identify one or more solutions that would work in our environment and which we may then be able to adapt and use at Lu sites, to bridge the gap until we are able to install scanners on actual gates.

The plan is for an initial trial to take place at Stratford, as this location was one of the first to highlight issues with customers with barcode tickets arriving on Greater Anglia services.

If successful we will hopefully then be able to extend the trial to stations like Tottenham Court Road and Farringdon, where the number of barcode format tickets has increased significantly since the opening of the Elizabeth line.



NOTTING HILL CARNIVAL 2023

This year the Notting Hill Carnival will take place over the Bank Holiday weekend of Sunday 27 and Monday 28 August 2023.

Arrangements will look to minimise incomplete journeys by encouraging customers to touch-in and touch-out where possible and will use *Station Aliasing*, *Auto-fill* and *Selective Auto-completion* at stations in the Carnival area.



Aliasing to Notting Hill Gate – Using this facility, customers forced to travel to a station beyond their intended destination who cross a zonal boundary, will not be charged for the extra zone. These settings are to be applied to the following stations from the start of traffic on Sunday 27 August until close of traffic on Monday 28 August 2023.

Auto-fill – A facility where a missing validation is added based on the customers previous and following validations.

Selective Auto-completion – Any customers, whose journeys are not Auto-completed, will be picked up by Data Analytics and appropriate refunds will be downloaded to these cards via the Faster Universal Load facility.

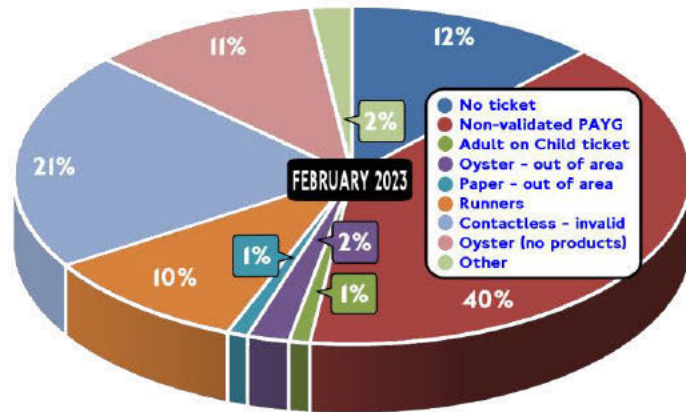
For these facilities to function correctly, gates should where possible be left in normal operation and must not be powered down, as this will prevent tables been loaded to the device and may cause depletion of the device battery which is used to open the paddles in the event of a power failure.

SPECIAL FEATURE

TICKET IRREGULARITY SURVEY

It has been quite a while since we last published the results of the on-train Ticket Irregularity Survey, which is conducted three times a year by Revenue Control in the months of February, May and November.

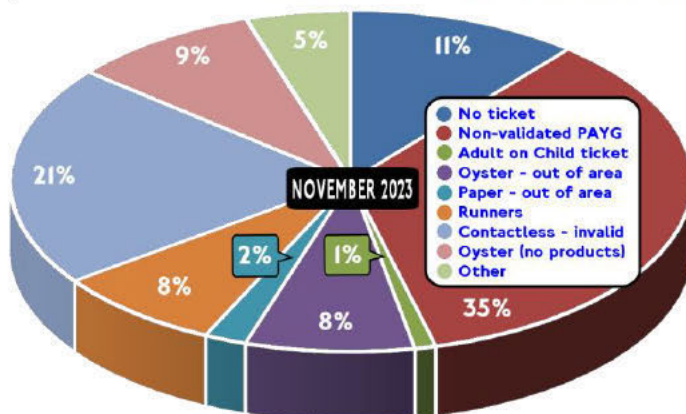
The aim of the survey is to record all types of fare evasion over the period of a set month, seven days per week, from the first train out of the depot to the last to return. These figures are then listed by irregularity type and collated to identify revenue loss on LU.



The closure of the network due to the COVID pandemic and the phased start up of the Revenue Control department has resulted in a bit of a gap in survey results, both in terms of the number of surveys carried out and the number of customers checked.

Even the latest survey in February 2023 has been affected, with a total of 5 lines being unable to conduct the survey due to staff availability issues and around half the number of customers checked (as shown below).

FEBRUARY 2023	Number checked	No Ticket	PAYG Non-validated	Adult on Child	Oyster out of Area	Paper out of Area	Runners	Contactless not authorised	Oyster no products	Other offences	Total	%* invalid
BAKERLOO	3196	51	14	0	0	0	15	6	0	0	86	2.69
CENTRAL	3520	67	12	0	2	0	7	11	11	14	124	3.52
CIRCLE												
DISTRICT	7675	59	42	4	11	5	58	89	70	4	342	4.46
HAMMERSMITH & CITY												
JUBILEE												
METROPOLITAN												
NORTHERN	5404	134	10	0	3	0	11	20	1	1	180	3.33
PICCADILLY	5090	16	6	0	0	0	6	41	6	1	76	1.49
VICTORIA												
Total	24885	327	84	4	16	5	97	167	88	20	808	3.10



In contrast the November 2022 survey, covered all lines and saw over 44,000 checks over the 30-day period.

As will be seen over the page, the biggest concern has to be the rise in non-validated PAYG over the space of just 12 months.

The reason for this is not yet known, but it has to raise alarms that it has risen from a pretty constant 13% throughout 2021 / 22, to 35% in November 2022 and 40% in February 2023.

NOVEMBER 2022	Number checked	No Ticket	PAYG Non-validated	Adult on Child	Oyster out of Area	Paper out of Area	Runners	Contactless not authorised	Oyster no products	Other offences	Total	%* invalid
BAKERLOO	3261	35	8	0	0	1	11	11	0	0	66	2.02
CENTRAL	3883	46	17	2	10	2	13	19	11	17	137	3.53
CIRCLE	2465	8	18	1	12	0	0	25	4	0	68	2.76
DISTRICT	8306	76	70	8	15	2	72	95	51	18	407	4.90
HAMMERSMITH & CITY	3387	14	17	0	17	2	0	25	9	1	85	2.51
JUBILEE	1845	45	2	2	1	1	7	10	0	1	69	3.74
METROPOLITAN	5840	23	47	1	27	0	0	58	12	1	169	2.89
NORTHERN	5300	58	30	4	0	0	13	35	1	6	147	2.77
PICCADILLY	7172	50	3	4	2	0	7	6	12	5	89	1.24
VICTORIA	3471	30	11	0	2	0	0	10	1	12	66	1.90
Total	44930	385	223	22	86	8	123	294	101	61	1577	2.83



From: [REDACTED]
Sent: 12 June 2023 11:49
To: Ask Olly
Subject: Young Visitor Oyster Cards

Hello Olly

We get a lot of tourists at my station who buy Oyster cards & want to put weekly Travelcards on their Oyster cards which is fine until you get children. Can you tell me why a card with a Young Visitor discount on it will only let me put an adult rate weekly Travelcard on it and not a child rate one?

Surely as children with a valid discount they are entitled to it?

Regards

[REDACTED]
Customer Service Supervisor
[REDACTED]



Hi [REDACTED]

Thanks for your email and query.

The issue you have identified is due to the fact that the Young Visitor discount only provides the 50% discount on PAYG fares. It is basically a discount set on an Adult card, hence the season ticket offered is at Adult rate as you have seen,

To be able to purchase a Child rate 7 Day Travelcard, the card would have to be a Child type card (Zip card), which when presented to the POM would offer Child rate products.

In most cases child visitors would get best value by using Oyster with the Young Visitor discount set and on which their daily spend would be capped.

Regards

Olly Oyster



From: [REDACTED]
Sent: 02 May 2023 16:45
To: Ask Olly
Subject: Euro charges

Good afternoon Olly,

I have had several customers who have been charged €22.50 on their European bank cards.

They say that their bank doesn't charge commission. Do you know what this charge is and if it gets corrected automatically?

[REDACTED]
CSA
[REDACTED]



Hi [REDACTED]

Thank you for your email and query.

You are not the first person to ask this question and we provided a more detailed explanation of this charge seen on non-UK Maestro cards in [TRU142](#).

The €22.50 is a holding fee rather than an actual charge and gets adjusted after the end of the traffic day, once all of the journeys made have been processed. You can reassure any customers that ask you, that they will not pay any more than the usual contactless payment charges for the journeys they make.

Regards

Olly Oyster



From: [REDACTED]
 Sent: 15 June 2023 09:21
 To: Ask Olly
 Subject: Weekly Price capping

Hello Olly,

Contactless payment weekly price cap (Travelcard and Bus & Tram Pass) works on a fixed Monday to Sunday week. If a customer is using Pay As You Go on an Oyster card, does this weekly price cap work on Oyster the same as on contactless payment on a fixed Monday to Sunday week as well?

Regards

Hi [REDACTED]

Thanks for your email and query. The weekly capping introduced for Oyster users, uses the same back-office that calculates charges for customers using contactless payment, so the charges should be the same. It also uses the same fixed Monday to Sunday week.

Regards

Olly Oyster



From: [REDACTED]
 Sent: 20 June 2023 16:25
 To: Ask Olly
 Subject: Incorrect fares charged at Turnham Green

Hi Olly

It seems that fares being charged from Feltham to Turnham Green are incorrect. This is a straight journey from Zones 6-3 with a change from NR to LU at Richmond. Yet people are being charged for Zone 2, which makes no sense. Could it be that, with Turnham Green being on the boundary between Zones 2 and 3, the fares tables have been compiled incorrectly?

A customer added a Zone 3-6 Travelcard to their Oyster before boarding the train at Feltham and was charged and additional fare when they touched out at Turnham Green.

Yours

Hi [REDACTED]

Thanks for your email and highlighting this issue. It looks as if the journey is set up as a Z2-6 journey and appears this has been the case for a while stemming back to when PAYG charges were configured.

The routings and options available in that area of London are quite complex and in most cases the charges have been based on the most popular or quickest route available, with a number of stations sharing the same fares. In the case of Feltham, as you suspected it has been set up with a default routing via Clapham Junction, which generates the Z2-6 charge. This also applies to Stamford Brook and Ravenscourt Park which are clearly wholly in Zone 2.

It is possible that the current charge can be reviewed at a future fares revision, but the team responsible are currently very stretched maintaining fares for a huge number of possible PAYG journeys, as well as adding fares for NR stations which are shortly to be added to the destinations available on PAYG. So unfortunately, we cannot currently give timescales for this to be changed. In the meantime any customers who are travelling via Richmond should be advised to use the Route Validator there, which will then result in the correct Zone 3-6 fare being charged.

Regards

Olly Oyster



SPECIAL FEATURE

BASE DATA AND REPORT IMPROVEMENTS

Another piece of work which the T&R team have recently taken on, involves the updating of data that is loaded into the Central System and which identifies which hours POMs and Gates in each ticket hall should be in service. This information is predominantly used to provide various reports and contributes to the calculation of gateline integrity measurements.



Over the last few years, due to organisational changes, responsibility for maintaining the station times information appears to have lapsed and the last attempt to update all stations failed when the file containing the revised times was deleted following the retirement of the previous 'custodian'.

Although a lot of station times have remained unchanged, apart from minor changes to first and last train times, we have identified that new stations such as Battersea Power Station and Nine Elms had no times recorded, whilst stations served by the Elizabeth line and night tube services needed to be updated to reflect changed hours of operation. A number of locations have also not been updated to reflect the splitting of Gates and WAGs onto separate arrays, resulting in the WAGs not having times loaded for them.

We have started the process of getting data on current opening and closing times for each station / location, but this is not going to be a very quick process to just update all of the data.

There is a degree of nervousness in changing data in the central system, following an incident a couple of years ago when the updating of station / area / line allocations subsequently resulted in some major issues with the generation of reports afterwards.

As a result, we are taking a very softly softly approach and have initially loaded revised data for just two locations; Caledonian Road and Battersea Power Station into the Cubic test system to check that reports generated over the coming weeks correctly reflect the changes that have been made and more importantly that the changes do not have a detrimental effect on anything else in the process.

The next steps will then be to load these two sites into the live Central system so that these stations then report correctly. If this is then successful we can then move forward with small batches of other stations on a largely geographical basis. This will initially see us focus on the eastern end of the Piccadilly line, the Battersea Extension of the Northern line, Elizabeth line stations and the City area of the Metropolitan line, before then moving on to other areas of the network.



In the meantime, we have started gathering opening and closing times for each ticket hall and gate array and at the same time we will be correcting location descriptions for each device held in base data to more accurately reflect the actual location of each device.

Although some work on this was done prior to the pandemic, to improve reporting at complicated station such as Stratford and Paddington, the updating of station times is also an opportunity to ensure that location descriptions are also updated.

This will generally see descriptions move from the current very vague standard descriptions, which don't provide much information on the device or actual location to much clearer description as in the example below:

Xxxxxxx Tkt Hall 0 (H)	to	Xxxxxx POMs or TVMs
Xxxxxxx Tkt Hall 0 (B)	to	Xxxxxx Gateline or WAGs
Xxxxxxxx Office	to	Xxxxxx Secure Suite

REVENUE PROJECTS

MFM SOFTWARE AND FIRMWARE CHANGES

Since the new Pay Complete Note Handling Units (NHUs) were introduced into our MFMs, Cubic have encountered a number of issues caused by note jams, which have had an adverse impact on device performance and availability. As a result of poor performance of these devices, Cubic have had to undertake some further work to improve the reliability of the note handlers, as the same units have not experienced similar issues when installed in other equipment. Arising from this work, some changes are being proposed to both the MFM hardware and software.

The first of these saw Cubic maintenance staff recently complete a retrofit programme to remove a relay from the NHU power supply unit, which now prevents the NHU being reset remotely, as it had been identified that attempts at a reset with a note jammed inside the unit were having a detrimental effect on the NHU motors. Rather than curing a jam, the attempt resulted in a more serious fault occurring.

This programme commenced on Wednesday 07 June and was completed during the day to minimize impact at stations and saw all MFMs visited and modified.



The final devices were completed during the first week of July, but a number of devices had to be revisited to confirm completion of works the following week.

Following on from this a software upgrade is planned to change the way notes are accounted for within the unit, when they are moved from the recyclers to the vault. The new software will also reduce the maximum capacity of each recycler module in devices equipped with Bank Note Recycler (BNR) modules to a maximum of 40 notes, to avoid the recyclers becoming over-full and then potentially jamming when the device attempted to move a note to or from the recycler.

This had previously been identified as an issue and staff at stations with BNR units had been asked to dump the recyclers once a week to avoid this happening. By reducing the capacity of each recycler unit, this will avoid the need to empty the recyclers and devices will therefore be able to continue dispensing notes as change or when making a refund. The software change will also require staff to remove the note vault each time a dump of the note recyclers is completed, to restrict any discrepancy to the service on which it occurred.

The software change will also introduce a couple of new error codes to highlight issues and action required by staff. These will be included within a more detailed briefing when the software is deployed and will be added to the current tables in T&R Book Appendix 5.

We had hoped that these changes would be ready to be Vanguarded on a cross section of MFMs during August, with rollout to other MFMs after the September fares Revision. However, during testing, Cubic identified a minor issue with an incorrect error code being displayed under certain circumstances, and some minor changes will need to be made to the software code and then retested before we can deploy this to any MFMs. This is likely to mean that we will now not be able to start the Vanguard until after the September Fares Revision.

The devices that will be used for the Vanguard are currently being finalized and further information will be provided to the stations affected ahead of the software being deployed.

Later in the year, two further pieces of work are scheduled to take place on MFMs to complete the improvement works:

- *Removal of covers, to allow station staff greater access to the NHU to clear note jams that they are currently prevented from clearing and which currently require an engineer visit to clear. Further information on this will be provided in future editions of TRU.*
- *Change to the entry bezel where notes are inserted by customers to avoid instances of the NHU being misaligned and notes skewing. This will see the bezel fitted to the casting on the front of the device, rather than to the NHU itself. This change has an impact on the planned PED replacement as outlined on Page 14 and Cubic are currently trying to co-ordinate the requirements of both pieces of work.*

REVENUE PROJECTS

PED REPLACEMENTS

The current Chip & PIN devices we use on our POMs are no longer manufactured and will be out of manufacturer support in late 2024.

As a result, we have commenced the process of procuring replacement units and for Cubic to integrate these new units into each type of POM. The process of developing solutions, integrating them into devices and testing the new solution is quite lengthy and we are unlikely to see the new units being installed on LU devices until the latter part of 2024.

The device selected for the AFM, MFM and TVM is the Ingenico Self 7000 / 8000, which is a development of the current units produced by the same manufacturers and comprises of a keypad unit and separate card reader which will be accommodated within the current apertures on these devices.



The significant difference is the new units will also be able to support contactless payment. Although customers can use contactless directly to travel, they currently have to undertake a Chip & PIN transaction if buying National rail tickets or tickets for other people.

The main impact of accepting contactless transactions on our POMs is that steps need to be taken to minimise the impact of metal components around the area of the antenna.

This is likely to require some changes to the bezel and casting that the PED currently sits within.

Cubic have recently produced some initial proposals for fitting the new units to the AFM and TVM below using 3D printed replicas.



Further work is required on the MFM solution due to the need to accommodate some changes to the current bezel for the Pay Complete Note Handling Unit.



In the TVM mock-up shown on the left, it is envisaged that the actual keypad will not recess as far as shown, as this is likely to impede access.

In the AFM mock-up on the right, the card reader will hopefully not protrude as much in final version.



REVENUE PROJECTS

BANKCARD PACK UPDATE

A bit like buses, we waited quite a long time for an updated bankcard pack to be available and then two came along fairly close together.

This relates to software used by the Chip & PIN unit (PED) to process card payments on our POMs and is provided to Cubic by our card acquirer Barclaycard.

After a number of delays, as we reported in TRUI45, a new version was initially Vanguarded on the POMs at Euston.

This unfortunately resulted in a lot of short duration faults being reported on these devices, which although not appearing to impact customers, as they cleared within seconds, were not something we wanted to rollout further.



In June it became clear that all POMs would need to receive a further update to load an update security certificate to allow them to continue accepting card payments after the expiry of the current certificate in mid-July.



To facilitate this a decision was taken by Cubic to abandon the bankcard pack Vanguard at Euston and revert devices back to the standard software.

This proved slightly more difficult than expected and despite a Cubic engineer attending site to downgrade the POMs one by one, this was found to be much more time consuming than expected and required several follow-on visits to complete the task on every device.

The software update with the updated security certificate was then successfully Vanguarded at a number of locations previously used for bankcard pack upgrades in two batches on the nights of Thursday 15 June and Friday 16 June, before all other devices were progressively updated in a rollout starting on Tuesday 27 June.

This was completed remotely with the new software and security certificate being downloaded in the evening, to take effect from start of traffic the following morning. The final devices were completed on the night of Friday 07 July.



TVM NHU FIRMWARE

Further to our last update in TRUI45, following on from the successful Vanguard of updated firmware for the Note Handling Unit (NHU) in TVMs at Moorgate (Met), Stratford (Mezzanine) and Whitechapel, the go ahead was given for Cubic to commence the rollout of modified firmware to all other TVMs that accept cash payments, starting on Monday 24 July.

TVMs that operate as 'card only' devices do not require this particular upgrade.

This firmware upgrade will address an issue which had been caused following the loading of the last note set to prevent acceptance of the paper version of the £20 note and had led to an increase in note unit faults being reported by devices.

The majority of LU devices were successfully completed during the first week of the rollout, with the final LU TVMs at Nine Elms and Tottenham Court Road due to be completed on Monday 07 August.



REVENUE PROJECTS

GATES UPGRADES



RAMPS

The main gate works currently underway are the replacement and refurbishment of worn ramps on E1 and E2. Gates and WAGs.

After some initial teething problems with the need to replace a higher than expected number of ramp sub-frames, this programme is now progressing well. At stations with the older E1 gates, Cubic are replacing the ramps on all E1 walkways, whilst for E2 Gates and WAGs, Cubic are only replacing ramps with high throughputs of where there is evidence that the ramp has become worn. Cubic are currently expecting to complete the remaining stations not yet visited by December of this year.

WAGS

The next gate upgrade programme that is scheduled to start shortly, affects our Wide Aisle Gates (WAGs) and will see all of our remaining WAGs equipped with the new style of lighter gate paddle and more durable 'ruggedised' motors and replacement paddle shafts. This follows on from an initial Vanguard of the lightweight paddles and improved motors in 2021, plus a further batch of installations that were completed last year.



This programme is currently scheduled to start towards the end of September, once engineers have been trained on this particular upgrade. This work will be undertaken during engineering hours and as usual, stations will be advised of the planned dates for their gates to be upgraded by email in the week before the planned installation date. In separate works, TfL and Cubic are looking at other ways to improve the WAG and in particular to make it more difficult for customers to use this route as a way to avoid payment of their fares.

OTHER UPGRADES

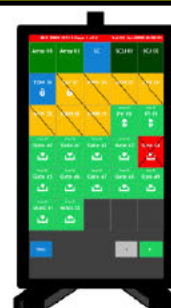
Further work is also being planned to replace components that are reaching the end of their expected life, or where existing spares are no longer being manufactured. On E1 gates it is planned to replace the Paddle Master and Slave Controllers, as these are close to being life expired. Cubic are currently undertaking engineering testing on the replacement units that are due to be installed.

The second programme will focus on the light beams which monitor the walkways on the Pneumatic Gates at Central London stations and on E1 type gates. Production of the new beam units was due to start in August with a rollout planned to take place in September. However, issues with fitting the new units have been identified and it appears a slightly different approach will be needed than had originally been anticipated. This may mean that installation work will not actually commence until the end of September.

SCU VANGUARD EXTENDED

Further to the update in TRUI45, the Vanguard of the modified SCU software aimed at ensuring devices remained 'discoverable' and could be accessed remotely by Cubic's engineering team, was successfully extended and now covers approximately 100 LU SCUs.

Unfortunately, we are not able to extend this further at this time and need to wait for a further programme which will deliver a permanent fix to this issue on the SCU and some other pieces of equipment.



CHD UPGRADE

Since our last update in TRU145, there isn't much to report towards the start of the planned Vanguard of the updated version of CHD software.

The start of the upgrade is dependent on changes being made to the TfL firewall to allow the devices using the new software to communicate with the new Pay Complete back-office.

The TfL IM contractor Capita have been issued with a variation to deliver the change for the Vanguard at two LU sites, but as all of the CHDs at Stratford are connected via modems, Capita have been asked to complete the modification for Waterloo and Kings Cross, in readiness for that station to be added to the Vanguard after the software upgrades at the first two sites have been successfully implemented.

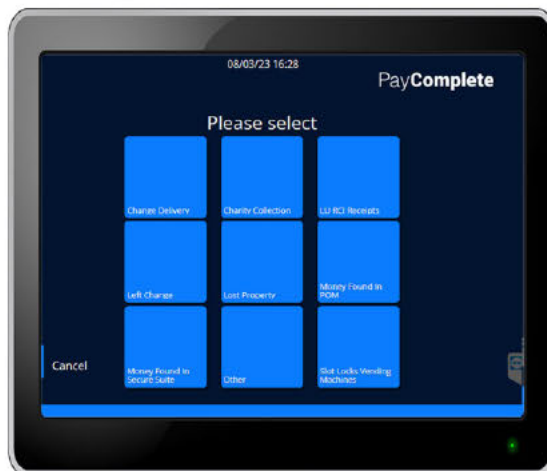


This work has been pushed back a couple of times, even though we believe that resource has been allocated to complete the work and it would appear that other projects are currently suffering similar delays in getting their work completed as well.

Although devices which are currently connected via 4G routers do not require this change to be made as they don't use the TfL IM network, we did not really want to commence the Vanguard without including a full range of device types and both modem and fixed line locations.



PayComplete



However, following a recent review with Pay Complete, it has been decided that to avoid further delay to the project, we will start the process by upgrading all three 3 CHDs at Stratford onto the new software platform and back-office system during the week commencing Monday 21 August.

The upgrades will take place during the day and requires each CHD to be emptied of cash before the PC is replaced and the new software loaded. During the Vanguard period it won't be possible for staff at Stratford to change their CHD PIN, as this facility will be temporarily blocked and will need to be undertaken on a non-Vanguard device at another station.

The current and new back-office systems will be linked so that any new users of PIN changes will be shared to both devices using the current operating system and those on the new platform.

A briefing pack highlighting the changes and new screens that staff will see is being prepared and will be available ahead of the first of the upgrades taking place.



All being well with the first upgrades at Stratford, we hope that the IM issues may have been resolved to allow the remaining CHD Vanguard devices at Waterloo to be upgraded in September. The on-going delays will, however, make it quite challenging for Pay Complete to finish the full rollout across the entire CHD estate before the end of 2023.

Watch this space for a further update on progress in our next edition of TRU.

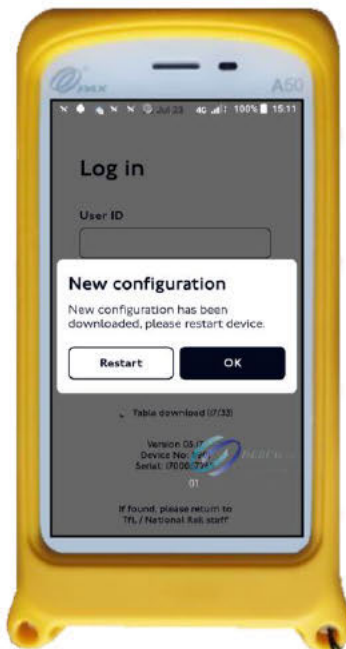
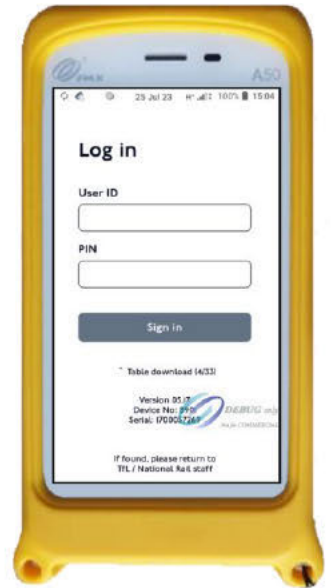
...AND FINALLY!

RID ROLLBACK

One item that arrived too late to cover in our last edition of the TRU was news that all Revenue Inspections Devices (RIDs) were to receive an enhanced software update called version 5.18 on the night of Friday 07 July.

Although the actual download went well, the following day started to see a trickle of reports from Revenue Control staff who were experiencing some of the following issues with their devices,

- *Constant freezing, glitching, sporadic log outs*
- *Screen going black*
- *Disruption during 'Manual Check Process'*
- *Device asking for reboot*
- *Unable to start RID application / Stuck on home screen.*
- *Freezing after card reading*



The same issues then started to be reported over all other TfL modes and TOCs who were using the devices.

Following a large Revenue exercise at North Greenwich station, where Cubic technicians were in attendance armed with a number of RIDs that were still on Version 5.17, the data collected seemed to indicate that the issues were mostly linked to areas where the reception / signal was weak, and the latest version software struggled with connectivity compared to the previous release.

Post-exercise, at a joint meeting between TfL and Cubic, the decision was taken that all devices would be rolled back to the previous software version.

Work would then begin on correcting the issues that had been identified and would likely be rolled out within a few weeks as a new version 5.19.

The rollback took place at 02.00 hours on Wednesday 25 July 2023 and no new issues have been reported to date.

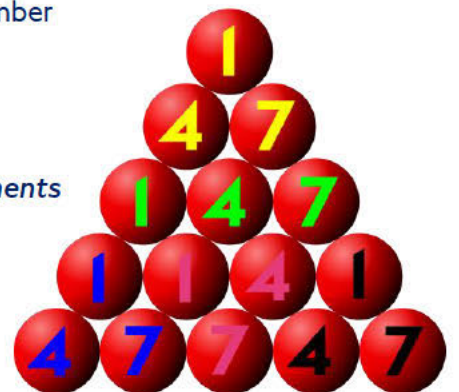
REVENUE CONTROL

LOOKING AHEAD TO TRUI47

We'll take a short "break" before TRUI47 is published in mid-September when we hope to provide you with updates on:

- *Review of implementation of September Fares Revision*
- *Further update on Project Oval*
- *Update on planned changes to the MFM and servicing arrangements*
- *News on a recent Barcoded ticketing demonstration*
- *Update on the CHD upgrade*
- *Update on other projects going on around the network*

We also intend to include more of your questions sent in to [Ask Olly](#), plus a selection of our other features.



T&R Team,