Transport for London
London Underground

UNDERGROUND

Issue 145 – May / June 2023
Ticketing & Revenue Update

Our customers have donated their Oyster cards to Railway Children - pages 8 & 9

LU had a Fares Revision on Sunday 11 June - what was in scope? - pages 2 & 3

Hammersmith & City and District lines
←Lift

↑Lift

The Oyster card is 20 years old this year - and we have a special edition card - page 4

We've found more Manual Gates to remove - page 15

Olly Oyster answers more of your letters - pages 10 & 11

MFM woes, TVM upgrades and other POM updates - pages 13 & 14

Written and compiled by **ALAN MUNDY & DAVID NIX**
Produced by the Ticketing & Revenue Team

TRU NEWS — FARES REVISION

JUNE FARES REVISION

As a result of the shifting of the traditional January Fares Revision date to March again this year, it has resulted in the May Fares Revision being pushed back by about 4 weeks from the normal date in May and now took place on **Sunday 11 June**.

SUNDAY 11 JUN 23 — FARES REVISION

Due to the much-reduced amount of time available to implement changes following the main revision in March, the scope of the fares revision was scaled down, to ensure important items can be delivered.

The main changes affected the prices of wholly National Rail (NR) Single and Return tickets and through fares to NR destinations. Unfortunately, due to the late confirmation of the fares increase at the end of 2022, we did not have sufficient time to implement all of these changes to as part of the March Fares Revision.

Since March, the prices of NR and through fares have remained at 2022 levels, although the Train Operating Companies (TOCs) increased their fares by an average of 5.9% on 05 March.

This has meant that if a customer bought a ticket from one of our POMs to a NR station, they would pay less than if they bought the same ticket to travel from the NR destination to an LU station.

From 11 June the prices of all tickets to National Rail destinations increased by an average of 5.9%, thereby bringing them it into line with the fares the TOCs were already charging. So fares have increased for some customers but only for journeys that didn't go up in March.

PAYG fares to NR destinations and Travelcard prices did not increase on 11 June, as these were increased as part of the main Fares Revision in March.

The other main changes related to the advance loading of fares data for the planned extension of PAYG acceptance on contactless payment, to a number of NR stations outside of the London Zones, as part of the DfT funded "**Project Oval**".

This will prepare the way for extensions to acceptance of contactless payment before the end of the year, although the exact stations involved and the dates from which acceptance will be implemented are not confirmed.
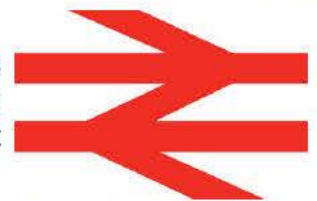
Further to our update in **TRU144**, it should be noted that although physical reader installation works have been completed at many sites and fares data loaded in readiness, it is not necessarily confirmed that these sites will definitely be included within the first stage of Project Oval.

The later delivery of the fares revision will mean that the period of time before the next fares revision, which is scheduled to take place in September, has also been reduced by about 4 weeks.

As a result, it is possible that the scope of that fares revision may also be reduced, although there are changes that TfL are considering, that we are likely to want to make before the next main fares changes in 2024 (whenever that might be?). Further information will be included in TRU146.

STAFF FARES LISTS

As a result of the changes to the prices of fares to NR destinations outlined above, new versions of the Staff NR Fares List were uploaded on **Friday 09 June** and are available by [clicking here](#).

The fares list for your station should be downloaded and saved and previous versions with 2022 fares deleted to avoid any confusion.

Please note that the Staff Fares list for TfL journeys issued in March remain valid, as these fares are not changing.

INCORRECT FARES ON POSTERS

A number of months after the last fares revision, the T&R team suddenly received a number of reports from different stations concerning promotional posters that were on display which were showing incorrect fares information. These were supposed to have been removed / replaced at the start of March.

So far we have not been able to establish how these came to be on display, but it is unlikely they have been in place since March and then suddenly highlighted by different people.

✔ New posters	GET-TOGETHERS — Travel in Zones 2-6 for £2.10 off-peak	GOING OUT OUT — Unlimited trips all day long for £8.10, with our daily fare capping in Zones 1-2.	OPENING NIGHT — Travel within Zone 1 for £2.70 off-peak	Nabbing A Bargain — Make unlimited bus trips all day long for £5.25, with our daily bus fare capping.
✗ Old posters	GET-TOGETHERS — Travel in Zones 2-6 for £1.90 off-peak	GOING OUT OUT — Unlimited trips all day long for £7.70, with our daily fare capping in Zones 1-2.	OPENING NIGHT — Travel into Zone 1 from £2.60 off-peak	Nabbing A Bargain — Make unlimited bus trips all day long for £4.95, with our daily bus fare capping.
Remove if displaying…	£1.90	£7.70	£2.60	£4.95

This is just a sample of posters that are on display. All posters for all modes should also be checked.

Replacement poster requests should be sent to the email address below quoting the name of the poster required ███████████████cdllogistics.com.

TRUNEWS

OYSTER 20TH ANNIVERSARY CARDS

As outlined in **TRU144**, a further limited edition Oyster card is due to appear shortly, commemorating the 20th anniversary of the launch of Oyster.

Unfortunately, as often happens, just after we went to print, it became apparent that the delivery of the new stock to the designated stations had been put back from May to week commencing **Monday 19 June**.

The stations listed below, have been prioritised for early delivery and they should therefore receive their stock during the first week of deliveries.

Stock will then be supplied to all other LU stations within Zone 1 in the following weeks, rather than only to a small number of sites as the article in **TRU144** implied.

The initial batch of LU stations to receive the commemorative stock will be.

VICTORIA	EUSTON	FARRINGDON	KINGS CROSS	LIVERPOOL STREET
PADDINGTON	TOTTENHAM CRT RD	LONDON BRIDGE	BOND STREET	WATERLOO

This issue of 300,000 cards is the smallest limited-edition batch of standard cards released, so although that sounds like an awful lot of cards, they will probably be used up fairly quickly. So Oyster card collectors will need to get in quickly.

> **Please note** – As with previous Limited-Edition cards, stations are requested to start using these cards as soon as they are received and add them to the Oyster card dispensers in the AFM / MFM and TVM.

V&C BAG ISSUES

G4S have recently highlighted that a number of stations have remitted cash within a yellow V&C multi-safe bag, which then results in these bags being routed incorrectly and a delay in these items being processed.

> **Please note** – Yellow V&C bags should only be used for V&C items and should never be used to remit cash.

If invalid cash or notes or coins that are not accepted by the CHD need to be remitted, then these should be placed in a normal muti-safe bag.

The bag should be clearly marked to indicate the contents and if no Cash transportation Sack is available, these can be placed within the V&C Transportation Sack when this is manually created.

Further details can be found in **T&R Book 4 – Secure Suite Procedures**.

COLLECTION ISSUES

TRUNEWS

PayComplete
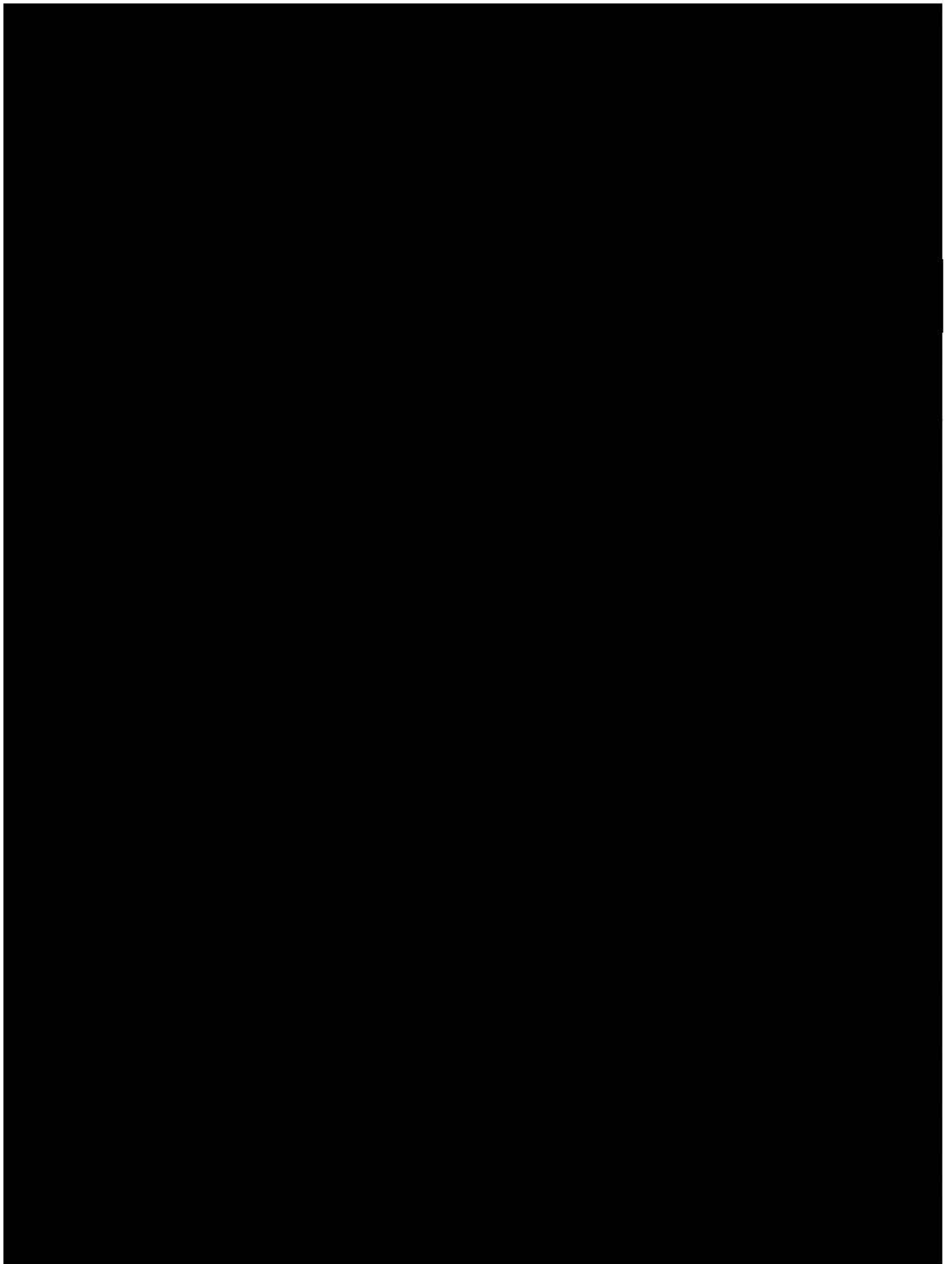
THAT REALLY IS TOO MUCH INFORMATION

In previous editions of TRU, we have highlighted concerns over a recent spate of Cash Handling Device (CHD) PC failures.

The forthcoming programme to move all of our CHDs onto a new software platform will see all devices fitted with brand new PCs. However, ahead of this rollout, we have recently taken some steps to improve performance and try to ensure that all of our devices can keep going until it is their turn to be upgraded.

We recently identified that CHDs had been storing all detailed transaction data since they were installed. This means that most devices have 6 or 7 years' worth of information stored on them. That is an awful lot of data!

Although we need to retain data in case there is a need to retrieve it at a later date, we don't need to keep it forever.

Therefore, we have recently agreed to reduce the length of time this detailed transaction information is retained and have issued a variation to Pay Complete to enable them to remove old data from each device, which will hopefully free up a large amount of disk space.

Our concern is that excess data being stored may hinder the CHD's ability to recover itself after a power failure and almost certainly will slow down the speed of the device and its performance.

Pay Complete recently started a pilot programme of reducing the amount of data stored on certain devices.

In the first batch of stations where data reduction has been completed, a large volume of transaction files and data have been successfully removed and this should hopefully improve the speed of the device, as well as potentially avoiding some of the device PC failures we have seen recently.

The first stations where data has been reduced, included the earliest CHD installations at Acton Town, Euston, Gloucester Road and Hendon Central, which were all part of the original CHD trial and Vanguard dating back to 2016.

They had therefore accumulated the most amount of data, as illustrated in the table below.

Station	Files Removed	Data Removed	Station	Files Removed	Data Removed
ACTON TOWN	28971	7.89 GB	GLOUCESTER ROAD	24280	7.56 GB
EUSTON	41220	7.26 GB	HENDON CENTRAL	27220	5.63 GB

This will generally be done remotely on devices that are connected via a 4G router and to minimise the impact and potential disruption, we have asked for this to be scheduled in the late afternoon / evening, when CHDs are used less frequently and there are no scheduled cash collections.

The T&R team will advise stations in advance of the planned work and confirm the times during which the CHD will not be available for use.

All being well with the first pilot stations, we will then hopefully be able to commence a programme to reduce data on other CHDs from the end of June, ahead of the CHD software rollout (outlined on **Page 12**).

BARCODE TICKETING UPDATE

One of the on-going hot topics in our correspondence continues to be on the topic of barcode or QR code tickets.

Post pandemic and with the opening of the Elizabeth line through central London, there has been a huge growth in this form of ticket for NR journeys to London, as the Train Operating Companies (TOCs) seek to replace their outdated magnetic stripe tickets.

As previously reported in **TRU138**, there are no LU gates that currently have the capability of reading barcode format tickets and although work is progressing towards a planned implementation at some key sites where we directly interface with NR services, progress has been very slow.

Cubic have been commissioned to undertake a design study to review two potential options that could be implemented at certain LU stations:

TOC Solution	*to replicate the system already in operation at many NR situations. This would effectively sit outside the current Revenue Collection Contract (RCC) between TfL and Cubic.*
TfL Option	*the implementation of a solution by Cubic within the terms of the RCC*

Current estimates are that the first physical barcode reader installations on LU gates would possibly not be for 12-18 months, whilst the necessary development work and testing is undertaken.

As an interim "stop-gap" measure we are currently looking at alternative options for handheld barcode reading equipment, which a number of TOCs are already using successfully.

Although this will not provide a solution that opens the gate for the customer, it would at least allow gateline staff the ability to check the validity of barcodes presented to them by customers.

Hopefully the delivery of this interim solution for the highest priority locations will be a lot quicker than for the fixed readers and we are hoping that we will shortly be able to test this type of solution at one of our sites.

Further updates on this will be included in future editions of TRU.

ARRIVA RAIL LONDON ACCOUNTING UNIT

One extra piece of news affecting RSLU stations, is that the station accounting unit for Arriva Rail London has relocated from Watford Junction.

From **Thursday 15 June**, all Document bags and Correspondence remitted by these stations and collected by G4S, must be addressed to,

ARRIVA RAIL LONDON, PALESTRA, BLACKFRIARS BRIDGE ROAD

children RAILWAY
Fighting for street children

ANOTHER OYSTER MILESTONE REACHED

We recently made a presentation of a further payment to our nominated charity Railway Children of money donated by our customers from Oyster cards they no longer require.

The latest payment of **£16,711.01** represents the total donated via our POMs over the last six months, between **13 November 2022** and **29 April 2023**.

+ £150,000

This payment was slightly down on previous donations, which had each been of amounts of around £20k.

This is primarily down to a couple of main factors;

> *The period since the last payment covered 6 months, whereas previous payments had been accumulated over a period of seven months.*

> *The impact of fewer customers using Oyster and the card fee no longer being refundable. Although we are still seeing a number of older cards with deposits being donated, the vast majority of cards donated no longer have the deposit and the average amount donated per card, is therefore much lower than it used to be.*

The latest payment was handed over to Dave Ellis, Corporate Partnerships Manager of Railway Children, at the recent Railtex exhibition held in Birmingham.

Dave Ellis told TRU,

"The latest fantastic donation of £16,700 will once again make such a difference in the lives of so many children, but what is so incredible, is that since the automated Oyster Donation scheme launched with support from Cubic, 36 months ago, over £150,000 has been raised.

We also know that the children and young people we help in the UK are sometimes more 'hidden' and less obvious than many of those we help in India and East Africa.

Therefore, working in partnership with the British Transport Police and Train Operating Companies, our work has evolved to meet the changing needs of children and young people.

The incredible support across London Underground and the TRU team specifically has certainly helped us to develop this, where our ultimate aim is to ensure that every vulnerable child is protected and supported.

With this in mind, we therefore hope many of you will also watch the recording on you tube (Click here) , of our recent Q&A session which we held with our project team.

They were asked questions from the audience ranging from how we identify children at risk, exactly what support we provide to young people and what is the toughest part of the job for our project workers, and we hope that you all at LU are incredibly proud of the role LU are also playing in helping us to meet the needs of these children, each and every day!!"

ANOTHER OYSTER MILESTONE REACHED

This is the sixth payment made to the charity since the facility to donate the proceeds from Oyster cards to charity via our POMs was introduced in March 2020 and as Dave has mentioned, brings the total donated so far to over £150k. The previous amounts donated are shown in the table below.

The largest proportion of the money donated has come via POMs at LU stations, but smaller amounts have also been donated via TVMs at Heathrow Terminal 5 and London Buses bus stations.

The breakdown of the donations across the participating modes was as follows:
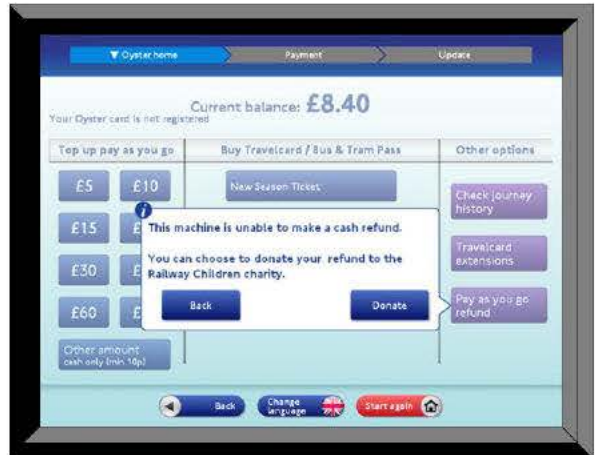
Payment date	LU POMs	Bus TVMs	T5 TVMs	Grand total
August 2020	£ 40,329.14	£77.07	£55.90	£40,462.11
February 2021	£ 27,800.15	£120.97	£104.34	£28,025.46
September 2021	£ 21,834.86	£96.52	£100.56	£22,031.94
April 2022	£ 21,038.47	£148.72	£435.55	£21.622.74
November 2022	£ 19,740.79	£200.45	£1,279.65	£21,220.89
April 2023	£15,488.41	£138.60	£1,084.00	£16,711.01
Total	£146,231.82	£782.33	£3,060.00	£150,074.15

Donations to Railway Children continue and each week we are seeing customers donate around £600. This money will be accumulated towards the next payment to charity, which will probably take place towards the end of this year.

The latest breakdown of payments (per period) from LU POMs are shown in the table below.

Period date	PAYG	Deposit	Total
P9 – 2022	£1,472.75	£931.00	£2,403.75
P10 – 2022	£1,800.70	£1,020.00	£2,820.70
P11 – 2022/23	£1,518.51	£1,032.00	£2,550.51
P12 – 2023	£1,619.56	£992.00	£2,611.56
P13 – 2023	£1,331.67	£1,031.00	£2,362.67
P1 - 2023	£1,718.22	£1,021.00	£2,739.22
Total	£9,461.41	£6,027.00	£15,488.41

NAME & ADDRESS CHECKS

The procedural changes we recently brought in to manage the supply of Inability to Pay Fare and ROLT / ROLMP forms, also highlighted that the ITAL Name and Address checking service had not been updated for some time.

We are pleased to report that this has now been completed and all missing CSM and CSS grades have now been added.

In order to complete a name and address check, a CSM / CSS needs to call **Auto 1803** and supply their name and 7-digit employee number.

Once approved, ITAL will then ask for the customer's details and confirm if the person is registered at the address supplied.

Ask Olly
T&R Team
Zone R2,
1st Floor
14 Pier Walk
London SE10 0ES

INTERNAL MAIL

From:
Sent: 27 April 2023 15:10
To: Ask Olly
Subject: Inability to Pay Fare?

Hi Olly,

When using the new Inability to Pay Form:

What price system do we use? Paper ticket prices or Oyster / contactless prices?

Many thanks.

TURNHAM GREEN

Hi

Thanks for your email and question

You should record the Single ticket fare for the journey the customer needs to make, as that is what they would have had to pay in the absence of an Oyster card or contactless payment options.

It is probably a point that we need to reinforce when we update the text in the T&R Books, to avoid any confusion.

Regards

Olly Oyster

From:
Sent: 18 April 2023 09:46
To: Ask Olly
Subject: Inability to Pay Fare forms

Hi Olly,

May I ask, how should we check I.D and addresses when issuing the new Inability to Pay Fare forms?

Vulnerable people e.g. children under 16 and victims of crime are unlikely to have I.D on them.

Kind regards

HIGH BARNET

Hi

Thank you for your email and query.

If the customer does not have any ID, then Supervisors and CSMs should be able to use the name and address checking facility provided by ITAL, by calling

In the case of children under the age of 16, whose details may not be included in the sources used to confirm name and address details, it is likely that their parent or guardian will be listed as living at the address given.

We are currently in the process of updating the authorised users list provided to ITAL to ensure current staff have access to this facility, as it has recently come to light that some people that have been promoted to these grades have not been added to the database.

Hope this answers your query.

Regards

Olly Oyster

From ▓▓▓▓▓▓▓▓▓▓
Sent: 15 April 2023 18:31
To: Ask Olly
Subject: Contactless Payment for Multiple customers

VICTORIA

Hello Olly,

I know this question has been asked in TRU144, but I would like to explain this question further, so we can get to the bottom of this confusion.

What will happen if.

- A customer uses his / her contactless payment for more than one person, payment will be use as explained below:
  "Customer touches his / her contactless payment once to let a person in, then waits for few minutes (as touching the same payment type to soon will encounter code 21 on entry and 22 on exit) and touches the same payment type again to let another person in and another in again,
- And then uses the same payment type to exit and touches out the same way (giving few minutes space for each touch) as they had used it to touch in?"

Will that customer be charged accurate fares, (2 single fares for 2 persons and / or 3 single fares for 3 people) or it is going be maximum fares for each touch in and out each time?

Kind Regards,

▓▓▓▓▓▓▓▓▓▓

Hi ▓▓▓▓▓▓

Thank you for your email and further question on this topic. The important point to remember is that contactless payment, like Oyster can only deal with one current journey, so 2 or 3 customers cannot travel on the same card.

In the scenario you have outlined, the third entry validation and the first exit validation will complete a journey and result in a charge for the fare for that journey. The first and second entry validations will be recorded as unfinished journeys as the next event is a further entry. Similarly the second and third exit validations will be recorded as unstartled journeys, as the previous event was an exit validation.

Each of these incomplete journeys would therefore attract a maximum fare being charged.

Regards

Olly Oyster

From ▓▓▓▓▓▓▓▓
Sent: 29 March 2023 17:02
To: Ask Olly
Subject: Incomplete journeys

MARBLE ARCH

Hi Olly,

Can we or can we not resolve an incomplete journey on an Oyster card? I used to do it, but I thought it was no longer allowed, however, I see it being done.

Regards,

▓▓▓▓▓▓▓▓

Hi ▓▓▓▓

Thank you for your further email and query. Incomplete journeys on Oyster cards can only be resolved by staff in very restricted circumstances.

The incomplete journey must have occurred within the last 48 hours and must be as a result of either:

- A customer error at the station concerned (e.g. customer touching in / out when in possession of a valid magnetic ticket)
- A known incident (e.g. a power failure of failure of validation devices at a station)

Regards

Olly Oyster

REVENUE PROJECTS

CHD Software Vanguard

Unfortunately, we are still waiting for a confirmed start date for the Vanguard of the new CHD software.

Although we have new PCs available to upgrade all of the larger Category "A" devices and have now identified enough spare Category "B" PCs to upgrade devices at the two Vanguard stations, we have been prevented from starting the Vanguard by the need for some IM network changes to be made.

A configuration change is required to allow each CHD to communicate with the new 'back-office'. This is work that needs to be undertaken by TfL's IM contractor Capita. Unfortunately, our experience in their performance in resolving issues with CHDs that need to use fixed line IM connections, has not been good.

So, it is very frustrating for the Vanguard to be held back on this front. Hopefully these issues will be resolved shortly and enable the Vanguard to commence in late July, only 6 months later than we had originally hoped!

In the absence of progress towards starting the Vanguard, we have recently made progress on planning the actual rollout of the software, which will follow on from the Vanguard.

PayComplete will be completing these upgrades in geographical batches of about 20 devices per week and we will shortly be approaching areas, with a view to identifying suitable storage locations for the new PCs to be delivered to and stored until they are ready to be installed later that week and also to temporarily store the old PCs until they are collected at the end of the week.

It is likely that this will need to be a room within the secure suite, to ensure the security of these items.

The plan is to install the new software in batches, starting with the outer sections of each line and covering the central London area towards the end of the programme. All being well, once the rollout starts, we should be able to upgrade all of our CHDs within a period of about 14 weeks.

Is an End to our Sticky Sticker Situation in Sight?

We are now in the final stages of making changes to the supply of stickers for all our POMs and Gatelines.

Two standards have recently been approved, detailing which stickers go on which device and where they need to be applied.

- The first is for the different types of POMs and are included in the TfL Ticket Machine Graphics Standard (issue 2).

- The second covers all of our different gate types, which are included in the TfL Gateline Graphics Standard (issue 5).

The key change is that instead of having two suppliers, going forward we will now only have stickers supplied by Cubic, making it easier to place an order.

We have also removed the supply of the Tube map sticker, as we found that these were being applied to all POMs, were costly to produce and not all that easy to read.

We will supply more information in our next issue of the TRU.

MFM WOES CONTINUE

We continue to suffer a high level of note jam related problems on the new Pay Complete Note Handling Units (NHUs) in our MFMs, which have led to a number of fault escalations via the **Ticketing Escalation** mailbox over the last few weeks.

Cubic are continuing to investigate the cause of these issues and to identify potential changes which may improve performance.

The first of these changes will see a further update of the MFMs to replace a PSU relay in the device. The impact of this will be to prevent the NHU from being reset, as examination of failures which have occurred, has identified this as being an issue if a note is actually stuck within the mechanism.

Following the completion of the recent programme to replace the battery within the Uninterruptable Power Supply unit (UPS) in all of our MFMs (as outlined below), the Cubic installation team are due to commence this further upgrade from **Wednesday 07 June**.

This will again be undertaken during the day, to minimise disruption and will not require the device to be emptied of cash

Later in the year, we will be looking to deploy a further new version of MFM software, which will hopefully improve the ability of station staff to clear some jams, that they are currently unable to clear.

This will however, require some changes to processes and the procedures to be followed when a note jam does occur.

It currently looks as if a potential Vanguard of these changes may be available towards the end of July, then all being well, a potential rollout towards the end of the year.

Further information on these changes will be provided in future editions of TRU, once testing of these changes has been completed.

MFM UPS REPLACEMENT COMPLETED

Some good news is that the recent programme to replace the Uninterruptable Power Supply (UPS) unit battery in all of our MFMs was completed on **Thursday 18 May**.

This should hopefully ensure that in the event of a power failure, each MFM will be able to power down safely using the power from the UPS battery and prevent any loss of data.

A follow-up programme that will see the replacement of the UPS battery in each of our AFMs will follow in due course, once the performance of the newly updated MFMs has been monitored for a while.

COMPLETED ✅

REVENUE PROJECTS

POM BANKCARD PACK – UPDATE

In **TRU144**, following an initial Vanguard on devices at Euston, we had been looking towards expanding the deployment of a new POM Bankcard pack to a number of other stations, ahead of a full rollout to all POMs.

In our article we mentioned that Cubic had seen an increase in very short duration errors on the PEDs (Chip & PIN units) on the Vanguard devices at **Euston** and this had been referred to Barclaycard who had provided the new bankcard pack software, for them to investigate.

After an extended wait, it has recently been confirmed that there is an issue within the new bankcard update pack and a new version is due to be supplied to Cubic by Barclaycard shortly.

As a result, this Vanguard will not be extended, and we will therefore be reverting the Vanguard devices at Euston back to standard bankcard pack software. This needs to be done as, before the end of July a further PED upgrade is required to update the security certification held within the PED on all of our POMs, with a new certificate. If not completed they will not be able to process bankcard transactions.

This new bankcard software is scheduled to be Vanguarded on a number of POMs from **Thursday 15 June**. The devices selected are the same as used for the previous bankcard pack rollout. Following this and successful deployment Cubic will be testing a further version of the POM bankcard pack. We will then restart the process of vanguarding this and then extending the deployment to other sites as we had originally hoped to do in April.

TVM NHU FIRMWARE UPGRADE

Following the last change to the Note Handling Unit (NHU) firmware on our TVMs, to prevent acceptance of the paper version of the £20 note following its withdrawal, Cubic have identified an increase in the level of reported note jams on TVMs across the TfL estate.

We have had very little feedback from LU and RSLU sites around any increase in actual note jams, or customers losing money in these devices, so it is possible that these reported jams may actually be 'ghost events' caused by a timing issue within the device. Nevertheless, we still need to resolve this issue and return to the stability we had before the last firmware upgrade took place.

Cubic have now received and tested an updated version of the firmware that the NHU manufacturers believe has resolved the previous issue. This new firmware was deployed to the LU TVMs listed below as a Vanguard which started on **Thursday 28 May**.

Ticket Halls		
MOORGATE (Met)	STRATFORD (Mezzanine)	WHITECHAPEL

These devices are the same machines as we used for the previous upgrade, and they will now be monitored by Cubic over the coming weeks to confirm that the number of reported note unit faults on these devices has reduced as expected.

Once we have assurance of this, we will then look to deploy the new firmware progressively to all other TVMs which requires an engineer to visit each machine to load the new firmware from a laptop. These visits will be undertaken during the day and as it is a fairly quick process and does not require the TVM to be emptied of cash before the engineer updates the firmware, it should not cause much disruption to customers or staff.

With the forthcoming launch of a new set of bank notes carrying the image of King Charles III, there will be a need for a further TVM firmware change later in the year, so that these notes can also be accepted.

REVENUE PROJECTS

MANUAL GATE REMOVALS – AN EXTRA LAP?

Just as we thought we had passed the chequered flag and completed the replacement of all the remaining non-Cubic Manual Gates, following the replacement of the Manual Gate at Temple, as outlined in **TRU144**, it appears that the project isn't quite finished after all!

Following a query from the team at **Canada Water**, concerning an issue with a panel within the gateline, we discovered that the issue was due to the presence of a very non-standard Jubilee Line Extension (JLE) Manual Gate.

This then raised some suspicions about other JLE sites and following a recent survey by Cubic, we have identified further sites where these gates are still in place, often very heavily disguised.

CANADA WATER

CANARY WHARF
(East)

Not only had these been missed in the original station surveys undertaken at the beginning of the Manual Gate project, but they also did not appear within the Cubic asset register.

So, we have some further work to do and Cubic are currently arranging for some additional fixed glass panels, which they will then install in place of these JLE Manual Gates. It looks as if we have at least another lap to go, before we finally see that chequered flag again!

WAG PADDLE AND MOTOR UPGRADE

In **TRU144**, we reported on the successful completion of a retrofit of metal blocks within a number of WAGs that had been fitted with the new light weight paddles and new motors, as part of a pilot of some improvements to these gates.

The next stage of the project should see the start of a rollout of the new style paddles and ruggedised motors to other WAGs. Necessary components have been on order for some time, and we are now hopeful that an installation programme will start towards the end of August.

The changes should hopefully prolong the life of the gate motors and reduce the level of faults we have been seeing. In parallel with this, as part of a TfL Fraud reduction exercise, a team are looking at other options to improve the performance of the WAG and reduce the potential for customers to avoid their fare through exploiting current deficiencies within the WAGs. Again we will provide further information on this as details are firmed up.

A FURTHER GATE UPGRADE ON THE HORIZON

In addition to the forthcoming replacement of WAG paddles and the current programme to replace metal ramps on both E1 and some E2 gatelines, Cubic are also in the process of planning a further gate update, this time focusing on the replacement of gates beams on both the oldest pneumatic gates in Zone 1 and also on the first generation E1 electric gates.

Deployment of this programme was scheduled to start in mid-July, but there is an indication that this may be slightly delayed and not now commence until sometime in August.

...AND FINALLY!

SCU SOFTWARE UPDATE

Further to our last update in TRU 143 and TRU 144, since 17 March we have been Vanguarding a solution to the issue which had caused a number of SCUs to randomly become non-contactable remotely. All of the SCUs at the stations listed below, have been fitted with new software which should prevent this loss of connectivity.

HARROW ON THE HILL	KINGS CROSS	LONDON BRIDGE
PADDINGTON	SHEPHERDS BUSH MARKET	SHEPHERDS BUSH
	VICTORIA	

Following a period of monitoring during which these devices were regularly checked by Cubic to ensure they could still be accessed remotely, we had hoped to be able to extend this solution to all other SCUs.

Unfortunately, we have since learned that the solution originally proposed cannot be deployed across the network, due to another project involving an upgrade to a wider range of devices than just the SCU.

As a short-term measure to improve the situation ahead of delivery of a 'final' solution, Cubic have agreed to the planned expansion of the current Vanguard to embrace a total of about 100 SCUs. This will involve the expansion to the following additional locations.

Station	No	Station	No	Station	No
BOND STREET	6	HEATHROW T2&3	6	LIVERPOOL STREET	7
MOORGATE	6	STRATFORD	6	WATERLOO	7

SORRY FOR THE DELAY...

Normally we would look to send out an issue of the TRU in advance of each fares revision and were on track to do the same with this edition.

However, in the run up to publishing TRU144, we became aware of a number of issues with the TRU template, which we have used for years without issue, but was now behaving oddly and had developed a number of glitches affecting this and all new templates created using the original formatting.

Therefore, this edition has been brought back to basics in order to get the information out, whilst we fix the other issues.

Hopefully, you haven't noticed too much, but we are still sorry for the slight delay.

LOOKING AHEAD TO TRU146

We are planning to publish our next edition of TRU towards the end of July (production issues permitting) and plan to include:

- ➤ *Preview of changes planned for the September Fares Revision*
- ➤ *Update on planned POM changes*
- ➤ *A further update on MFM reliability improvements*

Plus updates on a number of other current and planned projects, the latest T&R news items, and a further selection of your queries to Ask Olly.

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