

TRU NEWS – THE LATEST FROM THE WORLD OF T&R

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# PROJECT UPDATES

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TRIVIA – Pages 2, 6 & 9 ([Answers on Page 11](#))

# **ANOTHER FARES REVISION...**

Rather like the popular saying about buses, it appears that we don't have a fares revision for a long while and then two come along together!

The delay to this year's main fares revision resulted in two fares revisions a mere two months apart, with the January changes being implemented two months late on Monday 01 March and then



Similarly, this edition of the T&R update provides details on two fares revisions, where we provide you with a review of the May changes on Pages 2 & 3 followed by a summary of the planned changes for the forthcoming September Fares Revision on Pages 4 & 5.

As time was short to get information for the September Fares Revision out to stations, we have had to reduce the size of this edition to a slim-line 12 pages instead of the usual 16-20 and have parked a number of our usual features, letters and news items until TRUJ 34.

**OTHER KEY STORIES INSIDE**

**Page 6**      **OYSTER WEEKLY CAPPING**

**Page 8 MFM NHU UPGRADE**

Page 9 E1 GATE UPDATES

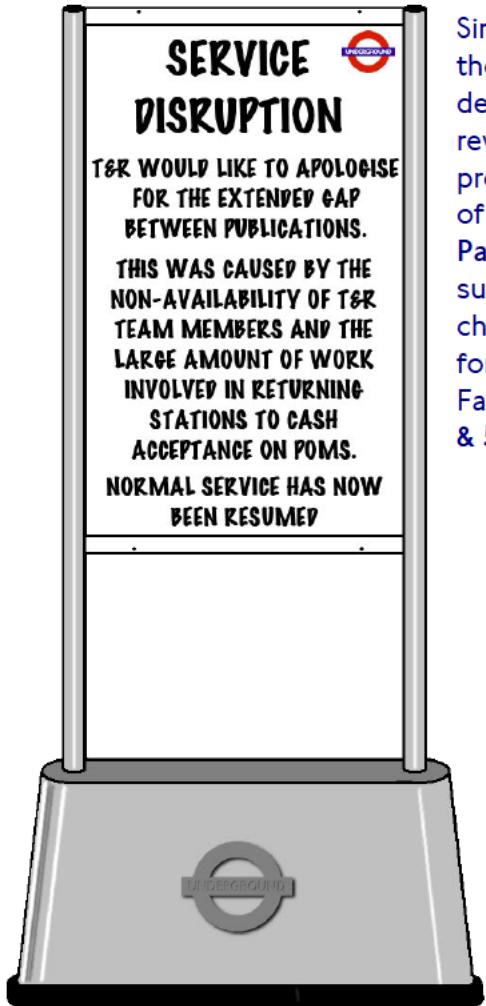
We provide information on the start of a long-awaited programme to upgrade our EI gates.

Page 10 GATE CHANGES

*Updates on the current trial of a new type of gate paddle and progress to resolving an issue with PODs on the older pneumatic gates in Zone 1.*

Page 12 CHD PROBLEMS

We outline some of the issues that have hampered our CHDs since stations returned to cash acceptance.



## **Written and compiled by**



# MAY FARES REVISION

## ANOTHER SUCCESSFUL REVISION COMPLETED

The delay to the publication of this edition of TRU, means that instead of presenting our normal fares revision preview in the run up to the fares revision and then reviewing what went well and what didn't quite go to plan in the next edition after the revision, we are instead retrospectively looking back to the changes that took place on Sunday 16 May.



This year's May Fares Revision came very much 'hot on the heels' of the delayed January Fares Revision which eventually took place at the start of March. The short gap between these two events very much impacted on the time to prepare the necessary changes and associated fares tables, so the scope of the May Fares Revision was probably less than might have been the case in previous years. A number of items were deferred and have been added to the scope of the forthcoming September Fares Revision.

### KENNINGTON STATION ZONE CHANGE



In preparation for the forthcoming opening of the Northern Line Extension and two new stations at Nine Elms and Battersea Power Station (both of which will be within Zone 1), Kennington was moved from being a Zone 2 station, to become a boundary Zone 1&2 station on Sunday 16 May.

As a result of this change, PAYG fares between Kennington and stations in Zone 1 were amended accordingly. Staff fares lists covering LU journeys were updated and reissued to take account of these changes.

### FARES NOT SET BY TFL

From Sunday 16 May, there were a number of changes to fares which are set by the NR Train Operating Companies (TOCs).



The main changes were to NR only and TfL/NR through fares which are set by London North Western Railway, as these were submitted after the cut-off date and too late to be included in the delayed January 2021 Fares Revision. There were also some other changes to fares set by other TOCs.

### AN END TO ISSUING FIRST CLASS TICKETS

From Sunday 16 May, POMs at LU stations that previously had the facility to issue First Class tickets for certain NR journeys, were updated to remove the facility to buy First Class NR Point-to-Point Single and Return tickets.



**Part 1 – With recent talk about cash versus cashless, we thought it would be good to ask you some questions on our coinage...**

**Q1) ...on what date did the first decimal coins "New Pence" become legal tender in the UK?**

A 01 January 1969

B 28 March 1970

C 15 February 1971

D 31 August 1972



Answers on Page 11

# MAY FARES REVISION

## ANOTHER SUCCESSFUL REVISION COMPLETED (continued)

### CAPPING EASEMENT CHANGES

A small number of stations on the fringes of the zonal area, have what are known as 'easements' which allow customers to travel slightly before the normal 09.30 start time for 'Off Peak' travel. This is generally implemented at stations with low frequency train services, to allow customers to board a train before 09.30 hours Monday – Friday and still get the benefit of it being treated as an 'Off Peak' journey.

In the May Fares Revision, an Off-Peak capping start time of 09.20 hours was implemented for customers travelling from Hertford North.



### DATA FOR PLANNED CHANGES

Certain changes can only be made at the time of one of the three fares revisions scheduled each year. As a result, it is necessary to make certain changes in advance of their planned introduction. Particularly if the next fares revision date would potentially be too late.



In preparation for the planned introduction later this year, of a ferry service which will provide an alternative way of crossing the Thames whilst Hammersmith Bridge is closed, a new location Hammersmith Ferry (NLC 0185) was added to the ticketing system.

During the period that it was not possible for pedestrians to walk across the bridge, customers who previously travelled by bus between Barnes on the south side of the river and Hammersmith, on the north side, had to contend with a fairly lengthy diversion, to cross the river at either Chiswick or Putney Bridges.

The proposed ferry service will effectively act as a 'bus replacement service' and it is planned to charge PAYG fares on the same basis as are currently used on TfL's tram services.

Journeys will be covered by the current 'Bus Hopper' and daily Bus & Tram cap arrangements, so customers making longer journeys that would have previously used the bridge, should not be penalised financially.

### WHAT WENT WELL? – WHAT WENT, NOT SO WELL?



As stated, following on from a very successful fares revision on 01 March, the revision on Sunday 16 May was again another fares revision which went extremely smoothly, with no devices failing to switch to their new tables or requiring a technician to attend.

Testing undertaken by the TfL Tech & Data testing team did not detect any issues with the changes, on the morning of the fares revision or on the first weekday on which peak and Off Peak fares applied.



However, following the fares revision it was subsequently discovered that a change to a base data table had resulted in magnetic tickets issued by POMs at a number of LU stations to the NR destinations listed in the table below, failed to work the gates when the customer attempted to start their journey.

This issue was quickly identified and after initially loading an updated table to West Ham, the worst affected station, the fix was then deployed to the other affected stations.

Ashford International	Basildon	Bourne End	Chalkwell	Cookham
Furze Platt	Henley-on-Thames	Leamington Spa	Marlow	St Pancras International
Shepreth	Shiplake	Tilbury Stations	Wargrave	West Horndon
	Westcliff	Whittleford Parkway	Wivelsfield	

# SEPTEMBER FARES REVISION

## SEPTEMBER FARES REVISION

This year's September Fares Revision will take place on Sunday 05 September. As in previous years the planned changes aren't as major as those that are normally scheduled for the main fares revision, which normally takes place on 02 January.

The following changes are included in the forthcoming fares revision package:



### FERRY RENAMING

Following on from the changes made as part of the May Fares Revision (as outlined on Page 3), the newly added location Hammersmith Ferry (NLC 0185) will now be renamed Hammersmith Pier.

A further location, Barnes Pier (NLC 0186) will be set up as an additional site in the ticketing system for the new pier on the south side of the river. Both of these changes are being made in preparation for the commencement of ferry services later this year.

We understand that although Hammersmith Bridge has recently re-opened for pedestrians, the ferry service will still be provided as an alternative method of crossing the river, as part of the financial settlement between the Government and TfL.

### REMOVAL OF OUT OF STATION INTERCHANGE

The Out of Station Interchange (OSI) which had been in place between Woolwich Arsenal (NR) and Woolwich Arsenal (DLR) stations will no longer be in place.

The facility had been added whilst a 'one-way system' had been in operation to maintain social distancing between customers, which resulted in interchanging customers having to leave the station and re-enter through another gateline to continue their journey.

Although part of the September Fares Revision changes, this change was actually implemented early by Cubic on Sunday 18 July 2021.

Any customers that now exit either station and then re-enter through the other gateline, will have their travel treated as two separate journeys, rather than both parts being treated as a continuous journey, as had previously been the case.

### NR FARES CHANGES

Although we do not normally change any of the fares that are set by TfL at either the May or September Fares Revisions, other train operators can change the fares they are responsible for setting at these fares revisions. In the May Fares Revision, London North Western revised a number of their fares, including those covering journeys to and from Watford Junction.

As part of the fares changes on Sunday 05 September, a small number of fares for wholly NR journeys or for through journeys between LU and NR stations will be revised.

This time round, the changes mainly affect through fares to Great Western Railway stations on their branch lines which run off of the main Great Western mainline in the Thames Valley.



- Slough – Windsor & Eton Central
- Maidenhead – Marlow
- Twyford – Henley on Thames



Although customers can currently use contactless payment to make PAYG journeys to stations on the mainline which is served by TfL Rail services to Reading, contactless payment is not currently available at any of the stations on the above branches.



# SEPTEMBER FARES REVISION

## ITSO CHANGES AT GUNNERSBURY & KEW GARDENS

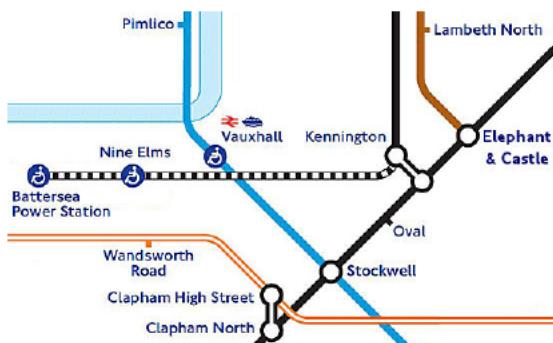
As part of the fares revision, changes will be made to ITSO settings at both Kew Gardens and Gunnersbury stations on the District line Richmond branch, to allow products loaded on ITSO cards to be accepted at these stations.

This change is being made to address a problem previously highlighted by customers using these two stations. It transpired that a previous change that had been implemented to allow acceptance of ITSO products across the London Overground network, had not included these two locations.



## FINAL PREPARATIONS FOR NORTHERN LINE EXTENSION

The new Northern line branch between the existing line at Kennington and Battersea Power Station is scheduled to open at the end of September. As outlined on Page 2, preparatory work for this was undertaken as part of this year's May Fare Revision, with the rezoning of Kennington to become a Zone 1&2 boundary station and the addition of fares to the fares data for the two new stations on the branch.



As already mentioned, both Nine Elms and Battersea Power Station will be within Zone 1. As part of the September Fares Revision changes, Battersea Power Station will be configured as a Cross London interchange station for NR journeys across London.

This will allow NR Single and Return tickets with the + showing Cross London validity, to be accepted and allow interchange to/from the nearby Battersea Park or Queenstown Road NR stations.

So a customer travelling from Chertsey to Stevenage and using a Cross London ticket, would be able to alight from their South Western train at Queenstown Road, walk the short distance along the road to the new Battersea Power Station LU station and then resume their journey there and use the Northern line to travel to King's Cross, before changing onto a service to Stevenage.

From Sunday 05 September, the two new destinations of Nine Elms and Battersea Power Station will appear on POM screens at all other LU stations, although customers will obviously not be able to travel to either until the new line opens a few weeks later. This type of change can only be made at the time of a fares revision, so the change has had to be implemented slightly earlier in readiness for the opening.

## PRIV NR ONLY DISCOUNT

Another part of the September Fares Revision package which was delivered earlier by Cubic on Sunday 18 July, was the addition of the PRIV NR only discount to TfL Rail and London Overground TVMs, to allow holders of the NR Rail Staff Leisure card to have this discount added to their Oyster card.

Unfortunately, limitations of the ticketing system meant that it was not possible to implement this change solely to the devices at Overground and TfL Rail stations.

As a result, the PRIV NR discount is now also included on the drop-down menu on our POMs.

We would like to emphasise however, that there has not been any change to our processes and LU staff MUST NOT set this discount entitlement as it is not valid on LU services.



## WEEKLY CAPPING ON OYSTER

We have had a number of previous planned implementation dates for weekly capping to be introduced for Oyster PAYG users, but unfortunately as is often the case with complex projects, we have on more than one occasion had to bring bad news that the planned launch date has been pushed back.



Although preparatory work and testing had been on target for a possible launch in early July, there were further delays in finalising the commercial agreements with each of the London area Train Operating Companies (TOCs).

The current target is for Oyster weekly capping to be launched on Monday 27 September. This will bring Oyster PAYG users in line with customers using contactless payment to make PAYG journeys, with travel capped on the basis of a fixed Monday to Sunday week.

There will be no change to the way in which gates and validators charge customers for journeys, but all data about a card's daily usage will be run through the TfL back-office system already used for contactless payments.

This will then recalculate journeys to ensure the customer receives best value across that day and the fixed week, with any over-payments being credited back to the customer's card as a refund via the Faster Universal Load (FUL) facility.

We hope to provide more information on how this works in the next edition of TRU.

## OLLY'S ODDITIES



Arnos Grove station which was designed by architect Charles Holden and built in 1932 has a large central rotunda.

Olly has discovered that this design is based on the iconic main Public Library in Stockholm, Sweden built just 2 years earlier.

← ...Don't believe Olly? Well compare for yourself... →



## GPay Promotion

The Google Pay RTD (card reader) sticker promotion on all LU gatelines that originally started prior to the COVID outbreak has recently been extended until at least March 2022. Talks have also just begun with a view to extending this promotion beyond that date.

This doesn't really change anything for stations except these should be regularly checked for damage and replaced as soon as possible.

As before any damaged or missing card reader stickers must be reported to the Cubic Helpdesk, but staff must specify whether the sticker is required for the gateline or for a POM as shown.

Please note that replacement card reader stickers are only applied by Cubic technicians who will remove all traces of the previous sticker and any gum residue before applying the new one.

**Part 2 – Continuing with this issue's theme of UK coinage...**

**Q2)** What year did UK decimal coins stop being minted with the words "New Pence"

- |   |      |   |      |
|---|------|---|------|
| A | 1982 | B | 1983 |
| C | 1984 | D | 1985 |



Answers on Page 11

## REDBRIDGE GUIDE DOG TRAINERS FREE TRAVEL TRIAL

London residents with guide dogs are eligible for a Freedom Pass, but there are currently no concessions for Guide Dog Trainers who travel with guide dogs for the express purpose of training them how to safely use London Underground's complex network of stations and services.

This means that trainers for the Guide Dogs for the Blind Association have to pay for any LU travel whilst training their dogs.

Trainers of guide dogs do however currently benefit from free travel on buses with their 'Puppy Walkers' photocard.

The Guide Dogs for the Blind training centre based in Redbridge has around 20 trainers, who each train 3 guide dogs over a six week period.



ONLY "GUIDE DOGS FOR THE BLIND" ID CARDS ARE VALID FOR FREE TRAVEL – WITH A DOG

TfL has agreed to a six-month trial starting on Monday 20 September, for the Redbridge branch of Guide Dogs for the Blind Association trainers to be allowed free travel on the Central Line between Loughton and Stratford when training guide dogs.



This training will be allowed on Mondays to Fridays, only between the hours of 09:30 and 15:30 and will include entering / exiting stations, how to use escalators and travelling on trains. The final journey must have started before 15:30.

In order to qualify for free travel, the trainers must present their Guide Dogs for the Blind ID card (as illustrated above) to station staff when undertaking training at a Wide Aisle Gate. Staff should also be readily identifiable in their Guide Dogs uniform of dark blue sweatshirt and dark blue trousers. We hope that it doesn't need to be pointed out that they must also be accompanied by a trainee guide dog!

Please note that this is a localised trial at the eastern end of the Central line and there is no change to free travel arrangements elsewhere on the network. Details will be provided in the Hot Issues Bulletin in advance of the trial start date.

## RETURN TO CASH ACCEPTANCE

The easing of COVID restrictions and the slow return towards normality, saw the phased return to LU stations taking cash payments through the POMs during June and July.

The re-introduction of cash acceptance at stations that had been operating as "card payments only" since May 2020 saw all of our stations moving to the revised banking process, which had initially been trialled last summer and then subsequently implemented across all of the LU locations that continued to accept cash payments through the pandemic.

CHANGE GIVEN



# REVENUE PROJECTS

## MFM NHU UPGRADE

Further to our last update in TRU132, after a number of delays due to issues with the late delivery of the new metal castings which house both the new Note Handling Unit (NHU) together with the Chip & PIN units (PED) at the front of the MFM, the planned rollout of the new Pay Complete NHUs finally commenced on Sunday 06 June, with the upgrade of the final MFM at Liverpool Street and the MFM at Old Street.

### THE KEY POINTS

- ▶ [REDACTED]
- ▶ [REDACTED]
- ▶ More reliable performance
- ▶ Easier for technicians resolve faults and to note clear jams, rather than returning the whole unit to the workshop for rectification.



The first phase of work focussed on the new Pay Complete NHUs to replace the existing Bank Note Acceptor (BNA) and Bank Note Recycler (BNR) units on approximately 100 MFMs that had continued to accept cash payments throughout the pandemic. The start of the programme largely focussed on replacing the less reliable BNR units, which tend to be located at our busier sites.

At the time of writing, although the initial phase of work had taken a lot longer than initially expected, Cubic have successfully upgraded a total of 97 of the 328 MFMs in service with new Pay Complete note handling units.

Now that other stations have returned to accepting cash, a further batch of installation kits and castings have been ordered by Cubic, which will allow other MFMs to be upgraded in due course. Going forward, our priority for Phase II of the upgrade programme will be to first of all replace the remaining 25 existing BNR units, together with note handling units within the remaining non-standard JLE style devices which have not already been upgraded with the new units. This will reduce the number of variants of MFM currently in operation. Within this phase we will be reviewing the allocation of note recycling modules to determine whether any sites that did not previously have one of the 100 BNR units, warrant having a recycler rather than a standard note accepter when they are upgraded.

## SC3 UPGRADE COMPLETED

A further programme of work that has been completed since the last edition of TRU was published, concerned an update to the Station Computer (SC) which process data to and from our ticketing devices. Each station has at least one SC, but bigger more complex sites with large numbers of ticketing devices may have two or three SCs.

**COMPLETED** 

The latest upgrade to increase the memory within each of the SC3 units and replace batteries within the Uninterruptable Power Supply Unit (UPS) commenced on the night of 09 May 2021 with three stations at the western end of the Central line (Greenford, Hanger lane and Perivale), with the final devices being upgraded during the first week of July..



The UPS is a device that continues to supply power to the SC if the mains feed to the SC should fail and ensures that the SC can shut down in a controlled manner in the event of an unexpected power loss. This protects both the internal components and data held by the SC.

# REVENUE PROJECTS

## GATE UPGRADES

### E1 GATE UPGRADES

It has been a very long time since the final trial of a new arrangement of the light beams that control the paddle movements on the E1 type of automatic gates was completed at Manor House, Swiss Cottage and Paddington (Main) last July.



Although a number of gates at London Bridge were subsequently upgraded with the new arrangement in November 2020, the planned start of the rollout of this modification to all other E1 gates has been repeatedly delayed.

In TRU132, we had hoped that work would commence immediately following the completion of a programme of work on our newer E2 gates, but for a variety of reasons the start date was pushed back a number of times.

The good news is that the long-awaited upgrade finally commenced on the night of Tuesday 06 July with the start of work on gates at Southwark and the programme is now well underway.

The current programme actually embraces two separate modifications:

- Beam Logic Unit (BLU) – [REDACTED]
- Paddle Control Software – changes to the actual software within the gate that control the behaviour of the paddles when an obstruction is detected as they attempt to close. This is the same modification that was previously applied to all our E2 gates. This will stop the gate paddles from continuing to try and close when a customer or their property is stuck between the paddles and should both reduce instances of customers being trapped in gates and of damage to them or their property.

#### THE KEY OBJECTIVES

- ▶ Reduction in number of BLU failures
- ▶ Improvement in Gate reliability and availability
- ▶ Reduction in instances of customer trapped in gates
- ▶ Easier to free customers or their property if they do become trapped between paddles.



Although only the original trial stations listed above had previously received the BLU modification, gates at a number of stations have previously been upgraded with the Paddle Control software change in connection with the original trial of this on E1 gates and more recently at stations which are involved in the current trial of the light weight composite gate paddles (as outlined on Page xx).

These stations needed to be upgraded prior to the new paddles being installed, as the new design of paddle does not have the 'soft edge' feature that standard paddles have.

The programme is being completed by Cubic engineers visiting each site during engineering hours and as normal, stations will be advised by email in advance of the planned upgrade dates for their devices.

Part 3 – It is definitely a coinage edition of the TRU...

Q3) Can you match the coin to its official circulation date

A	12-sided £1	B	Resized 50p	C	20p	D	Resized 10p *	E	Resized 5p *
1	1982	2	1990	3	1992	4	1997	5	2017

\* Not including Nickel-plated steel variants

Ticketing & Revenue  
**T & R**  
Trivia

Answers on Page 11

# REVENUE PROJECTS

## LIGHT WEIGHT PADDLE TRIAL

Since our last update in TRU132, Cubic have successfully upgraded gates at a further eight stations, with the new light weight composite material paddles, as an extension to the original trial on gates at Embankment.

The additional stations were chosen to provide a mix of station types and customer usage and to provide more information on the durability and performance of the new material, ahead of a decision on whether to install the new type of paddle more widely.

The stations upgraded include a mixture of EI, E2 gates and WAGs, as outlined below.



Station	EI	E2	WAG	Station	EI	E2	WAG
WEST HAM		✓	✓	CANNON STREET		✓	✓
UXBRIDGE	✓		✓	ACTON TOWN	✓		✓
WALTHAMSTOW CENTRAL		✓	✓	EDGWARE ROAD (Bakerloo)		✓	✓
BLACKHORSE ROAD	✓		✓	HAMMERSMITH (D&P)	✓		✓

The installation at Uxbridge in May saw the first occasion that advertising had been applied to the new design of paddle, with positive feedback from the Global installations team about the ease of fixing their vinyls to the new paddle material.

The trial of the new paddles will continue and as with all trials, we welcome feedback from staff at the stations concerned. We are planning to undertake a survey to gather further feedback and staff views in the next few months.

## PNEUMATIC GATE PODS

Although the rollout of the new design of Passenger Orientated Display (POD) has now been completed on all LU gates, there have been some issues with the new Gate PODs on the older pneumatic gates, as we briefly outlined in our last update in TRU132,



# REVENUE PROJECTS

## FURTHER POM REDUCTIONS

In TRU132, we reported on the completion of a programme to reduce the number of QBM devices, with a total of 66 devices being removed.

In that article we also outlined plans for further reductions in the number of POMs, largely driven by lower customer demand and a need to reduce our maintenance costs.

At that time, we had been expecting to quickly progress on to a second phase of device removals, but for a number of reasons little progress has been made on further reductions.

Although we had promised to provide further detail on phase II of the POM Reduction programme within this edition, the details are nowhere near being finalised.



There have been significant changes since our April edition, with the return to our POMs accepting cash and the slow recovery post easing of COVID restrictions seeing a steady increase in the number of customers using the LU network and in the volume of sales through POMs. Having said that, the calculations that had previously been undertaken were not based entirely on the low customer volumes seen during the pandemic but were based on projected demand over the next few years.

The impacts of Oyster and contactless, together with a general decline in season ticket sales have seen the level of POM sales decline since their peak, whilst at a number of stations the number of extra devices added to 'cover' the impact of the closure of ticket offices, was in excess of the numbers predicted by the demand model. What is clear, is that at many locations we currently have more POMs than we currently need, or will need in the foreseeable future.

At present discussions are continuing around how these reductions in POM numbers can best be achieved. With the AFMs, which make up the largest number of devices, the debate is around whether surplus devices should be removed completely and replaced with an infill panel, (as was done for a number of the QBM devices removed in Phase I) or whether devices should be de-commissioned and 'mothballed' on site. As outlined in TRU132, a prototype of a fascia panel to fit over the front of a device has been trialled at Heathrow T4, whilst that station remains closed. A similar solution could potentially be implemented for other AFMs, particularly where there may be a possibility of demand increasing more than expected.

At a number of stations, certain devices have remained closed to help maintain social distancing between customers, so effectively the numbers of POMs available to customers have already been reduced. In the coming weeks local consultation will take place at locations earmarked for a reduction in the number of POMs, to determine which specific devices will be either 'mothballed' or removed.

## ANSWERS TO T&R TRIVIA

Pt.1 C 15 February 1971

Pt.2 A 1982

How did you do?

Pt.3	A	12-sided £1	B	Resized 50p	C	20p	D	Resized 10p	E	Resized 5p
	5	2017	4	1997	1	1982	3	1992	2	1990

# ...AND FINALLY!

## CASH HANDLING DEVICE PROBLEMS

Since the introduction of our Cash Handling Devices (CHDs) nearly 5 years ago, the performance of devices has been very good and the clearance of faults when they did occur has generally been very quick.

Since the re-introduction of cash acceptance at all LU sites in June and July, Pay Complete who maintain the devices for us, have encountered a number of issues and unprecedented levels of work.

Unfortunately, during the period that we were not using many of the CHDs, TfL sought to make some cost savings on the previous maintenance arrangements. This resulted in Pay Complete not replacing a couple of members of their team that had left them, during the period that on-going call levels were very low.

With nearly all devices now returned to full operation, the previous complement of engineers is again required, but recruiting new staff, training them and obtaining Sentinel cards to gain access to LU operational sites all take time. The Pay Complete maintenance team is quite small, so a shortfall in one or two engineers has a fairly significant impact.

These problems have been compounded by higher levels of faults being reported, the majority of problems

[REDACTED] We had identified from previous experience with devices being installed too early by project teams, that the CHDs do not fair well if left idle for long periods of time, particularly in some of our warmer and more dusty stations. It was therefore expected that we would see a higher level of faults when devices were brought back into use.

Unfortunately, the speed that TfL required cash acceptance to be switched back on at all sites and the availability of engineers, prevented us from being able to undertake a full programme of Preventative Maintenance visits before devices were brought back into use.

In addition to labour resources and higher levels of faults, we have also recently seen some issues with the shortage of some key spares. The demand for certain components has exceeded stocks of certain items and a combination of logistical problems which have also affected many other industries recently, has meant that the lead times for deliveries of certain items has been a lot longer than usual. This has resulted in some devices being out of service a lot longer than would normally be the case.

One of the components that has caused major problems is [REDACTED].

Hopefully normal service will be resumed in a few weeks, once the number of engineers is increased to bring the team to full strength and the backlog of faults is reduced,

## LOOKING AHEAD TO TRU134

The next edition TRU134 will be published in October and we plan to include:

- *A review of the September Fares Revision*
- *Features on some newly opened ticket halls and the Northern Line Extension stations*
- *Oyster Explained feature on Weekly Capping*
- *Updates on current and planned projects*
- *The latest T&R news stories*

Plus a selection of our other regular T&R features.....

