



Department
for Transport

Rail Vehicle Accessibility: Exemption application

London Underground Limited:
Piccadilly Line

Moving Britain Ahead

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Foreword

The Rail Vehicle Accessibility (Non-Interoperable Rail System) Regulations 2010 (RVAR) set standards for the accessibility features of a rail vehicle operated on particular types of rail systems. The Secretary of State has powers under section 183 of the Equality Act 2010 to allow operators of regulated rail vehicles to continue to operate a vehicle if it does not fully comply with the standards set in the Schedules to RVAR 2010.

This consultation contains the application from London Underground Limited for exemption from standards set out in Schedule 1, Part 1 (General Requirements) and Part 2 (Additional requirements) RVAR 2010 for trains operated on the Piccadilly Line, known as '73TS'.

The consultation period shall run until 31 October 2019. To share your views and comments on the application please contact us at: railvehicleaccess@dft.gov.uk or write to us at

Piccadilly Line RVAR consultation
Rolling Stock Team
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Great Minster House
33 Horseferry Road
London SW1P 4DR

1. Exemption application

1 Full name of applicant and address

London Underground Limited
55 Broadway,
London,
SW1H 0BD

2 Description of Rail Vehicles

Piccadilly line 1973 Tube Stock - Vehicle numbers:

Train Formation: 173 x 3 car units which when 2 x DM-T-UNDM or 2 x DM-T-DM coupled together, form a 6-car train.

Car Numbers:

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Total:		495 vehicles

3 Circumstances in which exemptions are to apply

At all times while the train is in passenger service

4 Relevant requirements from which exemption is sought

Schedule 1, Part 1 (General Requirements), of the Rail Vehicles Accessibility Regulations (RVAR) 2010, paragraph 1:

18(4) Where a train consists of the number of rail vehicles shown in a row of column A of the following table that train must have at least the number of wheelchair spaces shown in the opposite row of column B;

A	B
2 to 7 vehicles	2 wheelchair spaces
8 to 11 vehicles	3 wheelchair spaces
12 or more vehicles	4 wheelchair spaces

5 **Technical, economic and operational reasons why exemption is sought**

Through a number of delayed upgrade programmes, including that under the Public-Private Partnership, the Piccadilly line has continued to operate the 73TS in service. The trains were refurbished in the mid 1990s giving them a number of further years of serviceability. This took place prior to the introduction of RVAR however tried to make use of best practice at the time.

The trains perform very reliably thanks to the hard work of Depot staff and are now approaching the end of their life. By 2026, all of the trains will have been replaced with new Siemens trains under the Deep Tube Upgrade Programme. These trains will built to be compliant with RVAR and will incorporate the best practice and lessons learned from many years of experience. As trains procurement takes a number of years, it is not viable to modify trains which approaching replacement.

If the trains were overhauled, they would have to be removed from service to fit a wheelchair bay, meaning that a reduced service would have to be operated whilst the works are carried out. Furthermore it is estimated that the cost of making the trains compliant is £12m (following surveys of the fleet and benchmarking of similar works on other fleets) and a further loss of revenue of £4.8m. Theoretically, if refurbishment works were to commence immediately, it is likely that a number of these trains would have less than one year in service before they are scrapped. Whilst London Underground is aware of the importance of providing accessible transport it is not believed to represent good value to refurbish these trains given the short life span and an incoming new fleet. Engineering resource is being focused on refurbishing trains which have a longer service life, such as the Central line, and on ensuring that the new fleet of trains matches the expectation for passengers.

The Piccadilly line already has a number of step free stations, both utilising manual boarding ramps and platform humps which were installed for the 2012 Games. These align with carriages which contain 'Multi Function Areas'. These are used for luggage, pushchairs and are used by a number of wheelchair passengers currently. Whilst not a replacement for a fully compliant wheelchair space, the MFA provides a space in which wheelchair users can travel on the existing trains. The draught screen provides some level of backrest against which a wheelchair can be reversed to provide support in the vehicle. Figure 1 shows a typical example of the MFA on the 73TS.



Figure 1. Multi Function Areas

The contract with Siemens is now underway and marks the start of a new generation of trains on the Underground providing not only RVAR compliance but benefits to passenger comfort, information and journey times. Engagement on the aesthetics of the train and customer experience will commence soon and it is intended that passenger groups are involved in the final design of the interior, including the wheelchair bays. More information on the next generation of trains can be found at: <https://tfl.gov.uk/campaign/tube-improvements/what-we-are-doing/improving-the-trains>

6 The effect which non-compliance would have on a disabled person's ability to use rail vehicles of the description to which the application relates

Whilst there are currently very few stations on the Piccadilly line which have fully accessible stations, those which are provide interchange and access to important parts of London including Heathrow airport. By interchanging, large areas of London are accessible to a disabled person travelling by Tube. In making journeys, a disabled passenger, particularly somebody using a wheelchair may experience longer journey times than those of a person without a disability. The Mayor has committed to reducing the excess journey time which is experienced by disabled passengers using London Underground by 2024 under the £200m investment in step free schemes across the network.

7 Any measures which could be taken to enable disabled persons to use the rail vehicle if exemption sought is granted

Numerous works continually take place to ensure trains are safe and reliable in service. As part of this, the flooring in the train will become RVAR compliant through a cost neutral replacement of the sub-flooring material. This will clearly highlight the MFAs from the vestibule. London Underground continues to engage with passenger groups to improve the accessibility of the network and bring about change where possible.

8 Any proposals for later modification of rail vehicles to secure compliance with RVAR within a stated period

Colour contrasting flooring will be fitted within the passenger saloon as part of other works being undertaken on the train.

Unless permanent exemption sought, the period during which exemption is to apply.
A timed exemption is requested to coincide with fleet replacement by 31 December 2026.

1 Full name of applicant and address

London Underground Limited
55 Broadway,
London,
SW1H 0BD

2 Description of Rail Vehicles

Piccadilly line 1973 Tube Stock - Vehicle numbers:

Train Formation: 173 x 3 car units which when 2 x DM-T-UNDM or 2 x DM-T-DM coupled together, form a 6-car train.

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3 Circumstances in which exemptions are to apply

At all times in passenger service, when a 73TS train stops at a platform where:
there is no step-free route from the platform out of the station: or

there is no step-free route between that platform and platforms for other London Underground (LU) lines or national rail services: or

it is not physically possible to:

bring the dimensions of the step and/or gap within the maximum permitted tolerances and deploy a manual boarding ramp in a safe and appropriate way.

4 Relevant requirements from which exemption is sought

Schedule 1, Part 1 (General Requirements), of the Rail Vehicles Accessibility Regulations (RVAR) 2010, paragraph 1:

1(1) Subject to sub-paragraph (2), when a wheelchair-compatible doorway in a rail vehicle is open at a platform at a station, or at a stop, a boarding device must be fitted by the operator between that doorway and the platform, or the stop, if a disabled person in a wheelchair wishes to use that doorway.

1(2) Sub-paragraph (1) does not apply where the gap between the edge of the door sill of the wheelchair-compatible doorway and the platform, or stop, is not more than 75 millimetres measured horizontally and not more than 50 millimetres measured vertically.

5 Technical, economic and operational reasons why exemption is sought

Our aim is to provide a ‘turn up and go’ service which allows customers the greatest level of access without the need for staff intervention and assistance. However, this is not always possible as many of the platforms were never designed to provide step free and level access. These stations are often difficult to alter due to their physical layout and modifications are constrained as many are below ground in Central London. The cost to make some stations, particularly in Central London, step free is prohibitively expensive, technically challenging and would cause significant disruption to users in both the station and surroundings.

Where step free is possible LU prefers the use of a permanent solution to that of a temporary solution, for example a manual boarding ramp (MBR). This is neither possible, nor economic in all locations and as such MBRs will be used to provide step free access.

Temporary exemptions are being requested so that the installation of manual boarding ramps and platform ‘humps’ can be delivered under the Step Free Programme as currently scheduled. These exemptions are being requested for stations which are currently in scope, giving certainty to passengers when these will be delivered. Further stations may be identified in the future to become step free through future initiatives.

Exemptions are also being requested under the Pimlico Principle at a number of locations as there are no possible step free journeys at those locations. This takes precedent from the pragmatic approach to Pimlico station which does not have any access to platform level or interchange by step free routes. If the Platform Train Interface (PTI) was made compliant, passengers would still be unable to leave the platform to make onward journeys. As such, until the stations have step free routes, exemptions are being requested.

Full lists of platforms for which exemptions are being requested are in Section 10.

6 The effect which non-compliance would have on a disabled person's ability to use rail vehicles of the description to which the application relates

London Underground has sought to minimise the effect of these exemptions on peoples’ ability to travel. By utilising a combination of platform ‘humps’ and MBRs across the network a person with restricted mobility will be able to utilise parts of the Piccadilly line and interchange to other lines and services. It will unfortunately not be possible to make fully independent journeys to all step free stations on the line as staff will be required to deploy an MBR at some stations. Assistance however is available on a ‘turn up and go’ basis meaning that delays to a journey are minimised as much as practical and do not need to be planned in advance.

7 Any measures which could be taken to enable disabled persons to use the rail vehicle if exemption sought is granted

The Mayor has committed £200m to step free works which will further improve access to the Underground network over the next five years. In future, as more stations become step free, the network will be opened up further to people with restricted mobility. LU works and will continue to do so with local boroughs and user groups to shortlist stations for step free access and improvements.

8 Any proposals for later modification of rail vehicles to secure compliance with RVAR within a stated period

At stations where compliance is planned (Section 10), the temporary exemptions will enable LU to carry out works under the Step Free Programme. This aims to provide

an appropriate, accessible and sustainable solution to give greater access for customers at these stations.

LU has not applied for a permanent exemption for platforms where compliance is not currently possible as we are aware that technology and circumstances change. Consideration of future compliance and methods will be a factor for the introduction of new trains on the line. A list of platforms for which exemption is requested under the Pimlico Principle is in Section 10.

9 Supplementary information for consideration

New trains will be rolled out onto the Piccadilly line by 2026 which will be fully compliant with RVAR. MBRs have been used under the current tranche of step free works as the future configuration of the train is not fully known meaning that permanent works may be abortive once the current trains are retired from service.

A list of compliant platforms is available in Section 10.

10 Unless permanent exemption sought, the period during which exemption is to apply.

LU is requesting timed and untimed exemptions in line with the tables below with outlined timescales.

Timed exemptions

Station	Platform	Works for compliance	Completion date
Cockfosters	1, 2, 3, 4	MBR	March 2020
Ickenham	1, 2	MBR	March 2020
Osterley	1, 2	MBR	March 2020
Sudbury Hill	1, 2	MBR	March 2020
Knightsbridge	1, 2	MBR	March 2021
Boston Manor	1, 2	MBR	March 2022
North Ealing	1, 2	MBR	March 2022
Park Royal	1, 2	MBR	March 2022
Ruislip	1, 2	MBR	March 2022

Untimed Exemption Requests Under The Pimlico Principle.

Station	Platforms	Station	Platforms
Alperton	1, 2	Manor House	1, 2
Arnos Grove	1, 2, 3, 4	Northfields	2, 3
Arsenal	1, 2	Piccadilly Circus	3, 4
Baron's Court	2, 3	Ravenscourt Park	2, 3
Bounds Green	1, 2	Rayners Lane	1, 2
Chiswick Park	1, 2	Ruislip Manor	1, 2
Covent Garden	1, 2	Russell Square	1, 2
Ealing Common	1, 2	South Ealing	2, 3
Eastcote	1, 2	South Harrow	1, 2
Gloucester Road	4, 5	South Kensington	3, 4
Hatton Cross	1, 2	Southgate	1, 2
Hillingdon	1, 2	Sudbury Town	1, 2
Holborn	3, 4	Turnham Green	2, 3
Holloway Road	1, 2	Turnpike Lane	1, 2
Hounslow Central	1, 2	Uxbridge	1, 2, 3, 4
Hyde Park Corner	1, 2	Wood Green	1, 2
Leicester Square	1, 2		

Compliant platforms

Station	Platforms	Station	Platforms
Acton Town	2, 3	Heathrow Terminal 4	1
Caledonian Road	1, 2	Heathrow Terminals 1, 2, 3	1, 2
Earl's Court	5, 6	Hounslow East	1, 2
Finsbury Park	1, 3	Hounslow West	1, 2
Green Park	1, 2	King's Cross St. Pancras	5, 6
Hammersmith	2, 3	Oakwood	1, 2
Heathrow Terminal 5	1, 2		

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3 Circumstances in which exemptions are to apply

At all times while the train is in passenger service

4 Relevant requirements from which exemption is sought

Schedule 1, Part 1 (General Requirements), of the Rail Vehicles Accessibility Regulations (RVAR) 2010, paragraph 10:

10 (1) Subject to sub-paragraphs (2) and (3), a handrail must be fitted in the following positions—

(a) in every rail vehicle, on the inside as close as practicable to, and on either side of, the passenger doorways in the side of the vehicle, extending vertically from a point not more than 700 millimetres above the floor to a point not less than 1200 millimetres above the floor;

5 Technical, economic and operational reasons why exemption is sought

Single Doorways

London Underground is requesting that partial compliance is accepted for handrails in single doorways on the 73TS as would be uneconomical to comply given the remaining life of the trains.

Presently there is a single hand rail on the body end side of the door which is fitted within the stand back area. On the saloon side of the doorway, there is no standback and a glass draught screen which separates the seating from the doorway.

To fit a second handrail in the single doorways would require a significant re-design of the saloon interior involving re-locating equipment which is housed under the seats and possible structural work around the door opening.



Figure 2 - Single doorway

Double doorways (Multi Purpose Area)

At a number of double doorways on the train there is a Multi Purpose Area which provides space for luggage, prams and a priority area for Wheelchairs. The space also houses a perch seat and Passenger Emergency Alarm as show in Figure 2.



Figure 3 - Multi Purpose Area

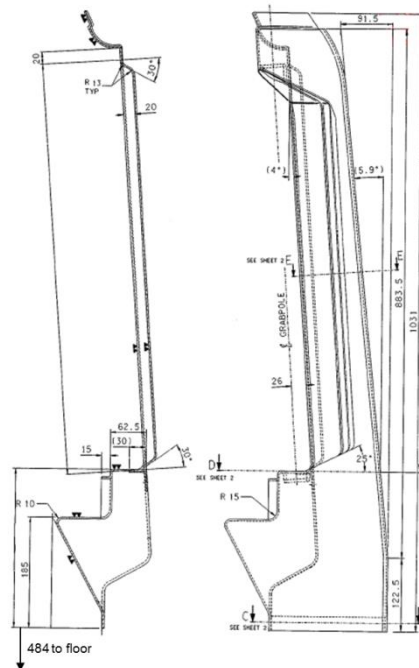


Figure 4 – LU drawings 86280 and 86282

The handrail in this area does not meet the required dimensions of RVAR as the bottom measures 750mm from the floor level and not 700mm. The rail measures 610mm in length, extending to a useable height of 1360mm above the floor level.

In order to comply with the regulation, a significant modification would have to be implemented to remove a section of the bench and anchor the rail in to the body structure. The cost of designing and implementing such modifications is not considered to deliver good value. It is also believed that there is little benefit in providing an extra 50mm of handrail on one side of the doorway in this position; a compliant handrail is available in all other positions on the train.

6 The effect which non-compliance would have on a disabled person's ability to use rail vehicles of the description to which the application relates

London Underground does not believe that there is detriment to any customers' use of the train due to the non-compliance in either the single doorway or double doorways adjacent to the Multi Purpose Area.

7 Any measures which could be taken to enable disabled persons to use the rail vehicle if exemption sought is granted

London Underground does not believe that there are any further measures which could be taken to address the handrails in the 73TS which are economic to carry out and provide value to passengers.

8 Any proposals for later modification of rail vehicles to secure compliance with RVAR within a stated period

There are currently no proposals for later modifications relating to these clauses.

9 Supplementary information for consideration

None

10 Unless permanent exemption sought, the period during which exemption is to apply.

A timed exemption is requested to coincide with fleet replacement by the end of 2026.

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3 Circumstances in which exemptions are to apply

At all times while the train is in passenger service

4 Relevant requirements from which exemption is sought

Schedule 1, Part 1 (General Requirements), of the Rail Vehicles Accessibility Regulations (RVAR) 2010, paragraph 11(5):

11 (5) Whilst a rail vehicle is stationary at a station or stop any public address systems required to be fitted inside the vehicle, and on its exterior, must be used to announce the destination of the vehicle or, if it is following a circular route, the name or number of the route and, in the case of systems inside the vehicle only, to announce the next stop.

5 Technical, economic and operational reasons why exemption is sought

London Underground is committed to providing sufficient timely, accurate and accessible customer information to enable our customers to be confident during their journey, make informed decisions and to minimise the impact of disruption.

London Underground is seeking a permanent exemption that would allow the removal of the 'next station' information inside the saloon whilst the train is stationary at a platform. It is believed that announcing the 'destination' information provides the same benefit to passengers whilst at a station. This is because the direction of travel can be ascertained from the destination, as routes are simple and maps available inside the train. Additionally the 'next station' and 'destination' announcement is made during the interstation run.

There is the concern that operation of the passenger service could be impeded in delivering all regulated information whilst stationary at a station. The dwell time is carefully balanced with run times in order to deliver the train service and delays whilst stationary can have knock on effects to service robustness and over crowding.

London Underground strongly believes that better service to passengers can be provided by reducing the amount of regulated information given. This allows a driver to give additional information about service disruption, interchange with other transport modes or LU lines, step free access and where appropriate high-level local and tourist information. All regulated information will still be given inside the train between stations in audible and visual format.

Passengers on the platform are able to get information from a range of sources including audible station announcements, platform 'next train' display indicators, visual displays on the external side of the vehicle and fixed signage such as network maps. Supplementing this are Platform Help Points which enable passengers to communicate directly with station staff for further information.

The Piccadilly line service operates a high frequency service and LU believe that the information provided is representative of the "spirit of RVAR" in its meaning; namely the direction of the train and destination where it is appropriate to give this information. Short run times between stations offers reassurance if a passenger is travelling in the wrong direction and frequent service allows for correction quickly and easily with the minimum disruption should this occur.

In applying for this exemption, LU will maintain the information given on the Piccadilly line fleet in line with other trains used on the network. The continued standardisation of messaging brings a consistency across London Underground and aids travellers with familiarity of the. In silent time during the dwell, the driver or digitised announcer system can make announcements, where applicable, without detracting from the purpose of the regulated information.

6 Any proposals for later modification of rail vehicles to secure compliance with RVAR within a stated period

There are currently no proposals for later modifications relating to these clauses.

7 The effect which non-compliance would have on a disabled person's ability to use rail vehicles of the description to which the application relates

There is a possibility that passengers may board the wrong train as full information is not broadcast whilst the train is stationary. There are supplementary information sources which can be consulted to ensure that the chance of this happening is minimised before boarding the train.

8 Any measures which could be taken to enable disabled persons to use the rail vehicle if exemption sought is granted

London Underground periodically reviews all information which is broadcast to customers to ensure that it is appropriate and meaningful to provide the best customer experience. All station and train messages are examined during these reviews.

9 Supplementary information for consideration

Information given in this way is in line with other train fleets operating on London Underground.

10 Unless permanent exemption sought, the period during which exemption is to

apply.

A timed exemption is requested to coincide with fleet replacement by the end of 2026.