



Department
for Transport

Rail Vehicle Accessibility: Exemption application

London Underground Limited:
Waterloo & City 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 Waterloo and City Line, known as '92TS'.

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

Waterloo and City 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

Waterloo and City line 1992 Tube Stock - Vehicle numbers:

Train Formation: five trains consisting of 10 x 2 car units, 2 x EF and 2 x FE coupled together to form a 4-car train.

Car Numbers:

Driving Motor Cars (E):	65501 – 65510	10 vehicles
Non Driving Motor Cars (F):	67501 – 67510	10 vehicles
Total:		20 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 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;

10 (6) The requirements referred to in sub-paragraph (5) are that—

(c) there must be not less than 40 millimetres clearance for a passenger's hand between any part of the handrail and any other part of the rail vehicle, excluding the mountings of the handrail to the vehicle.

5 Technical, economic and operational reasons why exemption is sought

Paragraph 10 (1) a: Handrails in doorways

The handrails adjacent to the doorways on the 92TS technically comply with RVAR however that the usable height as measured by the DfT is between 660mm and 1135mm from floor height. The total measurement of the handrail as fitted to the 92TS is between 610mm and 1360mm high. RVAR states that a handrail must be between 700mm and 1200mm from floor height. LU understands that the usable height does not take into account the radius of the handrails at both ends.

Whilst it would be possible to replace the handrail in all door positions, LU believes it would be uneconomical when weighed up against the benefit that this would bring to customers. Following discussion of this matter with the DfT on 24 September 2015 it was agreed that feasibility work should cease on economic grounds of changing the hand rails given the benefit it would give to customers. Figure 1 shows the hand rails in question with height measurement taken from the floor level of the train.

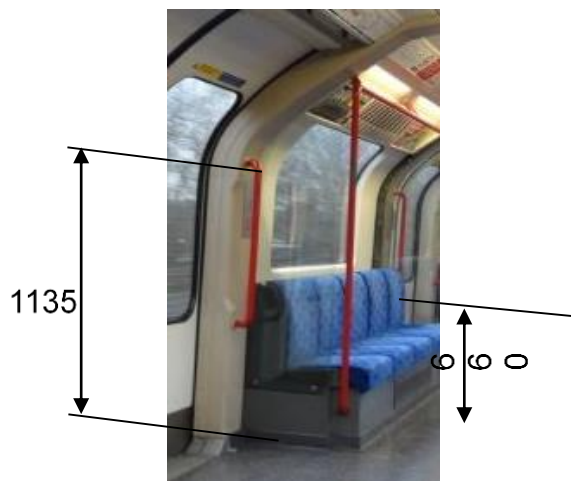


Figure 1 Handrail height useable height (92TS in Central line livery shown)

Paragraph 10 (6) c: Clearance for oval handrails

Owing to the dimensions of the Central line vehicles, an oval handrail was fitted above the doorways. This allows for significantly more space to hold on when the train is moving than if they were not fitted. It is assumed that at the time of construction, this profile was chosen so as not to impede on the space above the doorways which may have led to a risk of a person striking their head whilst boarding or alighting a train. The current hand rail follows the shape of the interior bodywork of the train which would have had a protrusion if the handrail had a circular profile.

The current handrail is compliant in size with RVAR however the clearance between the top of the hand rail and the bodywork is 35mm and not the required 40mm. In order to comply with this requirement, the handrail would introduce a hazard in the already restricted head height above the door. As such, LU cannot recommend adjusting the handrails.

London Underground also believes that there is little benefit provided by moving the handrail 5mm and any work which could take place to adjust the location of the handrails would also not represent good value to customers. This was discussed with the DfT during the meeting on 24 September 2015 and it was agreed that feasibility work on this element should cease on economic grounds. It is not thought that passenger benefit would increase for the cost of modification.

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 clearance of the handrail.

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 92TS which are economic to carry out and provide value.

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 permanent exemption is sought.

11 Full name of applicant and address

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12 Description of Rail Vehicles

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13 Circumstances in which exemptions are to apply

At all times while the train is in passenger service

14 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.

15 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.

A permanent exemption is being sought that would allow the use of a single message broadcasting the information inside the saloon whilst the train is stationary at a platform. As the Waterloo and City line there are only two stops, a single message gives both pieces of information and any further announcements would be a repetition.

16 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.

17 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

Because the Waterloo and City line has only two stations, LU does not believe that

there is any detrimental effect to customers in not broadcasting both the 'next station' and 'destination' messages separately..

18 **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 there are further measures which could be taken which would benefit customers in relation to this clause.

19 **Supplementary information for consideration**

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

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

A permanent exemption is sought.

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23 Circumstances in which exemptions are to apply

At all times while the train is in passenger service

24 Relevant requirements from which exemption is sought

Schedule 1, Part 1 (General Requirements), of the Rail Vehicles Accessibility Regulations (RVAR) 2010, paragraph 13(3):

13 (3) Each priority seat, and the space available to its user, must comply with the specifications shown in diagram C1 and in either diagram C2, C3 or C4 in Schedule 2.

25 Technical, economic and operational reasons why exemption is sought

The priority seats in the 92TS are the same height as the rest of the seats in the saloon. This height is 410mm which is 20mm below the minimum RVAR stipulated height of 430mm. It would be technically possible to raise the seat height however London Underground has concerns that raising only one seat would have aesthetic disadvantages.

Though it is possible to raise the seat height across the whole fleet it is deemed to be of low benefit for the cost of changing the seating. This was discussed with the DfT during a meeting on 24 September 2015 and it was agreed that on economic ground there was little benefit to raising the seat height. Accordingly feasibility works ceased on this element of compliance. Figure 2 shows the priority seat at the end of the aisle with a consistent height with all other seating.



Figure 2 Priority Seating (92TS in Central line livery shown)

26 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

A user in the priority seat is unlikely to be impacted by the seat height being 20mm lower than required in the regulation. All priority seating is next to a hand rail which can be used to aid standing and sitting.

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

There are no further measures which are economically deliverable which would deliver benefit to users.

28 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 this clause.

29 Supplementary information for consideration

None

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

A permanent exemption is sought.

31 Full name of applicant and address

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33 Circumstances in which exemptions are to apply

At all times while the train is in passenger service

34 Relevant requirements from which exemption is sought

Schedule 1, Part 1 (General Requirements), of the Rail Vehicles Accessibility Regulations (RVAR) 2010, paragraph 20:

20 (10) If a handrail is to be fitted to the ceiling of a rail vehicle, it may protrude into a wheelchair space provided that—

(a) subject to sub-paragraph (11), it must not do so by more than 250 millimetres measured from the passenger gangway side of that space; and

(b) its height must be not less than 1500 millimetres measured vertically from the floor.

(11) In its application to a narrow width vehicle, sub-paragraph (10) (a) has effect as if for 250 millimetres there were substituted 400 millimetres.

35 Technical, economic and operational reasons why exemption is sought

During detailed design on the wheelchair spaces on the 92TS it became apparent that the handrail design within this area cannot comply with RVAR. The horizontal handrail above the wheelchair space, because of the existing mounting locations on the 92TS, will protrude 451mm into the space rather than the permitted 400mm. This is because the wheelchair space is being retro-fitted to the train which was initially built before RVAR was introduced. Figure 3 shows the dimensions and location of the handrail (coloured red) when viewed longitudinally through the train.

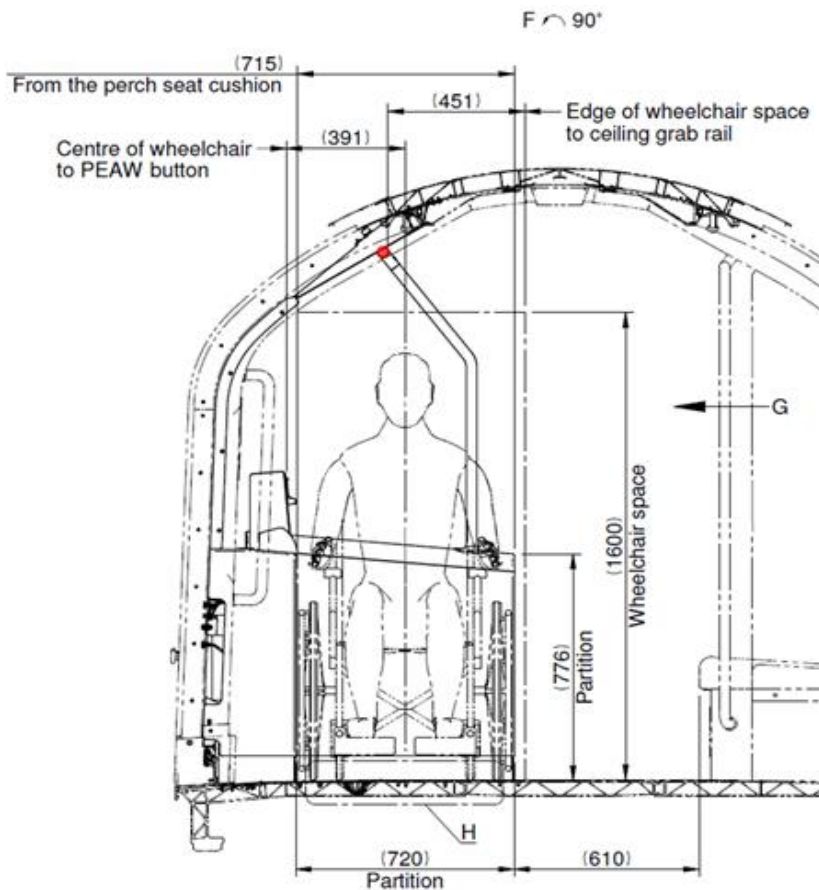


Figure 3 Wheelchair Space

The 92TS is considered a narrow width vehicle and has a low and curved roof line which limits the available space for hand rails. In order to move the handrail into a compliant location would mean that this would be mounted higher within the passenger saloon reducing its usability. It would also require a new mounting solution to be incorporated into the ceiling or an adaption of the existing mounting points. Figure 4 shows an enlarged view of the mounting point within the train body and location of the rail with the mounting hardware excluded for clarity.

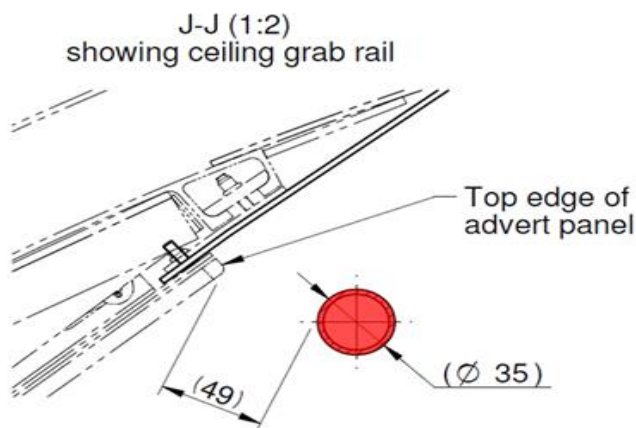


Figure 4 Mounting Location

There are five points across the top of the two wheelchair bays which the rail affixes to (see figure 5). The line of the existing handrail will be followed ensuring that the rail can be secured to existing mounting points within the train. This will ensure that the existing rail continues to be useable in future. The impact of removing this rail would mean that passengers have fewer places to hold on whilst the train is in motion, potentially leading to injuries.

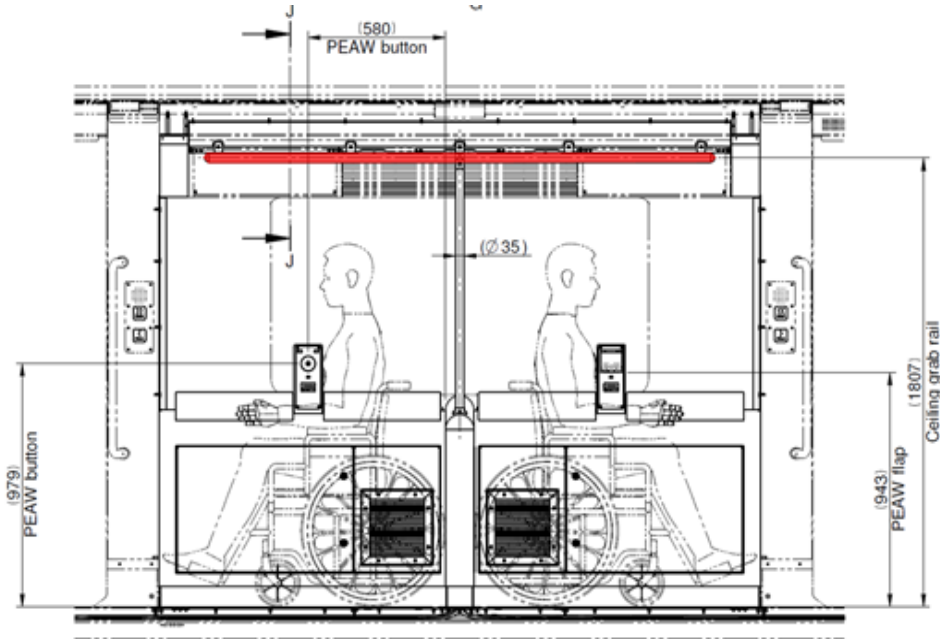


Figure 5 Wheelchair space locations

36 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 position of the handrail above the wheelchair spaces.

37 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 following design which could be taken to address the handrails in the 92TS which are economic to carry out and provide value.

38 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.

39 Supplementary information for consideration

None

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

A permanent exemption is sought.