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Dear Joanna and Jonathan

Consent to a Supplement to the Track Usage Price List: Class 345/M and Class 345/T

1. The Office of Rail and Road (ORR) has today issued a Notice of Consent to a Supplement to the Track Usage Price List, submitted to us jointly by Network Rail Infrastructure Limited (Network Rail) and MTR Corporation (Crossrail) Limited (MTR Crossrail) on 23 January 2018 under Paragraph 9 of Part 2 of Schedule 7 under their Track Access Contract. This follows an earlier submission made on 24 November 2016. This letter explains the reasons for our decision.

Purpose of the change

2. The purpose of the application is to supplement the Passenger Variable Usage Charge (VUC) Rates section of the Track Usage Price List to include the new Class 345/M and Class 345/T vehicle types. MTR Crossrail introduced the Class 345 vehicles onto the network for passenger services in May 2017 and has been paying a higher default rate to operate these vehicles. Our consent will allow MTR Crossrail to pay a more accurate, cost-reflective rate.

Consultation

4. There was no requirement for industry consultation as no other train or freight operating company is affected by the changes.

ORR review

5. Our initial review of this application raised two concerns. Firstly, around the approach to developing a curving class. Secondly, around the calculation of a cost-reflective VUC rate that is consistent with the charging principles and with the

complexity of two different formations being in operation within the Class 345 composed of four different types of motor vehicles with materially different characteristics.

Engineering issue around developing a curving class

6. Network Rail's guidance on VUC defines two approaches to developing a curving class but in the initial application, a third approach was proposed. This third method is not part of the agreed process for calculating a VUC which was subject to industry-wide consultation. Therefore, any modifications to the process would need to be appropriately consulted on and be incorporated into a revised guidance document before they could be applied. In light of this, the parties opted to apply the "user-defined" approach. Following clarificatory questions we are satisfied that this approach is correct and consistent with the VUC process.

Economic issue around calculating a Motor rate

7. When agreeing a VUC rate it is important to balance the need for accuracy (so that the incentives generated by the charge are effective) and consistency (to ensure that the operators are given a 'fair' rate).

8. The process for developing the VUC rate is published on [Network Rail's website](#). This document makes clear that "where multiple variants of a vehicle type exist, and will be subject to the same new VUC rate, a weighted average of the vehicle weight should be calculated based on a typical train set formation". While the guidance explicitly refers to weight (as this is where variation in the vehicle class is likely to occur), the same logic applies to wider vehicle characteristics.

9. There are two formations within the class – Full-Length Unit of 9 vehicles (FLU) and Reduced-Length Unit of 7 vehicles (RLU). There is one type of trailer vehicle but four types of motor vehicle. The type of motor vehicles used will vary whether an RLU or FLU. The FLU contains an additional motor vehicle (MS3) which is considerably lighter than the others. The question was how best to balance accuracy and consistency when calculating the rate.

10. The formations in question are:

- RLU: DMS+PMS+MS1+TS(W)+MS2+PMS+DMS
- FLU: DMS+PMS+MS1+MS3+TS(W)+MS3+MS2+PMS+DMS

11. A range of approaches was explored by Network Rail, MTR Crossrail and ORR to try and balance the need for accuracy and consistency of approach. These included:

- Calculating rates for individual vehicles and aggregating these to account for the formation as a whole;

- Calculating two rates for motor vehicles using a non-weighted average of vehicle characteristics (different ways of averaging the vehicles were explored);
- Calculating two rates for motor vehicles using a weighted average of vehicle characteristics (different ways of averaging the vehicles were explored); and
- Calculating a single motor vehicle rate using a weighted average of vehicle characteristics.

12. The above approaches were considered for both the RLU and FLU formations.

13. Following this work, MTR Crossrail and Network Rail submitted a revised application on 23 January 2018 where one motor vehicle rate for each formation was calculated using the weighted average characteristics of the relevant vehicles.

14. We consider such an approach reflects a balance between cost-reflectivity and consistency. Specifically, the approach retains the principle of calculating a rate based on the weighted average of vehicles. However, it also reflects that the two formations contain vehicles with different characteristics and that to adopt one weighted average for both formations would not reflect the vehicles in operation and would therefore reduce the cost reflectivity of the charge.

ORR's consent

15. Paragraph 9 of Part 2 of Schedule 7 to the TAC states that consent by ORR shall take effect on the date on which the vehicles are first used on the Network by the Train Operator. This rate will be applied retrospectively and Network Rail will refund any overpayment to MTR Crossrail.

Yours sincerely

A handwritten signature in black ink, appearing to be 'Michael Albon', is written over a horizontal line. The signature is stylized and cursive.

Michael Albon