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24 September 2012

Ekta Sareen
Senior Regulatory Economist, Network Rail
King's Place, 90 York Way
London, N1 9AG

Dear Ekta,

VUC – Calculating suspension factors for CP5 for freight vehicles

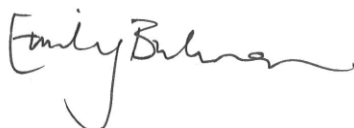
1. The purpose of this letter is to conclude on your proposals, as set out in your letter of 16 August 2012¹, to use the Ride Force Count (RFC) approach to determine the suspension factors to be applied to variable usage charges for freight vehicles.
2. We will confirm our conclusions as part of a wider conclusions document on track access charges, which we will publish in November 2012. We are writing to you now to give you assurance to allow you to progress this work according to your timetable.
3. In summary, we accept the proposals that you have set out in your letter on a revised methodology to calculate suspension factors applying to all vehicles registered after the start of Control Period 5, which will commence in April 2014 (CP5). We ask that you proceed with implementation of the new approach on this basis.
4. In addition, you have proposed for operators to have the option to have the variable usage charge for some or all of their *existing* vehicles calculated using the RFC methodology from the start of CP5 (which we interpret to mean vehicles registered prior to April 2014). We are minded to accept this proposal but, noting that it was developed subsequent to the June 2012 workshop, are open to feedback from the industry before **22 October 2012**.

¹ <http://www.networkrail.co.uk/browseDirectory.aspx?root=\\Regulatory Documents\\Access Charges Reviews&dir=%5cRegulatory%20Documents%5cAccess%20Charges%20Reviews%5cCP4%20Charges%5cH%20-%20CP4%20suspension%20banding%20review>



5. In Freightliner's response to your consultation, it argued for the need to improve evidence linking suspension factors to costs associated with levels of track damage. We share this concern and expect you, during CP5, to improve the evidence base mapping RFC to costs associated with track damage. We welcome your commitment, in your letter of 16 August 2012, in this regard and expect research on this area to be implemented in Control Period 6, which we expect to start in April 2019.
6. The annex to this letter sets out the background to this work, the process undertaken leading up to these conclusions, details of the conclusions, and next steps.
7. We are copying this letter and annex to Network Rail's consultees and the VTAC development group. This letter will be placed on the ORR website.

Yours sincerely

A handwritten signature in black ink, which appears to read 'Emily Bulman'. The signature is fluid and cursive, with a long, sweeping underline.

Emily Bulman

Annex to letter on VUC – Calculating suspension factors for CP5 for freight vehicles 24 September 2012

Background

8. The variable usage charge is designed to recover Network Rail's operating, maintenance and renewals costs that vary with traffic. Suspension factors are part of the methodology to calculate the variable usage charge for freight vehicles, reflecting the discount or premium paid to reflect the 'track friendliness' of the suspension types used by vehicles. Vehicles are currently assigned one of seven suspension factors in a +9.8 to -14.2% range dependent on the 'suspension band' that they fit into, historically based on wagon type descriptions.
9. Our PR08 determination² directed Network Rail to develop a more robust methodology to calculate freight vehicle suspension factors applied in the variable usage charge calculation. In our PR08 final determination we stated:

(19.39) ... We expect (unless there are justified reasons for not doing this) the [revised suspension factors] proposal to include:

- a quantitative measure of the mid point of each band;*
- a quantitative measure of the boundary between each band; and*
- consideration of whether it is appropriate to introduce lateral and longitudinal effects into the suspension banding table.*

(19.40) We consider that the incentive driven by the suspension band penalty/discount table is particularly important as this has had, and we expect to continue to have, strong incentive effects on the design and manufacture of suspension types. However, we consider that it can only do this with clear quantified evidence of the output effect needed to qualify for each band. We believe that any form of system based on descriptions/identities of types of current suspension banding would continue the limitations experienced in using the current approach. We expect that the final table will be output based. This means the bogie types qualify for the band based on the force they imply on the network and therefore the relative costs to Network Rail rather than the proposal which locks bogies into particular bands because of their description e.g. friction damped suspension necessarily worse than viscous damped suspension. We also continue to believe that the boundaries between bandings need to be quantified. At the industry workshop held by Network Rail on 3 October 2008 this conclusion was supported but it was also agreed that despite the concerns at the specifics of Network Rail's proposal, the work done by Network Rail and its consultants Manchester Metropolitan University would be a useful step in the process of developing this revised table. Network Rail has agreed to plan the necessary further work.

(19.41) This determination also recognises the long term investments made by operators and manufacturers in current suspension types. Once Network Rail has developed a new approach that is sufficiently robust, hopefully early in CP4, investors in existing vehicles will be informed of the likely application of the banding to all vehicles from CP5.

² <http://www.rail-reg.gov.uk/upload/pdf/383.pdf>

(19.42) Network Rail's price lists for audit will include the impact of the current suspension bands in the variable usage charges.

10. In light of the determination Network Rail committed, in Control Period 4 which runs from April 2009 to March 2014 (CP4), to revisit the suspension band discount table used to assign suspension factors to freight vehicles, to make the table less descriptive and more quantitative (the commitment restated in Network Rail's letter of 16 August 2012).

Process

11. Network Rail consulted in November 2010 and June 2011 on the use of the RFC metric as a way to allocate freight vehicles to suspension bands. There was general agreement amongst stakeholders on the use of RFC for this purpose but some concerns were raised about the calculation process. Network Rail asked its consultants at the Rail Technology Unit at Manchester Metropolitan University to develop a 'revised approach' to make the process easier to use.
12. The revised approach sought to adopt a more pragmatic way of implementing the RFC methodology. The approach involves each new bogie type being modelled using generic wagon type parameters and the results used to calculate an average RFC for each bogie, from which a suspension factor is derived.
13. In March 2012, Network Rail consulted on several more practical elements of the suspension factors work and several stakeholders expressed concern. As a result Network Rail amended some aspects of the proposals. Freightliner considered that further work needed to be done before the RFC approach could be introduced and was concerned about retention of the current discounts and premia associated with the suspension bands. Network Rail set out its view on the points Freightliner made.
14. Further to consultations Network Rail held a workshop in June 2012 to discuss the 'revised approach' and the CP5 proposal in more detail. As a result of one of the suggestions made at the workshop, Network Rail proposed to replace the original seven discrete suspension bands / factors with a 'continuous approach' which would result in suspension factors reflecting any incremental changes in RFC.
15. Subsequent to the workshop and as reflected in your letter of 16 August 2012³, we were keen that the proposal reflected our PR08 final determination by having the potential to apply to all freight vehicles from the start of CP5. In response Network Rail amended the proposal by giving operators the option to have suspension factors for some or all of their existing vehicles based on the RFC methodology from the start of CP5.

Our conclusions

16. We appreciate that any change in methodology to calculate suspension factors might have significant implications on charges paid by individual freight operators to Network Rail. As

³ http://www.networkrail.co.uk/browseDirectory.aspx?root=\\Regulatory_Documents\\Access_Charges_Reviews&dir=%5cRegulatory%20Documents%5cAccess%20Charges%20Reviews%5cCP4%20Charges%5cH%20-%20CP4%20suspension%20banding%20review

such we are pleased that Network Rail has developed an innovative new approach and gone through a detailed consultation process when reviewing the suspension factors methodology, seeking to address the views and concerns of stakeholders.

17. We summarise the proposals, as stated in Network Rail's letter of 16 August 2012, as follows:
- These conclusions relate to the calculation of suspension factors in the determination of the variable usage charge for CP5.
 - The ride force count (RFC) will be introduced as a metric to calculate suspension factors in the variable usage charge
 - This new approach will apply to all vehicles registered in the rolling stock library after the start of CP5 (1 April 2014)
 - In addition, we are proposing that operators will also have the option to have this approach applied to some or all of the vehicles for which they run services, provided that they provide Network Rail with the RFC for the selected vehicles by the appropriate deadline (which we expect to be in February 2013 for vehicles currently registered) – please see below.
 - Network Rail will use its “revised approach” to calculating the RFC, namely an approach with generic wagon type parameters (principally reflecting different wagon load distributions) used in the modelling process to produce an ‘average’ RFC metric for each bogie type.
 - Operators will also have the option to calculate the RFC for a specific wagon / bogie combination according to the same timescales.
 - Network Rail will retain the current levels of discounts or premia associated with the suspension factors. Our understanding is that Network Rail intends to map the RFC to suspension factor discounts or premia using a continuous piece-wise linear function, where the centre point of each piece is set at the average for the equivalent CP4 suspension factor.
18. As highlighted above, the proposal is for operators to be able to have the variable usage charge for some or all of their existing vehicles (by which we mean vehicle registered in the rolling stock library before the start of CP5) calculated using the RFC methodology from the start of CP5. This feature was added subsequent to the workshop in June 2012 and was shared with industry by Network Rail in a draft of their final proposal one week before that letter was issued. We are minded to accept this proposal but are open to feedback from the industry on this before 22 October 2012. We have also explained our conclusions in the 19 September meeting of the Periodic Review 2013 industry charges group (the VTAC development group).
19. The above point aside, following the detailed work and consultation we are now happy to accept Network Rail's final proposal on a revised methodology to calculate suspension factors as set out in its letter of 16 August 2012. We ask that Network Rail proceed with implementation of the new approach on this basis.
20. The accepted proposal will produce variable usage charges that better reflect relative track friendliness of different vehicle types and send price signals that incentivise the development of more track friendly rolling stock, resulting in reductions in industry costs.

Next steps

21. We expect the timetable for implementation of the suspension bands proposal to be as follows:

- Network Rail's consultants at the University of Huddersfield (formerly based at Manchester Metropolitan University) will develop the RFC software by end of October 2012.
- Using the software freight operators to calculate the RFC for existing vehicles that they wish to have the new approach applied to up to the end of February 2013.
- Network Rail to map the RFC to suspension factor discounts or premia and use the results in their calculation of the CP5 variable usage price list by March 2013.

22. In Freightliner's response to Network Rail's consultation, it argued for the need to improve evidence linking suspension factors to costs associated with levels of track damage. We share this concern and expect Network Rail, during CP5, to improve the evidence base mapping RFC to costs associated with track damage. We welcome Network Rail's commitment, in its letter of 16 August 2012, in this regard and expect research on this area to be implemented in Control Period 6, which we expect to start in April 2019.

23. Our conclusions on suspension bands will be reiterated in a wider conclusions document on track access charges, which we will publish in November 2012.