



Network Rail/Chiltern Railways

Condition 19: Appointment of Replacement Independent Expert for Noise

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Network Rail/Chiltern Railway

Condition 19: Appointment of Replacement Independent Expert for Noise

TWA ref: TWA/10/APP/01:
*(Chiltern Railways (Bicester to Oxford
Improvements) Order, 2012*

October 2014

For and on behalf of
Environmental Resources Management

Approved by: Ian Gilder



Signed: 

Position: Technical Director

Date: 24th October 2014

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ANNEX A - OPERATIONAL NOISE AND VIBRATION CONDITIONS

ANNEX B - EXPERT DETAILS

The Secretary of State has decided to make The Chiltern Railways (Bicester to Oxford Improvements) Order “the Order” with modifications, and direct that planning permission be deemed to be granted, subject to the conditions set out in Annex 1 to the letter from Martin Woods (Head of TWA Orders Unit) dated 17th October 2012 (ref TWA/10/APP/01).

The conditions relating to operational noise comprise 19(1) to 19(14) (A full copy of the Noise and Vibration Conditions is attached here as *Annex A*). The discharge of these conditions requires approval of Schemes of Assessment (SoA) by the relevant local planning authorities (LPA’s). In order to inform the LPA’s respective decisions, a report (or series of reports), prepared by an independent expert (IE) who has been previously approved in writing by the LPA will be produced. The subject of the report which is produced will be the robustness of the noise and vibration-related elements of the scheme of assessment (as specified in conditions 19(9) and 19(10)). There is also a potential role in advising the LPA’s on the assessment methodology to be applied in condition 19(3) if required.

Following the appointment of the separate IE’s for Noise and Vibration by both Cherwell District Council (CDC) on the 7th May 2013 (CDC Ref: 13/00108/DISC) and Oxford City Council (OCC) on the 2nd May 2013 (OCC Ref: 13/00907/CND), it has become necessary to replace Brian Hemsworth as the Noise IE, as he is no longer available to carry out the current phase of work.

Following a review of candidates that could pick up technical work on this project it is proposed to replace Brian Hemsworth as IE for Noise with Rick Jones for the remaining SoA’s. Rick Jones has worked in transport acoustics since 1973, originally through research into road traffic noise characteristics and annoyance, and subsequently, from 1979, working in research, development and consultancy in all aspects of railway noise and vibration. He is therefore considered a suitably qualified replacement for Brian Hemsworth (*Annex B* provides a copy of Rick Jones’ full CV).

The proposed replacement has been discussed with both David Stevens and Rob Lowther (Environmental Health Officers at Oxford City Council and Cherwell District Council respectively) with a copy of Rick Jones’ CV having been provided following their request for a replacement.

The remainder of this document sets out the proposed scope and anticipated time input required from the appointed IE in order that they can provide the appropriate reports and advice to the LPA’s to discharge the requirements of the above conditions. The scope has not changed from what was agreed under the previously submitted scope, as approved under the above

applications (CDC Ref: 13/00108/DISC and OCC Ref: 13/00907/CND), although this document now only refers to the appointment of a replacement IE for Noise. Chris Jones is unaffected as the IE for Vibration.

2.1 KEY TASKS

2.1.1 Introduction

The key tasks for the IE for Noise listed in the planning conditions relate to conditions 19(3), 19 (9) and 19(10). The SoA's that are to be reported on will be provided by Network Rail/Chiltern Railways and its advisors and contractors to show how the standards of mitigation set out in the Policy¹ will be achieved for noise 19(9).

Route Sections have previously been defined and approved (CDC Ref: 13/00106/DISC and OCC Ref: 13/00918/CND) with a separate SoA being produced for each of the Individual route sections.

An initial document setting out in detail the prediction methodologies and the assumptions regarding the train operations used in the SoA's had previously been reviewed and agreed with Brian Hemsworth. This document forms Annex D of the already submitted SoA's to CDC. It is expected that this methodology will be reviewed by Rick Jones to confirm his agreement.

The IE for Noise will be required to review the supporting calculations, or printouts of inputs and outputs from recognised computer software, and to produce a report on the robustness of the noise-related elements of the scheme of assessment.

This will include:

- identification of further baseline measurement that is required;
- prediction of noise levels from the railway in accordance with the Policy and conditions;
- assessment of eligibility for noise mitigation under the Policy;
- review of proposed mitigation measures and their effectiveness;
- proposed mitigation measures for operational noise; and
- predicted residual noise levels with mitigation in place.

The SoA which will include 45 Lakeside, Oxford, must also identify measures that are to be taken to ensure that the noise caused by passing trains in the Studio at 45, Lakeside does not exceed 35dB $L_{Aeq, 30 \text{ min}}$ and 55dB $L_{A1, 30 \text{ min}}$, the standards to be met by music teaching rooms as defined in Building Bulletin 93, Acoustic Design of Schools (Table 1.1). A specific assessment will be provided for this dwelling and included in the scheme of assessment for review by the independent expert.

¹ Noise and Vibration Mitigation Policy - CD/1.29/2.1 - January 2011

3.1 CORE SCOPE

The expected time required for the replacement IE for Noise to review and report on the Schemes of Assessment is summarised in *Table 4.1*.

Table 4.1 *Time Estimate for Expert Tasks*

Assessment	Days
Briefing Meeting	1
Review Noise Schemes of Assessment at General Receptors (typically 150)	5
Review Noise Scheme of Assessment at Wendlebury Gate Stables (will not be required if non-electro acoustic support is required)	3
Review Noise Scheme of Assessment at 45 Lakeside	2

3.2 ADDITIONAL TASKS

Whilst the time inputs above represent a reasonable estimate of the core desktop review work, additional fees or expenses could be incurred if additional meetings are required to discuss specific issues, or if site visits are required. The contract for the work will be between the IE and Chiltern Railways. However, in order to maintain independence, it is expected that communication, in confidence if necessary, might be needed with third parties, in particular the relevant lead officers of the LPA's. Whilst Network Rail/Chiltern Railways would expect to be kept informed of any matters relevant to them, the contract allows for such independent communication to take place, in a confidential manner where necessary.

Additional fees and expenses would need to be approved by Chiltern Railways, in advance of these being incurred, but the authorisation of reasonable fees for the purposes of discharging the planning conditions effectively, including independent communication with the LPA's would not be unreasonably withheld.

In order to facilitate an efficient process for the replacement of the IE for Noise and the conditions discharge the LPA's had previously requested the following to which Network Rail/Chiltern Railways has agreed:

- Provision for confidential communication between the IE and the lead officer for environmental health for each LPA;
- an single initial briefing with both lead officers within 2 weeks of appointment; and

- the submission of the draft reports from the IE to each LPA 2 weeks prior to a final version.

Responsibility for approving the schemes of assessment and discharging the planning condition rests with each LPA, separately, but they have agreed that, as far as possible, to adopt a single agreed approach to technical issues and presentation of the schemes of assessment.

3.3

DETAILS OF CONSULTANT TO BE APPOINTED

A number of consultants with the necessary experience in railway noise mitigation were considered as a replacement for Brain Hemsworth as the IE for Noise. Following consultation with the LPA's and in view of the specialist nature of railway noise, Rick Jones has been commissioned to fulfil the IE role, in relation to noise. Rick Jones has worked in transport acoustics since 1973, originally through research into road traffic noise characteristics and annoyance, and subsequently, from 1979, working in research, development and consultancy in all aspects of railway noise and vibration. Details of his qualifications and experience are listed in *Annex B*.

Annex A

Operational Noise and Vibration Conditions

The conditions are shown below, and the requirements for approval by the local planning authorities and involvement by an independent expert are highlighted in bold.

1. *Operational noise and vibration monitoring and mitigation shall be carried out in accordance with the Noise and Vibration Mitigation Policy, January 2011 (Inquiry document CD/1.29/2.1, referred to in this condition as “the Policy”) and this condition. In the event of any conflict between the two, this condition shall prevail.*
2. *Development shall not commence within each Individual Section, until a detailed scheme of assessment of predicted noise impacts during operation of Phase 1 and 2A of the railway works, predicted vibration effects of the railway with Phases 1, 2A and 2B and details of proposed monitoring and mitigation measures, has been submitted to and **approved in writing by the local planning authority.***
3. *The schemes of assessment of the predicted noise impacts of Phase 1 and 2A and of Phase 2B on the Individual Section or Sections that abut Wendlebury Gate Stables shall also identify measures that should be taken to ensure, insofar as reasonably practicable, that the noise caused by individual passing trains, using the railway, does not significantly impede voice communication over a distance of 30 metres within either the “large riding school” or the “small riding school” at those Stables, or within the paddock opposite Bramlow. For direct voice communications (i.e. without electro- acoustic assistance), the term “not significantly impede” shall be taken to mean that the speech intelligibility shall be at least “fair” at an increased (i.e. “loud”) vocal effort as defined in BS EN ISO 9921:2003 Ergonomics Assessment of Speech Communications. The assessment method used shall be the Speech Interference Level as described in Annex E to that Standard. The assessment shall be based on a native female speaker facing the rider under instruction and the standard to be achieved will be for alert situations where short known words are used and the wind speed is less than 5 metres per second. A correction factor of -5dB shall be used to convert the standard for male voices to female voices. **If personal communications or sound reinforcement systems are proposed, the assessment methodology shall be subject to the approval of the independent expert appointed in accordance with Condition 19.9.** This part of the condition shall not apply if, at the time of assessment, the Stables are no longer a licensed riding establishment under the Riding Establishments Act 1964.*
4. *The schemes of assessment of the predicted noise impacts of Phase 1 and 2A and of Phase 2B on the Individual Section or Sections that abut 45 Lakeside shall also identify measures that shall be taken to ensure that the noise caused by passing trains in the Studio at 45, Lakeside does not exceed 35dB $L_{Aeq, 30 \text{ min}}$ and 55dB $L_{A1, 30 \text{ min}}$, the standards to be met by music teaching rooms as defined in Building Bulletin 93, Acoustic Design of Schools (Table 1.1).*
5. *Where vibration mitigation measures required for Phase 2B can be installed cost-effectively during the Phase 1 and 2A works, this shall be done. All mitigation measures, including those prescribed in the Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996, required for Phase 1 and 2A shall be installed as soon as possible after commencement of the works and no later than the date on which a passenger rail service is resumed on that section of railway.*

6. Any monitoring of noise and vibration shall be undertaken in accordance with the approved scheme of assessment and the Policy.

7. Before the commencement of the laying of the second track between the MoD Depot at Bicester and Islip, a detailed scheme of assessment of the predicted noise impacts arising from the works and from the additional services assessed as likely to operate under Phase 2B in the Environmental Statement and details of proposed mitigation measures, which achieve the standards for noise and vibration attenuation set out in the Policy, shall be submitted to and **approved in writing by the local planning authority**.

8. Any vibration mitigation measures not already installed during the Phase 1 and 2A works necessary for Phase 2B shall be installed during the Phase 2B works. All mitigation measures, including those prescribed in the Noise Insulation Regulations (Railways and Other Guided Transport Systems) 1996, required for Phase 2B shall be undertaken as soon as possible after commencement of the works and completed no later than the date on which the second track is brought into use.

9. The submitted schemes of assessment shall show how the standards of noise mitigation set out in the Policy will be achieved. Supporting calculations, or printouts of inputs and outputs from recognised computer software, shall be provided. **Each scheme shall be accompanied by a report, prepared by an independent expert previously approved in writing by the local planning authority, on the robustness of the noise-related elements of the scheme of assessment.** Noise mitigation measures shall be permanently installed as approved.

10. The submitted schemes of assessment shall show how the standards of vibration mitigation set out in the Policy will be achieved. Supporting calculations or empirical data, or a combination of the two, shall be provided. **Each scheme shall be accompanied by a report, prepared by an independent expert previously approved in writing by the local planning authority, on the robustness of the vibration-related elements of the scheme of assessment.** Vibration mitigation measures shall be permanently installed as approved.

11. The submitted schemes of assessment shall include a list of properties assessed and the results of the assessment at each. By the times that the mitigation measures are due to be brought into use, notice shall be served on the local planning authority of the mitigation measures that have been installed for each property assessed.

12. The situation may arise in which Chiltern finds “not reasonably practicable” the provision of mitigation measures that otherwise would be required by the Policy. In such circumstances, the mitigation measure or an equally effective substitute previously approved in writing by the local planning authority shall be installed in the timescale set out in item 1.10 of the Policy, unless the **local planning authority has confirmed, in writing, its agreement** that the mitigation in question is not reasonably practicable and that there is no suitable substitute.

13. Where noise barriers are promoted in an approved scheme of assessment, they shall be installed only once the **local planning authority has given written approval of their size, appearance and location**. Noise barriers shall be

maintained in their approved form and may be removed only with the written approval of the local planning authority.

14. Development shall be in accordance with the approved schemes and this condition.

Annex B

Expert Details

RRK Jones

Qualifications: BTech, MSc, PhD, FIOA, CEng

Rick Jones has worked in transport acoustics since 1973, originally through research into road traffic noise characteristics and annoyance, and subsequently, from 1979, working in research, development and consultancy in all aspects of railway noise and vibration. He represents the UK railway industry on several European standardisation committees, and routinely provides support to UK Government, the European Commission, and the UK railway industry on environmental noise and vibration matters.

Summary career history:

- 2009 – 2014 Independent Acoustics Consultant
- 1996 – 2009 Team Leader/Subject Expert, Acoustics, BR Research, AEAT Rail, DeltaRail
- 1991 – 1996 Project Manager, Quiet Railway Development Project, BR Research
- 1990 – 1991 Project Planner, British Rail Central Services
- 1988 – 1990 Principal Engineer, Environment Section, British Railways M&EE
- 1984 – 1988 Senior Scientific Officer, Acoustics Unit, BR Research
- 1979 – 1984 Scientific Officer, Physics/Acoustics Unit, BR Research

Selection of Recent Project Experience

- 2014 Common noise prediction method for Europe – implementation**
Technical support to Extrium's contract with the EC to implement the EU common noise prediction method (CNOSSOS) as software, including establishing equivalence processes for a range of existing national rail methods, eg CRN, Nord 2000, Schall 03, RMR.
- 2010-2014 Technical advisor to the UK Railway Noise Technical Working Group.**
Determining the railway industry's response to, and actions arising from, Defra Noise Action Plans resulting from the noise mapping exercise under the Environmental Noise Directive.
- 2010-2013 High Speed 2.**
Acoustics advisor to the HS2 Board.
- 2009-2011 Common noise prediction method for Europe.**
Support to the EC Joint Research Centre in developing the rail elements of a common noise prediction method (CNOSSOS) for application under the Environmental Noise Directive.
- 2008 - 2009 Railway Noise Trajectory.**
Study for the Rail Safety and Standards Board into the trajectory of noise emission from UK railways over time, with projections into the future to inform the process of Noise Action Planning.
- 2007 – 2008 UK Noise Mapping.**
Supporting Defra in the production of Noise Maps for main line railways, trams and metros, under the requirements of the Environmental Noise Directive.

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