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**Guidance on Compliance with Noise and Vibration Legislation in the
Railway Environment**

**Issue One: April 2008
Railway Group Guidance Note**



Documents

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Guidance on Compliance with Noise and Vibration Legislation in the Railway Environment

Issue Record

Issue	Date	Comments
One	April 2008	Original document Issued as a result of the publication of Control of Noise at Work Regulations 2005 and Control of Vibration at Work Regulations 2005

Superseded documents

This Railway Group Guidance Note does not supersede any other Railway Group documents. It contains guidance pointing to where the requirements that replace GM/RT2160 are contained within legislation.

Supply

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Part 1 Introduction

1.1 Purpose of this document

This document has been published by Rail Safety and Standards Board to give guidance on compliance with vibration and noise legislation, as was known to exist at the time of writing, in the railway environment. It is intended to assist infrastructure managers and railway undertakings in understanding their responsibilities in relation to compliance with the legislation. It does not constitute a recommended method of meeting any set of mandatory requirements.

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1.3 Approval and authorisation of this document

The content of this document was approved by:

Rolling Stock Standards Committee on 18 January 2008

This document will be authorised by RSSB on 28 April 2008

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Guidance on Compliance with Noise and Vibration Legislation in the Railway Environment

Part 2 Guidance on Noise

2.1 Scope

- 2.1.1 Part 2 applies to all railway vehicles (locomotives, coaches, wagons, multiple units, on-track machines (OTMs) and possession-only rail vehicles) and portable and transportable plant.
- 2.1.2 This guidance is for individual items and does not cover the noise mapping of the railway environment.

2.2 Legislative and other controls

2.2.1 Noise TSI (2006/66/EC)

- 2.2.1.1 All new railway vehicles are required to meet the Noise TSI (2006/66/EC). New vehicles in this context means vehicles subject to acceptance under the Interoperability of the Conventional Rail System Directive (2001/16/EC). In Britain this is enacted by the Railways (Interoperability) Regulations (SI 2006 No. 397). There is also a requirement to comply with the TSI, as far as reasonably practicable, when modifying or upgrading an existing vehicle. The TSI requires measurement of start-up noise, stationary noise, interior cab noise and pass-by noise sound pressure levels. The TSI sets out the testing requirements and measurement methods, verification of which is required to be made by a notified body.
- 2.2.1.2 The Noise TSI (2006/66/EC) applies to OTMs when they are in travelling configuration. There are currently no mandatory requirements in the Noise TSI for possession-only rail vehicles and OTMs when in working mode.

2.2.2 The Machinery Directives (98/37/EC and 2006/42/EC)

- 2.2.2.1 The Machinery Directives apply to OTMs only in working mode, possession-only rail vehicles and portable and transportable plant. 98/37/EC is currently enacted in Great Britain by The Supply of Machinery (Safety) Regulations 1992 (SI 1992 No. 3073) (as amended). The regulations state that the manufacturer of the equipment is required to reduce the noise level to as low as technically possible, and to publish the actual values where these exceed a sound pressure level of 70 dB (A) Leq and sound power level of 85 dB (A).
- 2.2.2.2 Machinery Directive 2006/42/EC was published in June 2006 and Machinery Directive 98/37/EC will be withdrawn on 29 December 2009. Directive 2006/42/EC requires the supplier to provide the following information on airborne noise emissions:
 - a) The A-weighted emission sound pressure level at workstations, where this exceeds 70 dB (A). Where this level does not exceed 70 dB (A), this fact must be indicated.
 - b) The peak C-weighted instantaneous sound pressure value at workstations, where this exceeds 63 Pa (equivalent to 130 dB in relation to 20 µPa).
 - c) The A-weighted sound power level emitted by the machinery, where the A-weighted emission sound pressure level at workstations exceeds 80 dB (A).
- 2.2.2.3 In the case of very large machinery, instead of the A-weighted sound power level, the A-weighted sound pressure levels at specified positions around the machinery may be indicated.

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2.2.2.4 Where workstations are undefined or cannot be defined, A-weighted sound pressure levels must be measured at a distance of 1 m from the surface of the machinery and at a height of 1.6 m from the floor or access platform. The position and value of the maximum sound pressure level must be indicated.

2.2.3 The Control of Noise at Work Regulations 2005 (SI 2005 No. 1643)

2.2.3.1 These regulations define levels of noise exposure for employees which must not be exceeded. These are called exposure limit values. These values are taken with the hearing protection provided taken into consideration. The values are as follows:

- a) Daily or weekly exposure of 87 dB $L_{EP,d}$ or $L_{EP,w}$
- b) Peak sound pressure of 140 dB (C).

2.2.3.2 These regulations require specific action at specific action values. These specific action values relate to:

- a) The levels of exposure to noise for employees averaged over a working day or week
and
- b) The maximum noise (peak sound pressure value) to which employees are exposed in a working day.

2.2.3.3 The values of the specific action level measurements are:

- a) Lower exposure action values:
 - i) Daily or weekly exposure of 80 dB (A)
 - ii) Peak sound pressure of 135 dB (C)
- b) Upper exposure action values:
 - i) Daily or weekly exposure of 85 dB (A)
 - ii) Peak sound pressure of 137 dB (C).

2.2.3.4 The weekly average noise exposure level can be used where the daily average varies greatly.

2.2.3.5 Guidance on compliance with the Noise at Work Regulations is given in Noise at Work Guidance for Employers on The Control of Noise at Work Regulations 2005 (INDG362(rev1)).

2.2.4 The Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001 (SI 2001 No. 1701)

2.2.4.1 These regulations do not apply to railway trains for carriage of passengers or goods but do apply to machines used for maintenance of the infrastructure. These regulations require the manufacturer of such machines to measure the noise emission levels and publish the data on a plate mounted on the machine. Additionally, some machines are limited to the amount of noise they emit, that is some new machines will have an upper noise emission limit. The list of applicable machines is contained in an amendment order to these regulations (SI 2005 No. 3525).