



OFFICE OF RAIL REGULATION

# ORR position paper on hand arm vibration risk in 2014

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# Hand Arm Vibration Syndrome Position Paper

## Purpose

In April 2014 we published our second [occupational health programme for 2014-19](#) which focuses on embedding the health and wellbeing of railway workers into the culture of our industry. It seeks to move the rail industry beyond consistent legal compliance towards excellence in managing occupational health, ensuring a more efficient, productive and healthier workforce. This position paper supports both our health programme and our [strategic risk priorities document](#), by setting out how we will work with the industry over the next five years to support improved management of hand arm vibration (HAV) risk.

## Vision

1.1 All employers in the railway industry are excellent at proactively managing the risks from using hand-held machinery and power tools.

1.2 There will be no new cases of hand arm vibration syndrome (HAVS) or cases with worsening symptoms in railway workers.

## Aim/Target

1.3 Any work involving hand-held machinery and power tools should be managed to meet the appropriate legal controls and standards to prevent the risks from hand arm vibration (HAV), focussing on alternative and safer methods of work.

1.4 All companies in the rail sector should achieve excellence in the arrangements for health surveillance of HAVs.

## Introduction

1.5 Hand-arm vibration is a widespread hazard in occupations involving the use of hand-held power, hand-guided or hand-fed machines. Prolonged and regular exposure to this vibration can affect the operator's

health, resulting in painful and disabling disorders of the nerves, blood supply, joints and muscles of the hands and arms. These disorders are collectively known as hand arm vibration syndrome (HAVS).

1.6 HSE research during the 1990s estimated that around five million British workers were exposed to hand-arm vibration in the workplace. Approximately 1.7 million were believed to be exposed at levels above the exposure action value, with around 900,000 of these exposed above the exposure limit value in the Control of Vibration at Work Regulation 2005. About 288,000 people were estimated to have a particularly severe form of HAVS, vibration white finger. Cases of carpal tunnel syndrome associated with power tools have been reported in the rail sector.

## What the law requires

1.7 The Control of Vibration at Work Regulations 2005 aim to protect workers from risks to health from vibration. The regulations introduced action and limit values for hand-arm and whole-body vibration.

The regulations introduce an:

- (a) Exposure action value of 2.5 m/s<sup>2</sup> A(8) at which level employers should introduce technical and organisational measures to reduce exposure.
- (b) Exposure limit value of 5.0 m/s<sup>2</sup> A(8) which should not be exceeded.

1.8 Employers should:

- (a) assess and identify measures to eliminate or reduce risks from exposure to hand arm vibration; and
- (b) where required, ensure that control measures to reduce vibration below the action levels are properly applied; and
- (c) provide information, training and health surveillance to employees.

1.9 HSE has produced guidance on the practical solutions employers can take to reduce the risks:

- (a) [Hand-arm vibration at work: A brief guide INDG175\(rev3\)](#)
- (b) [Hand-arm vibration INDG296\(rev1\)](#) and an ACoP
- (c) [Hand-arm vibration – The Control of Vibration at Work Regulations 2005 \(L140\)](#)

1.10 New or worsening cases of HAVS, diagnosed by a medical practitioner, are legally reportable to ORR under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR). Further guidance is on our [web site](#).

## What we have done

1.11 Over the past 3 years we have looked at management of HAV risk by Network Rail (NR), Transport for London (TfL) and their contractors as part of our planned inspection work. We found inadequacies in the management of HAV in mainline infrastructure maintenance and renewals in particular, with standards lagging behind those seen in the rest of the construction sector. We also found weaknesses in NR's arrangement for detecting and reporting HAVS cases under RIDDOR, and suspect that rail contractors may still be reporting some rail HAVS cases to HSE rather than to ORR. Where we have found examples of good practice we have sought to share them via our [quarterly updates](#) on our health programme, and on our web site, for example the Tube Lines good practice HAVS [case study](#).

1.12 ORR now publishes data on the HAVS cases reported to us under The Reporting of Injuries, Diseases, and Dangerous Occurrences Regulations 2013 (RIDDOR) on our National Rail Trends [data portal](#); 305 HAVS cases were reported in Control Period 4 (1 April 2009 – 31 March 2014). We have also worked with NR to agree public reporting on the number and severity of HAVS cases in their workers, in their published [Annual Return](#). We have also provided additional training and internal guidance for our inspectors on HAVS to aid consistency.

## Where the industry is

1.13 There are pockets of good practice within the rail industry on HAV management, including targeted use of continuous monitoring technology fitted to vibrating tools in order to risk assess and manage exposures for higher risk tasks, and wider use of lower vibration tools. TfL has been particularly proactive in substituting hand held vibrating tools with remote controlled equipment, for example for breaking out concrete slab track, and are trialling removal of wall linings using a remote controlled pneumatic cutter. In train carriage refurbishment, a TOC contractor substituted older electric chisels with lower vibration pneumatic chisels to remove carriage flooring. In both cases efficiency savings resulted from the work being done more quickly.

1.14 NR has identified HAV as a key strategic priority under its Worker Health and Wellbeing strategy, with plans to address the significant weaknesses in their historic arrangements for managing HAV risk. A recent internal NR audit identified a number of key actions to improve HAV risk control, and trials are underway in Kent route to find a technical solution to reliably assess and manage HAV exposures for high risk tasks. Reporting of HAVS cases by NR under RIDDOR has improved markedly in the past 3 years, reflecting widespread changes to their health surveillance and reporting systems. We expect the upturn in reported cases to continue in the short term, as health surveillance arrangements mature further.

## What needs to be done and how

1.15 In order for the rail industry to achieve consistent compliance, and move towards excellence in proactively managing HAV risk, we would expect to see:

- a) [the hierarchy of control of risks](#) adopted and properly used, with priority given to elimination and technical controls, rather than organisational controls such as job rotation;
- b) Monitoring and assurance, including internal audits, within railway companies to check and demonstrate that the risks are being properly managed;
- c) Eliminating or minimising HAV risk considered at the design stage and during work planning, and there is increasing evidence of innovation, for example elimination of HAV risk by more use of remotely operated machines.;
- d) Clients set out clear expectations on HAV management by their contractors, and there is active monitoring and assurance on HAV throughout the supply chain;
- e) The procurement process for purchase or hire of tools actively seeks use of lower vibration tools;
- f) Where HAV exposure cannot be eliminated, workers' exposures are effectively managed to the lowest level reasonably practicable, including, for example, targeted use of vibration monitoring equipment for higher risk tasks to provide assurance that controls remain effective; and
- g) Adequate health surveillance arrangements are in place to detect early signs of disease in workers at risk of HAVS and, if they reveal ill health, trigger arrangements to prevent further harm. As well as protecting and managing symptoms in individual workers, collective health surveillance results are used to identify groups of workers or specific tasks at higher risk, and put in place improved risk controls.

1.16 ORR will:

Encourage those duty-holders engaged in maintenance or renewals of premises (includes buildings, rolling stock or infrastructure) to develop a health policy which specifically addresses HAV risk.

Carry out targeted inspections on management of HAV risks, particularly on infrastructure maintenance and renewals, using RM3- health to assess key elements of management capability.

Continue to track progress by Network Rail, at central and route level, in delivering priority work on HAV under their Health and Wellbeing Strategy and action plan.

Continue our work to raise awareness and share good practice on management of HAVS by collaboration with industry, for example on work under the Industry Roadmap; and via our web site, quarterly update on health, and our periodic health e-bulletin.

Continue to report trends in HAVS cases reported to us under RIDDOR (via our National Rail Trends portal), and encourage improved reporting.

Continue work with Network Rail to improve visibility of their health surveillance outcomes on HAVS, via Network Rail's License and published Annual Return.

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