

Dr Chris Nelson

Principal Consultant



BSc(Hons) PhD MIOA

Expertise

Noise:

- Occupational exposure evaluation
- Occupational risk assessment and control
- Machinery safety & conformity

Vibration (hand-arm vibration, whole-body vibration and shock)

- Occupational exposure evaluation
- Occupational risk assessment and control
- Machinery Safety & Conformity

Experience

A Consultant with over 30 years of experience in the field of noise and vibration, mostly in the investigation and prevention of occupational exposures associated with ill health.

Principal Consultant (Noise & Vibration) with Finch Consulting (formerly RHMA) since 2007.

Ten years with the HSE as HM Specialist Inspector (Noise & Vibration). Involved in the development of HSE's technical policies on noise, hand-arm vibration and whole-body vibration, with lead responsibility for the topic of hand-arm vibration. Developed HSE guidance, Regulations, and benchmarks for good practice on control of risks. Supported HSE workplace and supply side inspection, investigation and enforcement as a specialist investigator.

Five years with the Institute of Naval Medicine, providing specialist advice to Ministry of Defence (Navy) on all aspects of human effects of noise and vibration, including specialist noise and vibration measurements, training of noise assessors and technical advice to MoD policy makers.

Eight years with the ISVR, University of Southampton, conducting research and consultancy activities in human effects of hand-arm vibration and whole-body vibration. Included an epidemiological study of vibration white finger and investigations of personal injury claims.

Experience of International (ISO) and European (CEN) Standards making as UK-nominated expert to various working groups dealing with hand-transmitted vibration and vibration emission of machinery. Convenor of hand-arm vibration working groups of ISO (1993-2007) and CEN (1997-2007). Project leader



for BS EN ISO 5349-1:2001 Mechanical vibration – *Measurement and evaluation of human exposure to hand-transmitted vibration – Part 1: General requirements.*

Lecturer contributing annually (1996 – 2004) to the BOHS occupational hygiene training course (Noise and Vibration module) at Portsmouth University.

Professional Qualifications and Memberships

BSc(Hons) Physics with Musical Acoustics, University of Surrey, 1981.

PhD, University of Southampton, 1992. Title of thesis: *Vibration-induced white finger in dockyard employees.*

Corporate Member of the Institute of Acoustics (MIOA), elected 1993.

Member, British Standards Institution (BSI) subcommittee GME/21/6 *Mechanical vibration, shock and condition monitoring – Human exposure to mechanical vibration and shock, since 1993.*

Chairman, British Standards Institution (BSI) Panel GME/21/6/1 Hand-arm Vibration, since 1993.

Postgraduate Certificate in Occupational Health and Safety, Aston University, 2001.

Selection of Experience

Occupational Disease

Engineering Evidence

Acts as an Expert Witness providing engineering evidence in relation to occupational disease claims for noise-induced hearing loss, hand-arm vibration syndrome/carpal tunnel syndrome and whole-body vibration injuries.

Author of several hundred reports for the Court, advising on likely level of exposure and risk, common law and statutory duties, risk control, expected standards and compliance.

Reported on cases in a wide range of sectors including agriculture, armed forces, ceramics, chemical products, construction, education, emergency services, energy/extraction (mining), engineering, food and drink, foundries, grounds maintenance, hospitality, joinery, manufacturing, minerals, motor vehicle repair, ports, power generation, printing, services, steel fabrication, textiles, transport, utilities, woodworking.

Experience of conducting site inspections, and preparing joint statements.

Experience of giving evidence in court.

In recent years approximately 95% of instructions have been on a single joint basis, and the remainder split between instructions on behalf of Claimants, and Defendants.

Workplace Risk Management

Noise and Vibration

Consultancy on the management of risks from occupational exposure to noise, hand-arm and whole-body vibration.

Advises on exposure levels and associated risk and compliance issues in occupational situations.

Conducts measurements of noise and vibration as appropriate and where required.

Advises on expected standards and established good practice and practical steps for control of risks and compliance with the Control of Noise at Work Regulations 2005 and the Control of Vibration at Work Regulations 2005 and other relevant legal requirements.

This includes advice on management strategies, technical/organisational control, personal protection, instruction and training and health surveillance systems.

Supply of Machinery Safety and Compliance

Noise and Vibration

Advises on the safety of machinery and equipment with respect to noise and vibration emissions.

Advises on compliance with essential requirements for the design, and construction of machinery, declaration of emissions, information on residual risks and instructions for safe use, against legal



requirements based on European Directives 2006/42/EC *Machinery* and 2000/14/EC *Outdoor Equipment*.

Harmonized Standards relating to the design, and construction of machinery for minimal noise and vibration emission and to the measurement and declaration of noise and vibration emissions.

Employment History



Finch Consulting Limited

Principal Consultant

2007 - Present

Health and Safety Executive

HM Specialist Inspector (Noise & Vibration)

1997 - 2007

Institute of Naval Medicine (Ministry of Defence)

Head of Acoustics and Vibration

1992 - 1997

Institute of Sound & Vibration Research (University of Southampton)

Research Assistant/Research Fellow

1984 - 1992

Dawe Instruments Ltd

Development Engineer

1981 - 1984

Selected Publications



Chapter on hand-arm vibration in: Pattys Industrial Hygiene, Sixth Edition, Edited by Vernon E. Rose and Barbara Cohrssen. John Wiley & Sons, Inc. (2011).

Vibration content of machinery safety standards: the requirements of European legislation. C M Nelson & P F Brereton. Proceedings of the 11th International Conference on Hand-Arm Vibration. Bologna, Italy, 2-7 June 2007.

The implementation of European Directive 2002/44/EC in Great Britain. C M Nelson. Proceedings of the 11th International Conference on Hand-Arm Vibration. Bologna, Italy, 2-7 June 2007.

European legislation and standardisation for the control of risks from vibration at work. C M Nelson. Proceedings of the First American Conference on Human Vibration. Morgantown, West Virginia, USA. June 5-7 2006.

Managing risks from hand-arm vibration. C M Nelson. Article in UK Plant Guide 2007/08.

Practical assessment of risk from hand-arm vibration. C M Nelson. Euronoise 2006. Tampere, Finland, 30 May - 1 June 2006.

The European Vibration Directive. C M Nelson & P F Brereton. Industrial Health. 2005, 43, 472-479.

Exposure evaluation and risk assessment for hand-arm vibration. C M Nelson. Proceedings of the 10th International Conference on Hand-Arm Vibration. 2004. Las Vegas, USA.

Dose-response patterns for vibration-induced white finger. M Bovenzi, M J Griffin & C M Nelson. Occupational and Environmental Medicine 2003; 60 16-26.

The standard frequency weighting for hand-transmitted vibration: implications of a proposed revision. C M Nelson. 9th International Conference on Hand-Arm Vibration, 5-8 June 2001, Nancy, France.

Successful management of exposure to hand-arm vibration. C M Nelson & P F Brereton. Proceedings of the Institute of Acoustics. 2001. Vol 22 Part 2. 509-515.

Measurement and evaluation of human exposure to hand-transmitted vibration: recent work on International and European Standards. C M Nelson. Proceedings of the Institute of Acoustics. 1999.