Policy on Controlling Noise at Work

Contents

1. Policy
2. Responsibilities
3. Procedures and guidance
4. References and further reading
5. Document management table

Appendix 1: Noise monitoring and risk assessment form

1. Policy

Prolonged exposure to noise at work can cause hearing loss, which is often permanent. Hearing loss caused by work is preventable, but once someone’s hearing has gone, it will not come back.

Loughborough University will put in place measures to protect employees from the risks of noise induced hearing loss (and tinnitus), which can be caused by exposure to excessive noise. These measures will include:-

a) Assessing the risks from noise exposure
b) Taking measures to reduce noise exposure where a risk assessment shows that this is necessary
c) Ensuring the level of noise generated is taken into account when a new piece of equipment is purchased or hired
d) Providing hearing protection where necessary if risks cannot be adequately reduced by other means.
e) Providing training and information for employees on the risks from noise and the measures in place to reduce these
f) Providing health surveillance where the risk assessment shows that this is appropriate.

This will enable the University to satisfy its obligations under the Control of Noise at Work Regulations 2005 (“the Noise Regs”) and the Management of Health and Safety at Work Regulations 1999.

This policy does not cover the environmental aspects of noise and noise pollution; or the adverse effects on wellbeing which can arise from ‘nuisance’ noise which is below the levels likely to cause deafness.

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Version 5 December 2016
2. Responsibilities

a) Head of School

- Nominate a person or persons within the School or Departments to support the implementation of the Noise Regs within the School, Department or Professional Service, and ensure they have the necessary skills and competence.
- Support the nominated person(s) in implementing measures to comply with the Noise Regs.
- Ensure all managers and employees within the School / Department / Professional Service, discharge their responsibilities in accordance with this policy.

b) Managers and Supervisors

- Understand the scope and content of the Noise Regs where this is relevant to work in their area.
- Ensure noise factors are taken into account when hiring or purchasing new equipment.
- Ensure that necessary noise risk assessments have been undertaken for any equipment used by those in their charge.
- Implement and enforce noise control measures, in conjunction with the nominated person or School / Departmental Safety Officer, (SSO / DSO).
- Ensure employees are suitably trained in all aspects of operating equipment, including noise control

c) School / Departmental Safety Officer

- Understand the scope and content of the Noise Regs.
- Identify whether formal noise risk assessment is required within the School / Department / Professional Service.
- Ensure noise factors are taken into consideration when hiring or purchasing new equipment
- Work with the University Health and Safety Service (H&SS) in order to ensure;

d) Employees

- use all equipment and noise control measures in accordance with instruction,
- wear hearing protection where required,
- maintain hearing protection and any other noise control equipment,
- report any defects or difficulties with hearing protection and any other noise control equipment,
- co-operate with any programme of health surveillance which is identified as necessary following risk assessment.

e) University Health and Safety Service
When requested by the SSO / DSO or equivalent:

- carry out sound level measurement where appropriate,
- advise on noise control measures,
- advise whether health surveillance is appropriate,
- providing training for nominated persons (SSO’s / DSO’s or equivalent), to ensure they are competent to carry out the activities outlined in (see f) below
- audit compliance with this policy and the underpinning regulations.

f) Occupational Health

- Provide health surveillance on request.
- Give feedback and guidance on risk to individuals following health surveillance.
- Feedback group results from health surveillance to the appropriate manager.
- Advise the appropriate manager if there are restrictions on an individual’s ability to work in a noisy area due to health risks.

3. Procedures and guidance

a) Exposure Action Values and Exposure Limit Values

- Lower Exposure Action Value - 80dB(A) (personal exposure averaged over a day)
- 135 dB(C) Peak Sound pressure
- Upper Exposure Action Value - 85dB(A) (personal exposure averaged over a day)
- 137 dB(C) Peak Sound pressure

Wherever exposure at or above these levels occurs, certain actions are required. Where exposure is very varied, average exposure may be calculated over a week rather than a day.

- Exposure Limit Value – 87dB(A) (exposure averaged over a day or a week)
- 140 dB(C) Peak Sound Pressure

This is the maximum sound exposure permitted for any individual and takes hearing protection into account, e.g. it is the actual sound exposure of the individual "at the ears", following any attenuation from hearing protection.

b) Risk assessment

A noise risk assessment is required wherever it is likely that exposure will occur at or above the Lower Exposure Action Value.

As a guide to this, the following may be considered:
• If noise is intrusive but normal conversation is possible, likely noise level is approx. 80dB.
• If you have to shout to talk to someone 2m away, likely noise level is approx. 85 dB.
• If you have to shout to talk to someone 1m away, likely noise level is 90dB.

The decibel scale used to measure noise is logarithmic. An increase in 3 dB equates to a doubling of sound. The increase from 80 to 85 dB is almost a four-fold increase in sound level.

A tractor, a power mower and a hand drill are each likely to generate at least 90dB (A). A chain saw may be well over 100dB (A).

Personal noise exposure is a function of noise level and length of exposure. An individual working in an area where the noise level was 80dB would have a personal exposure of 80dB if he or she worked there for 8 hours per day. Working in an area where the noise level was 85 dB for 2 hours per day would also give a personal exposure of 80 dB.

Where noise exposure is accompanied by exposure to vibration or to some chemicals such as solvents, the risk of adverse effects may be higher at a given noise level.

A formal, documented risk assessment should be carried out if any individual works in an area exceeding 80 dB on a regular basis (e.g. 4 hours or more, most days or if noise levels exceed 85dB, even if exposure is infrequent or irregular.

If risk assessment is deemed not to be necessary this should be recorded, for example as part of a department or section’s general risk assessment.

Risk assessment requires:-

• assessment of the level and type of noise; this may come from manufacturer’s data for individual pieces of equipment, or from sound level measurement, especially where multiple pieces of equipment operate in an area simultaneously. Additional noise e.g. from background music should also be included;
• identification of who might be affected;
• the likely exposure time of those individuals, taking into account working patterns, noise exposure during breaks etc;
• assessment of indirect risk e.g. the risk of individuals not hearing warning alarms due to the noise level;
• consideration of additional risk factors such as the presence of vibration or solvents.

The risk assessment should include an action plan which documents the measures already in place to reduce the risk from noise exposure and any further measures planned.
The noise risk assessment can be a stand-alone document, or can be incorporated into the overall risk assessment document for a department or process where this is more appropriate. A form for the purpose can be seen at; http://www.lboro.ac.uk/admin/hse/forms/forms.html, and at Appendix 1. It has been developed to record all necessary information to ensure the assessment is adequate.

The HSE’s exposure calculators and ready-reckoners

To assist you with your risk assessment, the HSE’s noise exposure calculators can help you work out your daily noise exposure, weekly noise exposures, and estimate the performance of hearing protection.

The noise exposure ready-reckoners allow you to estimate daily or weekly noise exposure. To use the daily exposure ready-reckoner you will need to know the levels of noise and durations of exposure which make up a person's working day. For weekly noise exposure, appropriate where somebody's noise exposure varies markedly from day to day, you will need to know the daily noise exposure for each day in the working week. These ready-reckoners can be printed for completion by hand. (Note; The link to the HSE’s Noise webpages and in particular, to the HSE Noise calculator and ready reckoner, is given in Section 4 below).

The risk assessment should be reviewed if there is any change in noise exposure, changes in personnel, machinery or the law or simply if people think the existing assessment is no longer valid, and at intervals of no longer than 2 years.

The risk assessment for noise, and any associated measurement should be carried out in conjunction with the H&SS to ensure that the assessor has the necessary skills and experience.

c) Reducing noise exposure

Measures should be put in place to reduce risks from noise exposure to as low a level as reasonably practicable, even if noise levels are below the Lower Exposure Action Value. Consideration should be given as to whether further reductions are practical.

Wherever noise levels may exceed the Lower Exposure Action Level (e.g. personal exposure exceeding 80 dB), assistance should be sought from the H&SS to assist with risk assessment and noise reduction.

Formal measures to reduce noise exposure must be introduced if the upper exposure action value is exceeded, e.g. personal exposure is above 85dB. Provision of hearing protection is not an adequate solution in these circumstances. PPE is the last resort or should be used in conjunction with other measures such as engineering controls.

Personal noise exposure MUST NOT exceed the Exposure Limit Value of 87dB. (This measurement takes into account the effect of hearing protection (e.g. PPE)).

Measures to reduce noise exposure may include:-

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Version 5 December 2016
- Replacing tools and equipment with alternatives which create lower levels of noise.
- Ensuring all equipment is properly maintained.
- Reducing exposure by reducing time exposed to noise.
- Shielding or enclosure (of either a piece of equipment or the operator).

Detailed guidance on ways of reducing noise exposure can be found in; “Controlling Noise at work: the Control of Noise at Work Regulations 2005. Guidance on Regulations”.

d) Hearing Protection

Hearing protection can be used as an additional measure once noise has been reduced as far as is reasonably practicable by other means; or as an interim measure pending noise reduction. It must not be used as the sole method of protection if personal noise exposures exceed the upper action value (85dB)

Hearing protection should be made available on request if noise exceeds the lower action value (80dB)

Any area where noise levels exceed 85 dB (or peak sound level of 137dBC) must be designated as ‘Hearing Protection Zones’ and marked with appropriate signage. Within these areas, wearing of hearing protection will be compulsory, even though exposure may only be for short periods of time.

Hearing protection provided must be suitable for the levels and type of noise individuals are exposed to. Guidance on choosing suitable hearing protection can be found in “Controlling Noise at work: the Control of Noise at Work Regulations 2005. Guidance on Regulations”.

Hearing protection should be stored properly, well maintained, and regularly inspected by a competent person.

e) Health Surveillance

Health surveillance (audiometry) must be carried out for employees who are regularly exposed to noise above the upper exposure action value (85 dB)

Health surveillance will also be offered to those exposed above the lower exposure action value if they are at increased risk e.g. if they report a known sensitivity to noise damage or a family history of early deafness.

Where health surveillance is required it will usually be carried out annually for two years then 3 yearly. Wherever possible, audiometry for new employees (or those newly exposed to noise within the University) should be carried out prior to any noise exposure.

Health surveillance will be carried out by Occupational Health. All individual records will be held in confidence. Where appropriate, a summary of results for groups of employees will be reported back to a relevant manager to indicate the effectiveness of noise management systems.
f) **Training and information**

All employees who are exposed to noise above the lower exposure action value should be given training to include:-

- The adverse effects of noise
- The results of the local risk assessments
- The measures in place to reduce noise exposure
- The need for hearing protection
- The correct use of hearing protection
- The need for health surveillance
- The responsibilities on employees

Face to face training may be provided by the SSO / DSO if they are competent to do so, or training can be arranged through the H&SS. Alternatively the provision of information may be achieved by distributing leaflets or cards.

Measures must be in place to ensure that new employees receive appropriate training prior to exposure to noise.

4. **References and further reading**


*Noise at Work: A brief guide to controlling the risks*; INDG 362 (rev2) HSE Books ISBN 0 7176 64825

*Noise : Don't lose your hearing*; INDG 363 (rev2) HSE Books ISBN 0 7176 6510

HSE Noise calculator(s); [http://www.hse.gov.uk/noise/calculator.htm](http://www.hse.gov.uk/noise/calculator.htm)

HSE Noise at Work website; [http://www.hse.gov.uk/noise/about.htm](http://www.hse.gov.uk/noise/about.htm)

5. **Document management table**

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Appendix 1: Noise Monitoring and Risk Assessment Form

Part A of this document provides a record of the survey parameters.

Part B of this document provides a record of noise measurements obtained for individual items of equipment or at specific locations. It is also essential to document the time individuals are exposed to particular noise levels, as risk assessment is based on overall noise exposure. A calculation of daily personal exposure to noise (L_{ep,d}) is required; a calculator tool to help with this is available at www.hse.gov.uk/noise/calculator.htm.

Part C identifies controls which are required to minimize the risk of noise related ill-health. This section of the form must be completed locally by the person in charge of the workspace, with assistance from the noise surveyor and/or H&SS if required.

Part D of this document provides a record of the action plan to implement the necessary controls identified as part of the risk assessment. These controls must be brought to the attention of anyone who is exposed to the noise from the equipment surveyed.

Further information on risk assessment and on compliance with “The Control of Noise at Work Regulations 2005” can be found in the University policy on controlling noise at work, http://www.lboro.ac.uk/admin/hse/occupational/downloads/noise%20policy.pdf and in the HSE document; L108: “Controlling Noise at Work: The Control of Noise at Work Regulations 2005. Guidance on Regulations”; The noise risk assessment must be forwarded to individuals on the above circulation list and the risk assessment should be reviewed if there is a change in the level of noise (e.g. due to equipment change) or the usage etc. (E.g. increased exposure time).

Part A - Survey parameters

<table>
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<th>Location</th>
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<td>Date and time of survey</td>
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<td>Survey carried out by</td>
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<td>Other persons present</td>
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<td>Reason for survey</td>
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<td>Equipment used</td>
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<td>Test run time</td>
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<td>Date of calibration</td>
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All measurements are taken at the location where an operator would typically stand and at a suitable head height.
# Part B – Noise Survey and Exposure

<table>
<thead>
<tr>
<th>Ref No</th>
<th>Location/Item of Equipment</th>
<th>Noise level ( (L_{Aeq})^* )</th>
<th>( L_{Cpeak}^* ) (plus noise type if applicable) ( (Continuous, transient, impulsive) )</th>
<th>( L_{Ceq}^* )</th>
<th>Exposure time</th>
<th>Exposure Points</th>
<th>Equivalent ( L_{ep,d} ) for this location/item of equipment</th>
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</table>

**Cumulative \( L_{ep,d} \) for exposure to multiple noise sources**
Who is exposed to this noise risk?

Are any of these individuals known to have pre-existing susceptibility to noise?

*LAeq and LCpeak measurements are required to help decide on the level of risk and what control measures are required.

*LCeq is not required when determining risk. However, if hearing protection is one of the control measures recommended following risk assessment, LCeq will be needed to determine whether the chosen protection is suitable, using the formula $L'A = LCEq - SNR + 4$

( L'A is the actual level of sound at the ear when hearing protection is in use and needs to be between 70dB and 80dB; SNR is Single Number Rating, this is provided by the manufacturer)

*Noise type (High, Medium or Low frequency) is only required for noise with a peak pressure (LCpeak) greater than 135dB(C); again, this is needed to assess whether hearing protection is suitable.

**Part C Control Measures**

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<th>Control measures</th>
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<th>No</th>
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<tbody>
<tr>
<td>1. Is hearing protection mandatory – e.g. hearing protection zones must be marked?</td>
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<tr>
<td>2. Is hearing protection recommended?</td>
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<tr>
<td>3. Can the noise source be eliminated?</td>
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<tr>
<td>4. Is additional maintenance required to reduce noise levels e.g. by lubrication, tightening, cleaning etc of equipment?</td>
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<td>5. Can the equipment be modified to reduce noise at source, e.g. damping, silencers, baffles etc fitted?</td>
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<td>6. Can inherently quieter components be selected e.g. slotted circular saw blades on woodworking equipment or quieter fans?</td>
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<tr>
<td>7. Can the equipment be isolated i.e. removed to another location away from people at work?</td>
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<td>Question</td>
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<td>8</td>
<td>Can the equipment be enclosed?</td>
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<td>9</td>
<td>Is a noise refuge area needed?</td>
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<td>10</td>
<td>Can absorptive material be used to deaden noise in the workspace?</td>
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<td>11</td>
<td>Do staff need training or information on the noise risks?</td>
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<td>12</td>
<td>Is health surveillance required?– (for all with $L_{ep,d}$ in excess of 85 dB)</td>
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**Explanatory Notes**

**Lower Exposure Action Value** — 80dB (A) (personal exposure averaged over a day) or 135 dB(C) Peak sound pressure.

**Upper Exposure Action Value** — 85dB (A) (personal exposure averaged over a day) or 137 dB(C) Peak Sound pressure.

**Hearing Protection zone** - Any area where noise levels exceed the Upper Exposure Action Value must be designated as ‘Hearing Protection Zones’ and marked with appropriate signage. Within these areas, wearing of hearing protection will be compulsory, even though exposure may only be for short periods of time.

**Hearing protection** Hearing protection can be used as an additional measure once noise has been reduced as far as is reasonably practicable by other means; or as an interim measure pending noise reduction. It must not be used as the sole method of protection if personal noise exposures exceed the upper action value (85dB).

Hearing protection provided must be suitable for the levels and type of noise individuals are exposed to.

Hearing protection should be made available on request if noise exceeds the lower action value (80dB)

**Health Surveillance** is required for those who are exposed at an $L_{ep,d}$ of 85dBA or above. It should also be provided for those exposed at an $L_{ep,d}$ of 80dBA who are known to be vulnerable to noise related hearing loss.
## Part D Action Plan

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**Risk assessor:**

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Note: Exposure calculators and ready-reckoners

The noise exposure calculators can help you work out your daily noise exposure, weekly noise exposures, and estimate the performance of hearing protection.

The HSE web pages have links to enable you to calculate daily, weekly exposure and hearing protection calculators.

The noise exposure ready-reckoners, found via the same web pages, also allow you to estimate daily or weekly noise exposure. To use the daily exposure ready-reckoner you will need to know the levels of noise and durations of exposure which make up a person's working day. For weekly noise exposure, appropriate where somebody's noise exposure varies markedly from day to day, you will need to know the daily noise exposure for each day in the working week. These ready-reckoners can be printed for completion by hand.