

Relevant Legislation

The Noise at Work Regulations 2005

Introduction

Loud noise could be described as unwanted, distracting or annoying sound which has the potential to cause physical damage to the body for example, temporary or permanent hearing loss.

Hearing Loss

People often experience temporary deafness or reduction in hearing sensitivity after leaving an area where high levels of noise are produced. Normally, their hearing recovers within a few hours however, this should not be ignored. These symptoms are an indication that continued exposure to the noise could eventually lead to permanent hearing damage. Permanent hearing damage can also be caused immediately by sudden, extremely loud, explosive noises, for example, from guns or cartridge operated tools.

However, hearing loss is usually gradual through prolonged exposure to noise. Generally, it is only when damage caused by noise combines with general hearing loss due to ageing that people realise how deaf they have become. Signs of this include:

- family members complaining about the television being too loud.
- being unable to keep up with conversations in a group, or
- difficulties when using the telephone.

Eventually everything becomes muffled and people with hearing damage find it difficult to catch sounds like 't', 'd' and 's', so they confuse similar words.

In addition, hearing loss is not the only health problem associated with excessive exposure to noise. People may develop tinnitus (ringing, whistling, buzzing or humming in the ears), a distressing condition which can lead to disturbed sleep.

Control of Noise at Work Regulations 2005

The Control of Noise at Work Regulations are intended to protect against risks to health and safety from exposure to noise, risk of hearing damage and other risks, such as interference with the employee's ability to hear instructions or warnings.

The regulations introduce action values at which employers must control noise exposure. The regulations also include a new limit value which must not be exceeded. The requirements for noise risk assessment and the provision of suitable control measures have been revised, though they remain broadly similar to previous requirements. However, the requirements for suitable health surveillance are more stringent since regular exposure at or above the upper exposure action value will pose a risk of hearing damage.

Exposure Limits and Action Values

Noise is measured in decibels (dB). However, it is often written with the annotation dB(A) which means 'A-weighted'. The 'A-weighted' scale is widely used for noise measurement as it closely mirrors the audible range of the human ear. The 'C-weighting', written as dB(C), is also used to measure peak, impact or explosive noises. Understanding these "weightings" is necessary when assessing the exposure limits and exposure action values. The regulations require employers to take specific action at specific values. These relate to:

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

These values are:

Lower exposure action values: - A daily or weekly exposure of 80 dB(A) or a peak sound pressure of 135 dB(C)

Action required: - Where employees are exposed to noise levels at or above 80dB(A), but below 85dB(A), they are entitled to request hearing protection which must be provided free of charge.

Upper exposure action values: - A daily or weekly exposure of 85 dB(A) or a peak sound pressure of 137 dB(C)

Action required: - Exposures of 85dB(A), employers must devise, implement and maintain a noise control programme. This will include providing hearing protection

and information, instruction and training. Where hearing protection is provided the employer must enforce its use and those exposed must use it.

The use of a weekly exposure, rather than a daily exposure can be used where exposure to noise varies from day to day, for example, the use of power tools one day but not on others. In addition, when determining an employee's exposure in relation to the upper or lower action values, the reduction in noise exposure offered by hearing protection should not be taken into account.

There are also levels of noise exposure which must not be exceeded:

Exposure limit values:

- daily or weekly exposure of 87 dB(A)
- peak sound pressure of 140 dB(C)

When determining an employee's exposure in relation to exposure limit values, the reduction in noise exposure offered by hearing protection must be taken into account.

Measurement of Noise

The noise action levels are based on an employee's exposure over eight hours. However, most machinery is used intermittently and it is therefore necessary to calculate fractional levels of exposure. This is further complicated by the fact that the decibel scale is logarithmic. For ease, it should be remembered that the noise level doubles when the level is raised by 3dB(A). However, this does not take into consideration any other noise that a person is exposed to during the day, so that the margin for safety is less than this figure suggests.

The table below shows the relationship between noise levels and the level of exposure that may damage hearing.

Noise level	Duration which equates to second action level – 85 dB(A)
85 dB(A)	8 hours
88 dB(A)	4 hours
91 dB(A)	2 hours
94 dB(A)	1 hour
97 dB(A)	30 minutes
100 dB(A)	15 minutes
103 dB(A)	7.5 minutes

Assessment of Exposure

The purpose of the risk assessment is to enable employers to decide whether employees are at risk from exposure to noise and what action may be necessary in order to prevent or adequately control that exposure. The assessment is more than just taking measurements of noise and in some cases measurements may not even be necessary. The risk assessment should:

- identify where there are risks from noise and who is likely to be affected.
- contain a reliable estimate of employees' exposures, and compare the exposure with the exposure action values and limit values.
- identify what is needed in order to comply with the law for example, whether noise-control measures or hearing protection are needed, and, if so, where and what type.
- identify any employees who require health surveillance and whether any are at particular risk.

Employers need to ensure that the estimate of their employees' exposure is representative. It needs to take account of the work they do or are likely to do, the ways in which it is carried out and how it varies from one day to the next. The estimate must be based on reliable information for example:

- actual measurements taken at a workplace.
- information from other workplaces similar to the one being measured.
- data from suppliers of machinery or tool hire companies.

Employers should "so far as is reasonably practicable" control the risk of noise. The findings of the risk assessment must be recorded and an action plan produced in order to detail the necessary action. The plan will identify what has been done, what action is still outstanding and include a timetable which will detail who is responsible for ensuring the work is implemented.

A risk assessment must be carried out where employees are likely to be exposed to noise at or above the lower exposure action values. The risk assessment must be carried by a competent person. Examples of areas and work activities that may require assessment include construction work, grounds maintenances and arboriculture, machinery workshops, printing processes, boiler rooms, plant rooms and areas which contain air compressors.

An assessment may also be required where noise becomes intrusive for most of the working day, for example where an extraction system runs continuously throughout the day, or where employees have to raise their voices to hold a normal conversation 2m away from each other.

When an assessor is satisfied that noise levels are below the first action value of 80dB(A) they should record this in the assessment and no further action is required. However, when estimates approach the action values or exposure limit, noise measurements will most likely be required to determine specific noise levels. These noise measurements will normally be carried out by the Health and Safety Team. In all cases the assessment should be recorded and reviewed at least every two years, or when there is a significant change that may invalidate the original assessment.

Control of Exposure

Employers must put in place suitable control measures in order to eliminate the risks from noise, where reasonably practicable. Where this cannot be done, then the risks should be reduced to as low as reasonably practical by engineering and management controls. The use of hearing protection in isolation must not be used to control an employee's exposure to noise.

Where employees are exposed at or above the second action value of 85dB(A), employers need to produce a planned programme of noise control measures. The immediate risks can be managed by the provision of suitable hearing protection. However, employers should also identify short and long term measures to reduce noise exposure and produce a timetable for their implementation.

Hearing Protection


When employees are exposed to noise levels at or above 80db(A), but below 85db(A), they are entitled to request hearing protection which must be provided free of charge. Information, instruction and training on the risks to hearing from their equipment, process or activity should also be provided by the employer. This would include information about any hearing protection provided, where and how it should be used and the correct way to clean, store and maintain it.

At or above exposures of 85db(A), employers must devise, implement and maintain a noise control programme. This will include providing hearing protection and information, instruction and training. Where hearing protection is provided the employer must enforce its use and those exposed must use it.

Hearing protection must be suitable for the environment, comfortable for the wearer and compatible with other personal protective equipment, such as safety helmets, respirators or eye protection. Information and advice on ear protection is available from the Health and Safety Team.

Hearing Protection Zones

Hearing Protection Zones should be designated in areas where exposure to noise is above the upper action value of 85dB(A). These areas must be clearly marked "Ear Protection Zone" and suitable signs should be displayed to indicate that hearing protection is mandatory in these areas.

Colour	Meaning or purpose	Instruction and Information	Text	
Blue	Mandatory sign	Specific behaviour or action; for example: wear ear protection	Ear protection must be worn	

New Machinery, Equipment or Plant

There is a duty on manufacturers to ensure that all new machinery, equipment or plant is designed and constructed to ensure that the noise produced is as low as possible. They should also produce a 'Declaration of Conformity' to show that it meets the necessary health and safety requirements. Manufacturers should also be asked to provide information about noise emissions under actual working conditions, as well as any specific instructions for installation and assembly that may reduce noise.

Health Surveillance

New or existing employees who will be regularly exposed to noise levels at or above the second action value of 85d(A), must be included in a health surveillance programme. Managers should refer these employees to the Occupational Health Unit by using the appropriate forms.

The purpose of health surveillance is to:

- warn employers when employees might be suffering from early signs of hearing damage.
- give employers an opportunity to do something to prevent the damage from becoming worse.
- check that control measures are working.

Information, Instruction and Training

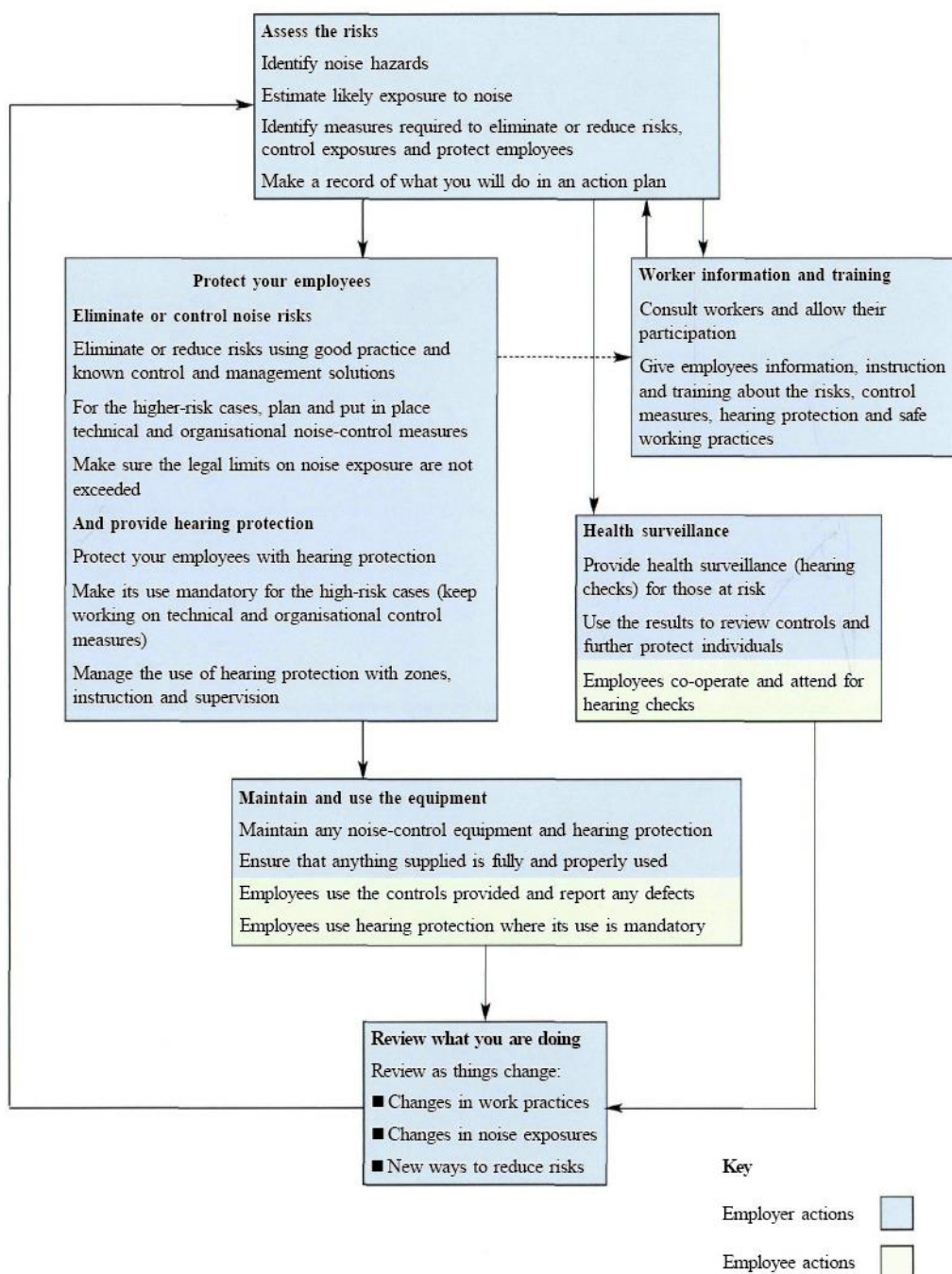
The importance of training should not be understated and in many cases an employee's exposure to noise will be determined by their diligence in using control measures and adhering to good practice. Employees at risk from exposure to noise must understand the risks to their health, the control measures in place to control their exposure, and the importance of using these measures appropriately. Training records should be regularly maintained.

Guide to Noise Levels

Activity	dB(A)
Quiet office	40-50
Normal conversation	50-60
Loud radio	65-70
Tractor cab	75-85
Busy street	78-85
Power drill	90-100
Heavy lorry (7m away)	95-100
Bar of a night club	95-105
Road breaker	100-110
Chain saw	115-120
Jet aircraft taking off (25m away)	140

The flow chart detailed below provides Managers with a logical step by step guide to controlling noise in their workplace.

Managing noise risks



* Reproduced from HSE publication L108 Controlling Noise at Work

Arrangements within Each Directorate

Controlling Noise at Work

In accordance with current legislation and Northumberland County Council's Corporate Health and Safety Policy Statement all Directorates within the County Council must devise and implement procedures to ensure the following objectives are achieved:

- Identify Noise hazards.
- Estimate likely exposure to Noise.
- Identify measures required to eliminate or reduce risks, control exposures and protect employees.
- Draw up, implement and record an action plan.

In order to achieve the above objectives the relevant Director is responsible for ensuring that suitable and sufficient arrangements are made to fulfil the requirements detailed below:

1. Assign Responsibilities

Identify the relevant Managers/Supervisors responsible for controlling the work and ensure they are aware of their responsibilities in this regard and that they are competent to discharge them.

2. Assess the risks

Managers/supervisors responsible for controlling employee's exposure to noise must:

- Eliminate or reduce risks by implementing good practice, suitable control measures and management solutions.
- For the higher-risk cases, plan and implement technical and organisational noise-control measures.
- Ensure the legal limits on noise exposure are not exceeded.

3. Training and Competence

Managers responsible for controlling employee's exposure to noise must:

- Be competent to do so.
- Ensure those supervising or completing the work are competent to do so.
- Consult with employees and allow their participation.
- Give employees information, instruction and training about the risks, control measures, hearing protection and safe working procedures.

4. Provision of Hearing Protection

The person responsible for controlling employee's exposure to noise must:

- Protect employees by supplying suitable hearing protection.
- For high risk cases ensure hearing protection is mandatory, hearing protection zones are identified and that information, instruction, training and supervision are given.
- Provide health surveillance for those at risk for example, health questionnaires and audiometric testing.