OCCUPATIONAL NOISE SURVEY AT

CLIENT NAME,

TOWN/CITY/SITE NAME

ADDRESS

Date of Survey: DATE
Carried out by: NAME
Function: Consultant
Report No: J-xxxxv1
Date of Report: DATE
1. EXECUTIVE SUMMARY – OCCUPATIONAL NOISE SURVEY REPORT

1.1 Introduction
This noise survey has been undertaken to reassess the noise levels present at the site of client
name, site, town, following some machine changes. The following activities, machines and noise
sources were included:
- Machine Shop A - Holz Beam Saw, LEV motors & Veneer Department
- Machine Shop B - CNC machines, HolzHer machine, Holy-tek machine, buffering machine,
circular saw, over & under planer, small band saw and LEV motors.
- Joinery Shop - Compressed air tools, drilling, stapling, screwing and hammering, compressor to
  back of room
The details of the noise measurements taken are in section 2.1 onwards of this report together with
results tables and diagrams towards the rear of this document.

1.2 Methodologies
All noise measurements were taken using the principles laid down in the HSE's "Controlling Noise at
Work" - Guidance on the Control of Noise at Work Regulations, 2005, L108, Part 2 and the
Appendices.

During the day of the survey, spot measurements were taken throughout the factory on a regular
basis in order to ensure that, as far as possible, all noise sources were identified and assessed. In
addition personal dosimeters were used to assess personal exposure on a cross section of
employees. This report and its data may be used as a basis for you to update your noise risk
assessment for your workplace.

Envirocare is UKAS accredited for the performed measurement part only of this survey’s results and
report and not the opinions and interpretation part that is contained within this report.

1.3 Conclusions & Recommendations
The following conclusions may be drawn based on the normal shift pattern:-

- Noise exposure based on projected daily personal noise exposure values (LEP,d) is likely to be over the Upper Exposure Action value of 85dB(A) for operatives in the following areas:
  - The feed end of the Holz Beam Saw in Machine Shop A
  - All areas of Machine Shop B excluding the walkway
  - Operatives carrying using a staple gun or hammering in the Joinery Shop.
Hazardous noise levels in these areas are likely to cause long term hearing damage and as such these areas should be designated as Hearing Protection Zones. Within these areas all operatives
  and visitors should wear suitable hearing protection on entry to that area.

- Noise exposure is likely to be between the Lower and Upper Exposure Action values of 80 – 85dB(A) for operatives in the following areas:
  - The Joinery Shop
  - All areas of Machine Shop A, excluding the feed end of the Holz Beam Saw.

These areas should be designated as a ‘Noise Hazard Area’ where operatives and visitors are advised to wear suitable hearing protection on entry to that area.

- In the following areas noise levels are below any legislative action level and no action is required:
1.4 Employer’s Responsibilities according to the law

- To ensure effective compliance with the Noise at Work Regulations 2005 all employees should be made aware of their situation and given correct instruction and training of exactly when and where they should be wearing their hearing protection and in the correct manner to ensure optimum noise reduction.
- Hearing protection should be selected that does not interfere with existing PPE and is comfortable to wear and does not over protect.
- Audiometric testing of all employees exposed to hazardous noise levels (85dB(A) and above, or at lower levels where the assessment shows it necessary, should be undertaken regularly to ensure that the control measures and systems are working effectively.

1.5 Noise Reduction Measures to Consider

- Investigate the physical state of the machines and check that they are as well maintained as possible to minimise noise.
- Implement a positive purchase policy in relation to noise regarding selection of alternative quieter tools, machinery and techniques; consult with suppliers for information and progress.
- Consider instruction and training of staff or task rotation for some noisier jobs and for noise minimisation when using certain machines where work practices may differ.
2. INTERPRETATION OF RESULTS

Personal dosimeters tend to overestimate the noise exposure, due to the possibility of reflections from the person and a range of measurement errors of +/-2dB(A) are likely. Spot measurements at operator positions tend to underestimate noise exposure levels, due to the difficulty of maintaining a hand held meter close to a moving operator's head. In addition, the sample time is short and does not always fully reflect the full cycle of operations.

Greater emphasis is therefore placed upon the personal monitoring results since they better reflect the noise exposure experienced by the operator. The reader's attention is drawn to the fact that The Control of Noise at Work Regulations (2005) define the onset of "Exposure Action Values" in terms of the magnitude of the daily personal noise exposure value, LEP,d.

The results shown in this report have been compiled in order to comply with Regulation 5 of The Control of Noise at Work Regulations 2005 on maintaining records. Thus, the names of operators undergoing personal monitoring have been included.

When the results of this survey are presented to employees, it is important to recognise that personal monitoring results identify the likely noise exposure at a particular operating site. Thus where a particular action is necessary as a result of high noise exposure, all employees likely to operate at that operating site must be fully briefed as to the necessary steps that must be taken.

Projected daily personal noise exposure values (LEP,d ) are given in Table 1. Reference position numbers (x) shown below, refer to Table 1. Representative spot sound pressure level measurements are shown in figures 1, 2, 3 and they are referred to below as spot measurements.

The detailed implications of these results will now be discussed by factory area.

2.1 General Observations

Hearing Protection Zones (HPZs) have been established in Machine Shops A and B at Client name. The Joiners' Shop has been designated as a Noise Hazard Area where operatives are advised to wear hearing protection.

The zones are mostly clearly signed at the entrance to and around the areas. The vast majority of operatives wore their hearing protection whilst working in the Hearing Protection Zone. However, operatives were not observed to wear hearing protection in either of the Noise Hazard Areas.

A variety of protection is readily available to operatives in the form of:

- E.A.R Soft Yellow Neon ear plugs (SNR 36)- Available from a dispenser on the wall of the office in Machine Shop A
- Blue Arco Peltor Octave 2 ear defenders
- Yellow JSP, J-Muff ear defenders.

On the day of the noise survey production levels were at average levels. Audiometric testing is undertaken periodically by the company as a programme of health surveillance to monitor any damage to hearing.

2.2 Machine Shop A

Personal monitoring results are shown in Table 1 and the spot measurement results are shown on Figure 1. The vast majority of operatives were observed to wear hearing protection in this HPZ area.

Background noise levels in this area ranged between 76-81dB(A) with less than 80dB(A) recorded on the walkway. The main source emanated from beaming activity at the feed end of the Holz Beam Saw, with noise levels ranging between 83 to 86dB(A). One personal reading was obtained from the
Beam Saw operative (ref.no. 1) working predominantly in this area. With a projected \( L_{EP,d} \) of 87dB(A), which is above the Upper Exposure Action value, this is reflective of the spot measurements taken. A particularly loud noise source was the LEV motor to the side of the machine at 88dB(A). However, operatives are unlikely to spend much, if any, time in this area. The LEV motor to the side of the Kuper machine was much quieter at between 83-84dB(A), with the nearby radio measuring 82dB(A) at 1 metre back. A spot measurement was taken at the ear of the employee working at the Veneer Department bench, with a reading of 80dB(A), which is reflected in the personal monitor (ref.no. 2) where 80dB(A) was also recorded. This is between the Lower and Upper Exposure Action value where hearing protection should be advisory.

2.3 Machine Shop B

Personal monitoring results are shown in Table 1 and the spot measurement results are shown on Figure 1. All operatives were observed to wear hearing protection in this HPZ area.

Background noise levels in this area ranged between 73-88dB(A) with less than 75dB(A) recorded on the walkway. Spot measurements taken to the front of the room around the Interwood Press, adjacent bench and storage area were all less than 80dB(A). Noise levels began to increase further into the room, with background levels ranging between 84-88dB(A) whilst all the machines were running. The Delmac GT CNC produced noise levels of between 85-86dB(A) with noise levels at the adjacent bench ranging between 81-82dB(A) when the machine was running. The Morbidelli CNC machine was much quieter at between 79-80dB(A) with 80dB(A) being reached at the controls to the side of the Delmac GT CNC machine. Three personal readings were taken from operatives working on these machines (ref.nos. 3, 4 & 5), with projected \( L_{EP,d} \) s of 86, 82 and 88dB(A) respectively. The range in values may be due to the difference in noise levels between the two CNC machines. It is likely that the operative with the quieter reading spent the majority of their time working on the Morbidelli machine, whereas operatives with louder readings are likely to have spent more time working on the Delmac machine. Operatives with the two highest readings also worked on other louder machines such as the Holz Her SPRINT and the Buffering machine, so are representative of the spot measurements taken. A peak and overload were encountered on V. Urban’s dosebadge (ref.no. 3) indicating possible contamination of the reader, which could have resulted from a sudden loud noise or knock to the badge. Two of these readings (ref.nos. 3 & 5) are above the Upper Exposure Action value, with the quieter reading (ref.no. 4) being between the Lower and Upper Exposure Action value.

Noise levels on the Buffering machine ranged between 86-93dB(A) with 90dB(A) being recorded at the operative’s ear. The nearby Wadkin Spindle was another loud noise source, measuring 90dB(A) at the operative’s ear. At the other side of the room, the main noise source emanated from the Holz Her SPRINT machine, with noise levels of between 85-89dB(A) being recorded. The much smaller Holy Tek machine produced a reading of 87dB(A) when running, but was not used on the day of the survey.

Many of the wood working machines to the back of the room produced high noise levels, but their use was less frequent, usually with only one of these machines running at any one time. The circular saw measured 88dB(A) at the operative’s ear and 86dB(A) at one meter back, with 84dB(A) being recorded to the side of the LEV motor at around 5 meters away. The band saw measured 90dB(A) whilst wood was being sawn and 89dB(A) with just the machine running. 93dB(A) was recorded at the over & under planer whilst wood was being fed through the machine, and 89dB(A) was recorded with only the machine running. Background noise levels in this area were taken without these machines running and ranged between 80 to 84dB(A). One personal reading was taken from the wood machinist working on these machines with a projected \( L_{EP,d} \) of 87dB(A), which is above the Upper Exposure Action value. This is representative of the spot measurements taken, since the operative was not working continuously on the noisiest machines.

2.4 Joinery Shop
Personal monitoring results are shown in Table 1 and the spot measurement results are shown on Figure 2. Operatives were not observed to wear hearing protection in this Noise Hazard Area.

Background noise levels in this area ranged between 68-83dB(A), with 83dB(A) only being found when nearby hammering was taking place. The noise make-up in this area consisted of various hand held tools being used to build office furniture, which were often loud, but infrequent in nature. The loudest noise source was from mallet hammering where 88dB(A) was recorded at the operative's ear. A personal reading was taken from S. Crawley (ref.no. 8), who was a joiner using this tool. 87dB(A) was recorded, which is above the Upper Exposure Action value and representative of the spot measurements taken.

Hammering in other areas measured 87dB(A). Other noise sources included stapling, which ranged from 83-89dB(A), drilling at between 74-81dB(A) and screwing at between 80-85dB(A). Where there was a combination of two different noise sources present, namely stapling and hammering, 87dB(A) was recorded. Another personal reading was taken from G. Thomson (ref.no. 7), a joiner working at the other side of the Joinery Shop, who was mainly screwing and drilling. At 82dB(A) this is between the Lower and Upper Exposure Action value, and is considered to be representative of the spot measurements taken during these activities.

2.5 Suitability of Ear Protection Equipment

Frequency analyses of the more extreme noise sources encountered at Client name, town, were conducted at a number of areas around the site (see Table 2). Table 3 shows that even when the two worst noise locations (locations 3 - The Sedgewick Over & Under Planer & location 6 - The Middle Spray Booth in the Polish Department in Table 2) are encroached upon, the attenuation offered by the most commonly used ear protection (E.A.R Soft Plugs) brings the noise well within safe levels. With high original total Band Power Levels (BPL(A)) levels of 93.6dB(A) and 89.8dB(A) at locations 3 & 6 respectively, the protected levels drop to 60.8 and 56.4dB(A).

The HSE recommends that hearing protection is selected so that daily exposure is reduced to at least below 85dB(A) and must be below 87dB(A). Ideally you should aim for between 75 and 80dB(A) at the ear. Avoid hearing protection that results in less than 70dB(A). Since protected levels are so low, they are over protecting workers and as such employees are more likely to remove them in order to communicate with fellow workers. Also, the hearing protection, when worn, could also lead to a sense of isolation and prevent staff hearing alarms or passing vehicles within the workplace.

From the results indicated above the E.A.R Soft Plugs are over protecting in both of the areas. Hence in this area hearing protection with a lower SNR (Single noise rating) should be used. Table 3b shows more suitable hearing protection, where for locations 3 and 6, protected levels based on the assumed protection level of the E.A.R Ultrafit ear plugs, drop to 78.6 and 74.7dB(A) respectively, which is still well within safe levels. Other brands of suitable hearing protection are available.
3. METHODOLOGY

The survey was carried out using the following methods:
1. General noise levels in background areas of the factory were assessed by spot measurements (see Figures 1, 2, 3).
2. Personal noise exposure of a representative selection of employees was measured for comparison with the relevant action levels during the normal and overtime shifts (see Table 1).
3. For areas and machines which generated high noise levels or noise of an annoying nature, a frequency distribution analysis was carried out (see Tables 2 & 3).

3.1 Spot Measurements
All spot noise measurements were carried out using a Class 1 integrating sound level meter, Cirrus Research plc., model CR:821B which complies with BS 6698 (IEC 804). The meter was calibrated on site, prior to and after the measurements being taken, using the Cirrus, Class 1, CR 515 calibrator which supplies a 94dB sound level (serial no.43720). This meter is capable of measuring the value of equivalent continuous sound level (Leq) over the whole day, or over sample periods (Leq(s)) from which LEP,d can be calculated. The C weighted Peak noise levels were also measured to ensure that the Peak of 140dB(C) was not exceeded.

General area noise levels in various areas of the factory were made by holding the CR:821B at approximately 4 feet above ground level and 2ft in front of the body, taking a sample sound level measurement integrating over 1 min, i.e. a Leq(s). Noise levels at particular manned machines were taken with the noise meter in the position where it was estimated that the operator was likely to receive the maximum exposure. A sample sound level measurement integrated over at least 1 minute (i.e. a Leq(s)) was taken. Sometimes this sample period was longer (up to 3-8mins) to encompass an entire cycle of work. The spot measurement results are shown on the figure and the arrowhead denotes the position and direction that the measurement was taken from.

3.2 Personal Exposure Measurements
Operators were identified for personal monitoring to represent a cross-section of the types of work conducted and potential problem areas. Each employee was fitted with a dosemeter during normal work activities.

The dosemeter used is the CR:100B doseBadge; Personal Noise Dosemeter used in conjunction with the RC:100B Reader Unit, both are designed to meet the requirements of IEC 61252:1993. The doseBadges are calibrated via an internal Acoustic Calibrator within the reader unit at 114dB(A). All doseBadges were calibrated before and after use. The doseBadges have a threshold of 80dB and a measuring range from 80 to 140dB with an "A" frequency weighting.

The Cirrus doseBadges have a ‘peak’ exposure level of 140dB(A). All monitoring results that showed any such high noise events have been highlighted in Table 1 and where possible explanations described in the report regarding the potential reasons.

3.3 Frequency Distribution Analysis
The Class 1 integrating sound level meter, Cirrus Research plc., model CR:821B, which complies with BS 6698 (IEC 804), was used to determine the frequency distribution of sound at the louder noise sources found during the survey. The meter was calibrated on site, prior to and after the measurements being taken, using the Cirrus CR 515 calibrator which supplies a 94dB sound level.

3.4 Technical Equipment Requirements
The various measurement equipment that is used is older than the date of the requirements of the Control of Noise at Work Regulations 2005. However, paragraph 59 (page 100) of these 2005 regulations states that this equipment can be used. It states that, ‘older instruments are not invalidated when standards are superseded. Older instruments that meet the requirements in


column 3 of Table 8, are also suitable for workplace noise measurements’. This applies in the case of our instruments.

3.5 Implications of Working Hours
The daily personal noise exposure levels, $L_{EP,d}$, are defined in terms of the noise dose exposure experienced by a worker during a working day of 8 hours. The working day at Client name is based around a day shift that starts at 7am and finishes at 3:15pm. The day shift is calculated as 7.6hrs of actual working time after excluding the 40 minutes of total breaks. From April 2010 overtime and night shifts will not be worked by employees. All projected $L_{EP,d}$ values quoted have been calculated to represent the projected noise exposure during the normal working day.

4. REPORT DETAILS

Date of survey: DATE

Report written by: A. Name
Consultant

Checked by: A. Name
Title

Report Date: DATE.
## Table 1 - Noise Exposure Survey at company name, town on date - Projected Personal Noise Exposure Levels

<table>
<thead>
<tr>
<th>Area/Operator/Machine</th>
<th>Monitoring Ref. No.</th>
<th>Monitoring Time (hrs)</th>
<th>Flag Raise</th>
<th>Dosimeter result*</th>
<th>Normal Shift**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Shop A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. name - Holz Beam Saw operative</td>
<td>1</td>
<td>02:50:22</td>
<td></td>
<td>87</td>
<td>87</td>
</tr>
<tr>
<td>A. Name - Veneer Department</td>
<td>2</td>
<td>02:49:44</td>
<td></td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Machine Shop B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Name - CNC &amp; Holzher machine operative</td>
<td>3</td>
<td>02:53:44</td>
<td>X</td>
<td>86</td>
<td>86</td>
</tr>
<tr>
<td>A. Name - CNC machine operative</td>
<td>4</td>
<td>02:57:59</td>
<td></td>
<td>83</td>
<td>82</td>
</tr>
<tr>
<td>A. Name - CNC machine operative</td>
<td>5</td>
<td>02:04:02</td>
<td></td>
<td>89</td>
<td>88</td>
</tr>
<tr>
<td>A. Name - Wood Machinist</td>
<td>6</td>
<td>02:59:39</td>
<td></td>
<td>87</td>
<td>87</td>
</tr>
<tr>
<td>Joinery Shop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Name - Joiner</td>
<td>7</td>
<td>02:51:31</td>
<td></td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>A. Name - Joiner, mostly hammering</td>
<td>8</td>
<td>02:05:17</td>
<td></td>
<td>88</td>
<td>87</td>
</tr>
</tbody>
</table>

# See Noise Report for details & significance of flag raise.

* Based on an 8-hr working time - no breaks included.

** Based on a 7.6-hr actual working time - (8.25hr shift less total breaks of 40mins).

<table>
<thead>
<tr>
<th>Block Shading Key dB(A)</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below Lower Action Value</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Above Lower but below Upper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above Upper Action Value</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
## Table 2: Frequency Analysis Results

<table>
<thead>
<tr>
<th>Loc. No.</th>
<th>Area / Machine / Position</th>
<th>Frequency (Hz) - BPL dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Machine Shop A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Holz Beam Saw LEV motor</td>
<td>46  54  72  74  71  73  82  80  79</td>
</tr>
<tr>
<td>2</td>
<td>Machine Shop B</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Holzner 1317 Machine</td>
<td>34  57  64  74  78  82  86  77  67</td>
</tr>
<tr>
<td>3</td>
<td>Sedgwick Over &amp; Under Planar</td>
<td>42  50  68  85  84  89  88  85  68</td>
</tr>
<tr>
<td>4</td>
<td>Buffering Machine</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Circular Saw</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Polish Department</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spray Booth</td>
<td>48  54  65  79  85  86  82  71  64</td>
</tr>
</tbody>
</table>

## Table 3a - Assessment of Suitability of Available Hearing Protection

<table>
<thead>
<tr>
<th>Frequency Analysis Results dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location 3</td>
</tr>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Hz</td>
</tr>
<tr>
<td>31.5</td>
</tr>
<tr>
<td>63</td>
</tr>
<tr>
<td>125</td>
</tr>
<tr>
<td>250</td>
</tr>
<tr>
<td>500</td>
</tr>
<tr>
<td>1K</td>
</tr>
<tr>
<td>2K</td>
</tr>
<tr>
<td>4K</td>
</tr>
<tr>
<td>8K</td>
</tr>
<tr>
<td>Total BPL</td>
</tr>
</tbody>
</table>

*Based on Assumed Protection Level of E.A.R Soft Plugs.

## Table 3b - Proposed Hearing Protection

<table>
<thead>
<tr>
<th>Frequency Analysis Results dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location 3</td>
</tr>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Hz</td>
</tr>
<tr>
<td>31.5</td>
</tr>
<tr>
<td>63</td>
</tr>
<tr>
<td>125</td>
</tr>
<tr>
<td>250</td>
</tr>
<tr>
<td>500</td>
</tr>
<tr>
<td>1K</td>
</tr>
<tr>
<td>2K</td>
</tr>
<tr>
<td>4K</td>
</tr>
<tr>
<td>8K</td>
</tr>
<tr>
<td>Total BPL</td>
</tr>
</tbody>
</table>

*Based on Assumed Protection Level of E.A.R Ultrafit 20.
Figure 1 - Noise Survey of Machine Shops A & B at company name, site, date

<table>
<thead>
<tr>
<th>Location</th>
<th>Machine Shop A</th>
<th>Machine Shop B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**KEY**

- 1min. Leq Spot measurement Results dB(A)
- X = Frequency Analysis
- @ear = Ear protectors
- Radio
- Noise Hazard Area
- Hearing Protection Zone

**Schematic as at date**

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Figure 2 - Noise Survey of Joiners Shop and Polish Department, company name, site on date

Joinery Shop

- Circular Saw (Off)
- Pillar Drill (Off)
- Pillar Drill
- MHH 150
- Storage
- Bench
- Desk
- Hearing Protection Zone

Polish Department

- Bench
- Drying Rack
- Spray Booth

Spray Booth

- Drying Rack
- Door to canteen
- Door to M/C Shop B

KEY

1 min. Leq Spot measurement Results dB(A)
- X = Frequency Analysis
- R = Radio
- ✔ = Hearing Protection Zone
- Noise Hazard Area

Schematic as at Date
APPENDIX – FURTHER INFORMATION & LEGISLATION

CONSIDERATIONS WHEN ASSESSING RISKS

• **Noise risk assessment** - the regulations state that the noise risk assessment should be reviewed, updated and recorded, when there is any change in your workplace or employee exposure. Even if it is considered there have been no changes, the risk assessment should be reviewed at least every two years. This may or may not require another noise measurement survey that this report is based on.

• **Particular workers of concern** - some workers may need to have particular consideration, such as those with a pre-existing hearing condition, deafness family history (if known), pregnant women, inexperienced and young people. The Management of Health and Safety at Work Regulations 1999 prohibits employers from employing anyone under 18 where there is a risk to health from noise.

• **Consider other exposure effects** in the workplace as some studies have suggested that there is a link between exposure to hand-arm vibration and hearing loss, and particular chemicals (e.g. solvents such as toluene) and noise exposure. This means that workers who are exposed to these combinations may be more vulnerable to noise-induced hearing loss than for individual agents alone. If it is considered that there is a potential increased risk of hearing damage then consider whether their exposure can be limited by reducing the time spent on particular tasks. It may also be necessary to increase the frequency of health surveillance for those workers and monitor the results.

• **Consult** with workers concerned and their representatives to inform, seek advice, help and co-operation. This may help with compliance with hearing protection policies.
**LEGISLATION**

**Duties under the Control of Noise at Work Regulations 2005**

Under the "Control of Noise at Work Regulations 2005" (the Noise Regulations 2005), the employer has to take certain basic steps where an employee is likely to be exposed to noise at or above the "Lower Exposure Action Value (LEAV)". For this purpose noise levels must be measured as "Daily Personal Noise Exposure Levels, $L_{EP,d}$".

<table>
<thead>
<tr>
<th>Action level</th>
<th>Definition</th>
<th>Employer's Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lower (EAV)</strong></td>
<td>Daily personal exposure ($L_{EP,d}$) of 80-85dB(A) (taking no account of hearing protection).</td>
<td>Exposure between Lower &amp; Upper requires employer to provide protectors to employees who ask for them. Not compulsory to be worn.</td>
</tr>
<tr>
<td><strong>Upper (EAV)</strong></td>
<td>Daily personal exposure ($L_{EP,d}$) of 85dB(A) (taking no account of hearing protection).</td>
<td>Exposure above Upper level requires employer to provide protectors to all workers and to ensure that they are used. Employees have a duty to protect themselves.</td>
</tr>
<tr>
<td><strong>Exposure Limit Value (ELV) Dose</strong></td>
<td>Daily (or weekly) (8hr) dose of any employee, including use of hearing protection, must be below 87dB(A).</td>
<td>Employer must ensure that any hearing protection provided must be satisfactory to deal with the type of noise encountered.</td>
</tr>
<tr>
<td><strong>Exposure Limit Value (ELV) Peak</strong></td>
<td>A peak sound pressure level of 200 pascals (Lower EAV of 135dB referenced to 20μPa, Upper EAV of 137dB, Peak ELV of 140dB; (all dBC)).</td>
<td>Exposure above Peak level requires employer to provide protectors to all workers and to ensure that they are used. Employees have a duty to protect themselves.</td>
</tr>
<tr>
<td><strong>Weekly Average Exposure Dose</strong></td>
<td>Exposures may be calculated over a week rather than a day where noise varies greatly.</td>
<td></td>
</tr>
</tbody>
</table>

**Relevant Actions to be Taken When Exposure above Lower or Upper Action Value:**

Employees who are likely to be exposed to noise levels in excess of the Lower Exposure Action Value (LEAV) or the Upper Exposure Action Value (UEAV) should be informed of the results of this noise survey and the necessary actions should be explained.

Exposure to noise levels between the Lower and Upper EAVs thus places responsibility upon the employee to choose whether or not they want to wear ear protection equipment, once he/she has been informed of the noise level in his/her work area.

Employees should be given adequate instruction and training on the risk to hearing and on the correct use of ear protector equipment, as indicated by Regulation 10 of the Control of Noise at Work Regulations 2005.

Suitable hearing protectors should be provided by the employer. Alternative types of ear protection equipment should be provided (i.e. disposable plugs or ear muffs) so enabling employees to choose the equipment that best suits them based on comfort and other personal factors (e.g. hair, earrings, glasses, other PPE). The HSE noise guide states; "Wherever possible the employer should make more than one type of protector available (making sure that each is suitable for the noise and jobs to be done) to allow the user a personal choice ".

Machines that have shown spot or personal measurements to be over the Lower or Upper EAV should either have their noise levels reduced in some way or signs should be placed on them warning of the potential noise hazard. Signs should be located at all entrances to the zones and at appropriate places within as necessary. Signs introduced under the 1989 Regulations that refer to “Ear Protection Zones” are acceptable and need not be changed.
Action to be Taken When Exposure Greater than Upper Exposure Action Value (EAV):

**Regulation 6(1)** of the Control of Noise at Work Regulations makes a statutory requirement on the employer “to ensure that risk from exposure of his employees to noise is either eliminated at source or, where this is not reasonably practicable, reduced to as low a level as is reasonably practicable”. This may mean for example, carrying out some improvements to the machines/tools at the sources of the noise as highlighted in report.

**Regulation 7** of the Control of Noise at Work Regulations 2005 – ‘Hearing Protection’ states:

**7(2)** …“if an employer is unable by other means to reduce the levels of noise to which an employee is likely to be exposed to below an Upper EAV, he shall provide personal hearing protectors to any employee who is so exposed.

**7(3)** If in any area of the workplace under the control of the employer an employee is likely to be exposed to noise at or above an upper EAV for any reason the employer shall ensure that -

(a) the area is designated a “Hearing Protection Zone”;

(b) each hearing protection zone is demarcated and identified by means of the sign specified…. in paragraph 3.3 of Part II of Schedule 1 to the Health & Safety (Safety Signs & Signals) Regulations 1996; and -

(c) access to the area is restricted where this is practicable and the risk from exposure justifies it.

And shall ensure so far as is reasonable practicable that no employee enters the area unless that employee is wearing hearing protectors”. (emphasis added).

Regarding other means of noise control that is provided, **Regn 8(1)** states that “The employer shall - ensure, so far as is practicable, that anything provided by him in compliance with his duties under these regulations to or for the benefit of an employee, other than personal hearing protectors provided under regulation 7(1), is fully and properly used; and…maintained in an efficient state.”

This would apply to noise control equipment such as enclosure doors.

The guidance of Regulation 7 (paragraph 90) outlines that “Hearing Protection Zones can be fixed locations or mobile, and be permanent or temporary, depending upon the nature of the activities and the source of noise.” Thus, where the designation of a HPZ is not reasonably practicable (i.e. where a particular process or tool is mobile, or used for a short period of time), then warning signs should be put in place either on the tool or in the vicinity of the process. These should instruct operatives to wear hearing protection during this time. All others working near to such operations (i.e. within 10m) should also be informed of the noise hazard and of the necessary actions to take. Guidance should also be given using warning notices, responsibilities, information, instruction and training on use, storage, cleaning and replacement of protection.

It is important therefore, that checks are undertaken to ensure that the protectors are worn in the area designated as a HPZ, as outlined in Regulation 8 of the Noise at Work Regulations – Maintenance & Use of Equipment’.

When any noise reduction measures have been carried out a recheck of the personal and static noise levels should be performed to reassess the designated HPZ’s and reviewed periodically.