

Noise Control Audit

Defining Best Practice



"...identified over £1,000,000 of cost savings on noise control across one site..."

The new noise regulations require a seismic shift in attitude to noise management in the workplace. Quoting guidance - **"these regulations are concerned with controlling noise, not measuring it..."**. Consequently, companies must now quantify their noise control options rather than simply repeating risk assessments that usually include little or no information on the topic. Moreover, hearing protection can no longer be used for long term risk management unless it can be proved that noise control is impractical.



Instead of paying for unnecessary repeat risk assessments under the new regulations, implement a noise control programme that actually reduces the risks - and pays for itself ...

The most effective way to meet these regulatory requirements is the INVC Noise Control Audit - either in place of a repeat risk assessment (saving the associated costs) or appended to a conventional risk assessment update. It is an engineering audit that generates a costed list of the noise control options and associated benefits either for a single machine or for a whole site using the best of current technology. The results not only provide the basis for planning the most practical and cost effective noise control programme possible, they also provide certification for plant where it is shown that noise control is not practical.



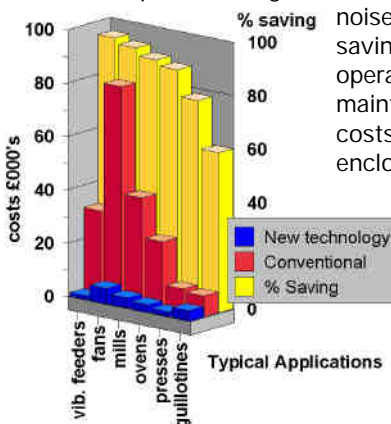
The Audit Technology

The INVC has a well earned reputation for developing innovative, practical and low cost solutions to a wide range of noise problems. The success of our approach has made us the company of choice in this field for a diverse range of companies such as Cadbury, GlaxoSK, CMB, CompAir and many others. We have built-up the largest database of engineering source control solutions available and the sophisticated analysis techniques and software we have developed allows us to assess options on-site in a fraction of the time required for traditional assessments. Moreover, the costs of control often prove to be an order of magnitude lower than expected.

The Case Studies - Self Financing Noise Control

Our current record for a Noise Control Audit was to identify over £1,000,000 of savings on noise control across one site alone (from a budget of £1.6 million). The company had been advised to fit enclosures to much of the plant. Once installed, these not only caused serious productivity and industrial relations problems, but noise levels were still too high. Our brief was to find a way to avoid copying the enclosures to other sites and to remove the existing enclosures without compromising noise levels.

The audit showed that it was possible to achieve lower noise levels without the enclosures by using source control techniques. Testing demonstrated substantially lower noise levels, a dramatic cost saving and high levels of operator approval. The maintenance and productivity costs associated with the enclosures were eliminated, significantly reducing production overheads.



This graphically illustrates the benefits of commissioning an audit prior to spending money and resources on noise control.

... 50% - 90% cost savings on virtually any noise control project that is based on conventional techniques ...

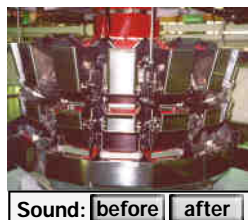
Cadbury - Best Practice in Action

Cadbury took a very proactive approach to the regulations by commissioning a Noise Control Audit for their UK sites instead of repeating noise surveys. The resultant recommended control programme would allow de-regulation of half the production areas (reducing the number of personnel who must wear PPE) - and without operational or hygiene problems.

It should also pay for itself in seven years.

Weighing Machines

The budget cost for the conventional enclosures normally used to reduce the noise from weighing machines in the food industry was about £320000 for the 50 machines used across a company (c 5dB(A) off the typical 95dB(A) noise levels). The Audit recommended using innovative source control techniques that reduce the noise by c 10dB(A) with no effect on normal operation, hygiene or access - and at a third of the cost of the enclosures.



Tray Washing Lines

Two new automated lines had failed to meet the Christian Salvesen noise specification. The audit predicted both the cost and the precise noise levels that could be achieved using engineering control techniques. Following implementation, noise levels were reduced to the predicted 82dB(A). Moreover, the manufacturer has adopted the more effective, lower cost and more practical INVC technology as standard practice across their lines on other sites.

noise control audit

The Noise Control Audit Programme

Initial Engineering Audit

The objective is to provide detailed information on the noise control options for all the selected noise problems using the best of current technology. This can then be used as the basis for planning the most practical and cost effective noise control programme possible. It can also be used as evidence that "best practicable means" have been considered. Where the only noise control option(s) for a machine is not practical, we can provide a technical note to that effect (ref. regulatory requirement for proof that control is impractical before PPE can be used as a long term risk management measure). The usual programme involves the following steps:-

- 1 Initial visit to carry out diagnostic noise and vibration measurements and to discuss operational constraints. This allows all the potential noise sources in each priority item of plant to be ranked in order of their contributions to the overall level. Many items of plant can be covered in a short time as we use sophisticated recording and analysis techniques.
- 2 Once the results have been analysed, then the conclusions are provided in a brief report that includes the following elements:-
 - an outline of all the noise control options for each item of plant
 - the estimated implementation costs for each of the options (typically split into development cost; materials cost; man days (skilled fitter))
 - the likely noise reduction that would be achieved for each of the options
 - operational advantages/disadvantages (where appropriate) for each of the options

... commissioning a Noise Control Audit is a highly profitable exercise with respect to both capital expenditure and productivity ...

Example: Pump Noise Control Options

This example illustrates the results of the Noise Control Audit for a noise problem involving pumps.

Option 1

Conventional; enclose the pumps; 10dB(A) noise reduction; c£4000/pump; potential operational problems due to lack of visibility (leaks) and access for maintenance; potential heat build-up.

Option 2

Conventional; barriers round pumps; 6 - 8dB(A) noise reduction; implementation c£500 materials + 3 man days / pump; potential access and visibility problems.

Option 3

Source control; INVC developed pump motor cooling fan silencer plus sound deadened steel on coupling guard and base; c8dB(A) noise reduction; implementation £200 materials + 1 man day / pump; no operational problems as durability, access and visibility are unaffected.

Noise Control Implementation

Once the Noise Control Audit is complete and the preferred options selected, the following programme can be implemented:-

- Carry out additional measurements (as required), testing mock-ups where possible and discussing the options in detail with company engineers.
- Develop detailed noise control recommendations for the selected options including outline drawings, materials specifications and potential suppliers.
- Liaise during implementation to ensure the optimum performance of the modifications on each type of machine. Once implemented on one machine, they can then be copied across to any other similar units.

Note: *The noise control recommendations can be provided as a working document with sufficient information to enable the noise control modifications to be implemented by any competent engineer (in-house or contractor). Alternatively, we can usually set-up turn-key implementation as an extension to normal maintenance.*

The Costs

The initial cost involved in for a **Noise Control Audit** depends upon the nature and number of machines or plant that are included. This has ranged from a single machine up to national (and international) company-wide exercises across multiple sites. Contact us to discuss particular projects in detail.

Buy Quiet Purchasing Policy

Effective and properly policed purchasing standards can save enormous sums of money by ensuring that suppliers use the best of current noise control technology to meet noise specifications (rather than wasting your money on high cost conventional measures). Moreover, by forming a partnership with the INVC, the technology can even be jointly licensed to suppliers making noise control specifications not just cost effective, but profitable.



We have developed the UK standard purchasing policy complete with template documentation guidance notes, technical support and training.

On the Web

Our web site gives you instant access to the latest developments in occupational and environmental Noise, Vibration, HAV, case studies (including sound), training, useful links, new products ...

www.invc.co.uk

Contact us for more information about noise and vibration control technology, technical support, purchasing and training.