

## Remote Control of Noise

*noise control by email - quicker and much lower cost ...*

There are simple, low cost solutions to many environmental noise problems, fans in particular. A site visit plus an expert assessment of the options, however, may be time-consuming and can cost more than the solution itself. New technology coupled with the largest database of noise control solutions available allows us to diagnose and / or solve many noise control problems remotely via email - and at a fraction of the cost of conventional programmes.

### Remote Silencing for a Laundry Fan



The noise from this extract fan was the cause of serious complaints from nearby residents. We analysed recordings sent by email and provided detailed drawings for our proprietary Quiet Fan technology (QFt)

modification. This reduced the tonal noise by 20dB, eliminating the problem. The remote control and QFt process saved a total of £4000 and reduced running costs compared with conventional treatments. Moreover, the whole process was completed within a few days rather than a few weeks.

### DIY Noise Control made Simple

Other examples include projects based on information emailed by EHOs from chillers, extract fans, CHP units and many others. In some cases, long term, lingering problems have been solved for a few hundred pounds by an INVC drawing and a quick trip to B&Q...

Contact us to make use of this service, download details via [www.invc.co.uk/services/local-authorities.php](http://www.invc.co.uk/services/local-authorities.php) - or check 8.

### Calibrated Sound Recording Update save £4000 or more per sound level meter...



Did you know that you can turn virtually any of your existing sound level meters into a top of the range, state of the art piece of kit by buying one of the solid state recorder units shown here?

Simply record on site from your SLM (via AC lead), download into NoiseMaster or FrequencyMaster (for narrow band tonal analysis) on your PC to generate virtually any auto-calibrated analysis you could wish for in seconds.

Function for function, this approach can save you £4000 - £6000/meter over top-end sound level meters.

The analysis software is low cost and the most user friendly available (we use it ourselves on a daily basis). It is also a productive alternative to, or upgrade for, the analysis software that you can buy with sound recording sound level meters.



**We have tested and use both the digital recorders shown here - the Marantz PMD 620 (upper left) and M-Audio Microtrack (lower right) - available from various suppliers on the web at about £250 and £200 respectively. Both provide high quality, Type 1 specification recording.**

Contact us for technical details or check 16.

### New Noise Nuisance Recorder echo Noise Annoyance Recorder *half the cost, all the speed and quality...*



*You can now afford two noise nuisance recorders for the price of one...*

- The highest quality Type 1 or 2 recordings *even at very low noise levels*
- Utterly simple, utterly reliable *rugged, bespoke recorder - no manual needed*
- Headphone and analogue out + USB *check recordings on site; speaker replay*
- i-player PC replay software option *cuts listening time by an order of magnitude*

The **echo recorder** is based on a simple premise: that you usually just need a low cost recorder that is easy to use and produces high quality recordings.

The **echo recorder** can also be supplied with the unique **i-Player** software to speed-up and simplify noise processing. Simply download the recordings (or the recordings from other systems) and -

- Listen to and review recordings at up to **x10 real-time speed** - with either:-
  - **No pitch change** - *hear and identify events clearly, but much, much faster*
  - **Pitch change** - *shift difficult low frequencies to a higher pitch that is easily heard and identified without large speakers or high cost headsets - and much, much faster*
- Switch detailed dB v time noise plots between "A" weighted and Linear - and jump instantly to any point in a recording
- Recording noise parameter review option
- Show tones and their contribution to the total noise level (frequency analysis option)

#### Sounds too good to be true?

See for yourself: videos of recorder / software in action are at [www.invc.co.uk/services/local-authorities.php](http://www.invc.co.uk/services/local-authorities.php)

Contact us for technical details, download them via [www.invc.co.uk/services/local-authorities.php](http://www.invc.co.uk/services/local-authorities.php) or check 15.

## Entertainment, Music and Venue Noise

### *IOSH certified, 3 day noise competency course*

The new noise regulations have applied to the music and entertainment industry from April 2008. Meeting the requirements is a challenge that requires a seismic shift in attitude and practice across the industry. However, it is also a challenge for those who have to police the requirements on the ground. This practical 3 day music and entertainment noise competency training course provides a pragmatic guide to best practice with extensive use of case studies from the entertainment and music sectors with practical work involving both classical and contemporary examples.

#### Local Authority Noise Competency Training -



In addition to the public courses run at IOSH and other training centres, we have also developed an in-house version specifically for Local Authorities. Based at a host authority with additional delegates from other councils in the area, this is a highly convenient and very cost effective approach.

#### - with additional workshop options

The in-house entertainment / music venue competency course can be extended to include an additional day covering Fan Noise Control, Best Practicable Means (BPM / BAT) or Noise Recording and Analysis.


*"really good to actually hear sounds on a noise course; I liked the diagnostic approach; case studies excellent"*

Contact us for more information, visit the web at [www.invc.co.uk/services/local-authorities.php](http://www.invc.co.uk/services/local-authorities.php) or check 9.

Frequency Master [transformer hum.wav]

#### Frequency Analysis Made Simple and Low Cost

The latest **FrequencyMaster** analysis software version can be used on recorded sound files from virtually any source. It is very simple to use and yet provides narrow band, octave and 1/3 octave and 3D waterfall plots plus particularly good comparison and reporting facilities - at an unparalleled price.



Alternatively, take it into the field on a tablet like this (c£400). **Check 13** or [www.invc.co.uk/services/local-authorities.php](http://www.invc.co.uk/services/local-authorities.php) for more information and a video of the software in action.

#### Noise Control Best Practicable Means Evaluation

Tonal environmental noise from a large packaging plant had been the subject of complaints to the Local Authority. The company had quotations for conventional noise control that were not only eye-wateringly expensive, but there was also no guarantee that they would reduce the noise sufficiently. The EHO suggested they contact us for an evaluation of best practice.

We developed engineering source control measures that not only reduced the problem tonal components by 10-12dB at a small fraction of the cost, but also provided the company with the added benefit of eliminating the requirement for mandatory PPE inside the plant.

This was a typical project - our unique engineering expertise and experience means that we can virtually guarantee to reduce the costs of any noise control project by 50%-80%. Consequently, our assessment of what constitutes "best practicable means" is definitive and provides a very useful service for EHOs for difficult noise problems.

Contact us to discuss the service or check 2.

#### Seriously Massive Fan Noise Reduction *Is this the most successful fan noise control project in history?*

We are talking here about steel-works fans that are built to an architectural scale. Low frequency tonal noise both from 8 axial fans (already fitted with 8m long silencers!) and 3 centrifugal fans (each c



3.5m high and 4m wide) had caused environmental noise problems over a number of years. All the possible conventional solutions would not only have cost a very large fortune (and probably not been very effective), but would also have reduced efficiency and therefore increased running costs.



We developed innovative engineering source control measures for both types of fan. These reduced the tones by 20dB on the axial units and by 12dB on the centrifugal fans (via a development of our Quiet Fan technology) - with no effect on efficiency. The cost savings are difficult to estimate, but are likely to be well over £250,000 with 5 figure sums saved each year in reduced running costs compared with the alternatives.

These results make this a good candidate for the most successful and effective fan noise control project in history... The same approach is equally applicable to fans of all sizes and applications. **Contact us for more, download a technical note at [www.invc.co.uk/invc-free-information.php](http://www.invc.co.uk/invc-free-information.php) or check 5.**

#### Construction / Demolition Noise & Vibration *Innovations in control techniques*

We are increasingly involved in this field of work and have developed some novel techniques that are revolutionising best practice, including:-

- Acoustic screening - novel design *potentially x3 performance of conventional*
- Psy-lencer - psychological silencing *sculpted noise to reduce nuisance perception*
- Vibration Transmission Test *calibrated test of party wall performance*
- Site noise / vibration management software *operational scheduling v specifications*

Contact us for more information.

**Visit our regularly updated web site for best practice news - [www.invc.co.uk](http://www.invc.co.uk)**

# Sounding -



**Agony Aunt Advice Page for those with problems...**

We get regular calls for help in solving technical noise and vibration problems - or just for advice based on our own extensive experience. However, some of them are so outlandish that you sometimes wonder whether you've stepped into an alternative reality. For example:-

A caller couldn't work out why he kept measuring levels of c 72dB(A) when previous background readings had been much lower. To cut a very long story short, I eventually realised that it had been raining and he had simply been measuring the drops drumming on his umbrella - everywhere he went. This is a version of the "the meter will only measure the noise, not me speaking to you..." fallacy.

Similarly, one nameless person got the reverse effect as he'd managed to wedge the microphone cap inside the windshield. Calibrate, put on windshield, lose c 10dB off the measured noise level...

Or - your headphones aren't working because you have managed to ram the jack into a phono socket (I've missed out the 15 minutes of suggesting all the other possibilities before the penny dropped..).

**The Mata Hari of Complainants - phone call of the year**

"A foreign intelligence agency is playing subliminal messages through the wall to control my behaviour". "How do you know they are doing that if you can't hear the sound?" "My behaviour changes in the morning. My family has been involved in espionage and the procurement of sexual favours for a long time. I know things. I cannot tell you my name...". This was a strangely fascinating conversation that went on for some time. "Buy yourself a small mp3 player, get a recording of water or waves and put it on continuous play at night - loud enough so you can hear it. This will drown-out the messages so they cannot affect you. Do not tell anyone about this". "Thank you. I shall not tell them of your aid, so you will be safe". You could not make this stuff up....

**Would you like to Cut Diagnosis, Frequency Analysis and Reporting Time by Two Thirds?**

As noise recording and associated analysis software becomes more common, we are seeing an increasing number of thick reports liberally endowed with a multitude of graphs and analyses. In many cases, much of the time consuming recording, analysis and reporting is unnecessary. I would say that, typically, we have learned how to get the same or better results in about 20% of the time on site and in the office - but then, we have been specialising in this sort of work for over 25 years. We've had a few enquiries about running workshops to pass-on our experience - let us know if this would be of general interest and we'll put together a programme.

- off

## The Training Catalogue

The INVC is the IOSH approved training organisation for noise and vibration "competency" training - including a range of courses in the field of broadcasting, music and entertainment. We have also developed a set of unique, practical workshops specifically for EHOs, including:-

### Digital Recording and Analysis Workshop

Best practice in all forms of annoyance and general recording, including time saving short cuts and hands-on practical work.

### Best Practicable Means / BAT Workshop

Defining BPM (with case studies) and the procedure that must always be followed to claim BPM.

### Fan Noise Control Workshop

Best practice in assessing and controlling the most common sources of noise complaints.

### Occupational and Environmental Noise Measurement Workshop

Measurement theory and practice - including assessment under the new noise regulations.

Run locally, these provide the highest quality training at a fraction of the cost of conventional general courses (some authorities have even been known to turn a profit ...).

"one of the most relevant and informative courses in a long time . . . thought provoking . . . the best value seminar we've ever been on . . . humorous and entertaining . . . highly recommended"

Contact us or check 9 - 12

## The Innovations Catalogue

Whilst we don't design gadgets you didn't know you needed, we do have a reputation for innovation - as illustrated by this list of a few of our proprietary "best practice" innovations in the field of environmental noise.

### Psy-lencer - Psychological Silencing System

A subtle alternative to high cost (or impossible) noise control measures for a range of difficult temporary or long term noise complaint problems

### Quiet Fan technology - Best Practice for Tonal Noise

Reduces fan tones at source, quickly and at low cost - without silencers, maintenance or reduced fan efficiency

### Impact Noise Control Technology - Recycling Plant

Novel engineering control measures that can eliminate the need for barriers on recycling and other sites where impact noise is a problem

### Combustion / Boiler Noise Control Technology

Conventionally very costly to silence, our burner modifications reduce the noise at source instead - avoiding the cost and hassle

### FrequencyMaster - Narrow Band Frequency Analyser

The best selling analyser that is both easier to use and a fraction of the cost of conventional systems

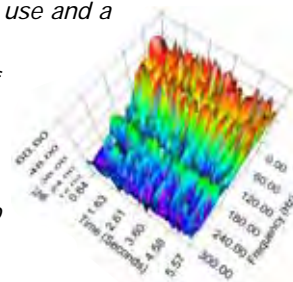
### Annoyance Recorders - from the developers of the first ever bespoke annoyance recorder...

echo Recorder, H-AR-D Recorder and i-Player  
Bespoke digital annoyance recorders - and a unique player that can cut the time required to process recordings by 80%...

### Site Noise Complaint Monitor

Noise logging and complaint cause identification so that action can be taken to eliminate the problem

Contact us if you would like more information on any of the above.



## NOISE AND VIBRATION INFORMATION AND TECHNICAL SUPPORT: EMAIL / FAX-BACK

The INVC provides extensive technical support and training for Local Authorities. Feel free to give us a call for advice, information or to discuss particular problems. If you'd like more free information on any of the following, tick the required items, fill in your details and send or fax a photocopy of this section to the number below - or fill in the email request form on our website.

### Environmental Services

#### 1 Noise / Vibration Assessments

Services summary literature for our range of noise and vibration monitoring and assessment services - including case studies illustrating best practice plus simple, innovative solutions to many common problems.

#### 2 Best Practicable Means Audit

An INVC developed audit that provides you with a definitive assessment of what constitutes BPM to control environmental noise with the best of current technology.

#### 3 Ground / Building Vibration

A full range of ground-borne and building vibration measurement, analysis and diagnostic services - backed by vibration control advice and detailed design.

### Environmental Noise Control

#### 4 Psy-lencer

Innovative, low cost solution to difficult noise nuisance problems using customised broadcast sound to hide noise character.

#### 5 Quiet Fan technology

Unique simple, low cost alternative to silencers, enclosures and lagging that is often best practice for fan tones. No performance penalty or maintenance - ever.

#### 6 Combustion Noise Control

The cost of conventional techniques would make a hardened accountant weep! The new technology we have developed reduces the noise from these sources at a fraction of the cost and disruption.

#### 7 Impact Noise Control

Practical, low cost solutions to impact noise from sources such as scrap processing, loading, quarries, tipping ...

#### 8 Remote Control of Noise

In many simple cases, we can provide detailed noise control recommendations based on emailed video or sound of the problem. A very low cost solution to problems such as chillers, kitchen extraction systems ...

### Noise Training

High quality, low cost local training modules. *"Excellent .. funny .. if only all training was like this!"*

#### 9 Entertainment Industry Noise Competency

3 day IOSH certified training in noise measurement, assessment, management and control.

#### 10 BPM / BAT / Noise Specification Workshop

1 day workshop covering the assessment of BPM and setting effective noise specifications.

#### 11 Digital Recording and Analysis Workshop

Practical best practice workshop for correct use and calibration of all types of Annoyance and general recorders.

#### 12 Fan Noise Control Workshop

All aspects of fan noise assessment /control - from industry to fast food.

### Measurement and Analysis Systems

#### 13 Noise Analysis

The revolutionary **FrequencyMaster** and **NoiseMaster** provide state of the art narrow band and environmental noise logging and analysis - at a fraction of the cost of conventional systems. Parallel tonal, 1/1, 1/3 octave, 3D plots, digital recording / replay, Leqs, Lns, re-analysis...

#### 14 Site Noise Complaint Monitor

Continuous monitoring system to check compliance with noise specifications and to identify the source of events that might cause complaints.

### Nuisance Recorders / Analysis Systems

#### 15 echo Recorder / H-AR-D Annoyance Recorder

Next generation digital recorder. Higher quality recordings and unique **i-Player** reduces processing time by 80%...

#### 16 Noise Recording Hardware Technical Note

Convert any SLM into an all singing, all dancing noise recording and analysis system for a few hundred £s.

### HAV / NOISE Base

#### 17 Never measure Hand-Arm Vibration again

Low cost, virtual risk assessment by email.

Please Print Your Details - or indicate if there has been a change of address or personnel for our records.

Name: ..... Tel: .....

Job Title: ..... Fax: .....

Authority: .....

Address: .....

..... email: .....

Other information: .....



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Check this box for email versions of the information.