

December 2004

Presentation on "Hand Arm Vibration Training" by Dave Pierre", Hire Association Europe.

Dave started by saying that the Hire Association Europe (HAE) was the biggest Trade Association in Europe. He had joined them two years ago and had seen his work on health and safety issues increase enormously. HAE was mainly concerned with safe working practices and auditing members' operations to ensure consistent standards. Part of this role was to issue safety instructions on the use of hire tools, in the form of leaflets, which were also accessible on their website.

During the process of looking at vibration risk, Dave said that HAE became concerned about the lack of reliable, consistent data on vibration levels from manufacturers and hire companies. After extensive research with manufacturers, HAE were able to quantify **Dominant Axis** vibration levels for most power tools on the market. Using HSE guidance, HAE were then able to relate these levels to acceptable time limits for use and had arrived at a banded classification for risk. The risk bands were colour-coded Red (High), Amber (Medium) and Green (Low). Corresponding self-adhesive labels were then produced for hire shops to fix on the tools. The system was launched at the Interbuild 2004 Exhibition.

HAE had come to the conclusion, Dave continued, that using "trigger time" as a guidance limit was inherently inaccurate, because operators were not able to monitor their usage very accurately. Setting operating times for typical jobs was also prone to error as variables in drill characteristics and material density introduced too many variances between theoretical and site conditions. Dave went on to say that HAE was also very aware that good training was an essential part of explaining the system and, ultimately, effectively minimising the risks to the operators. The package he was talking about, today, was supervisor's training module.

It started with examples of what Hand Arm Vibration Syndrome looked like and aimed to give supervisors a thorough understanding of the subject by covering the following topics: -

- ❖ Statistics about the risks
- ❖ Legal requirements
- ❖ Doing the work another way?
- ❖ Tool selection
- ❖ Maximum usage time
- ❖ Training
- ❖ Case Management
- ❖ Co-operation

Of the 5 million people at risk in the UK, Dave said that over 1 million were exposed to dangerous levels and 300,000 were suffering from advanced symptoms. The prime source of the risks has been the mining industry, where miners worked for long periods, in cramped, extreme positions and extremes of damp and temperature. He reminded members that when workers did suffer from any symptoms, it was important to consult a GP at an early stage and crucial to state what job they did. This was essential if the right tests were to be done in order to speed up accurate diagnosis and treatment. Dave reminded us that it was the employers' and supervisors' legal duty to protect the health and safety of the workforce, and that included vibration risks.

Following the familiar, established hierarchy risk control measures, the best way of minimising risk is to change the method of working in order to eliminate the problem altogether! Effective methods of achieving this are: -

- ❖ Use machine-mounted breakers
- ❖ Select equipment with isolated controls
- ❖ Use rigs instead of hand-held machines
- ❖ Use concrete retarding agents rather than scabblers.

Selection of the best tools was the next step. Wherever possible, Dave said, choose a vibration-reduced tool. He quoted a few examples of where this had been done, only for the operator to return them to the hire shop, because they “weren’t up to the job”! Apparently, the reduced noise and vibration deceived the user into thinking that the tool had reduced power and effectiveness, whereas the opposite was true! In addition, selecting the most efficient tool for the job gets the job done more quickly and this, in turn, reduces the exposure time. It almost goes without saying that good maintenance of tools reduces the chance of breakdown and keeps them at the top of their design performance levels.

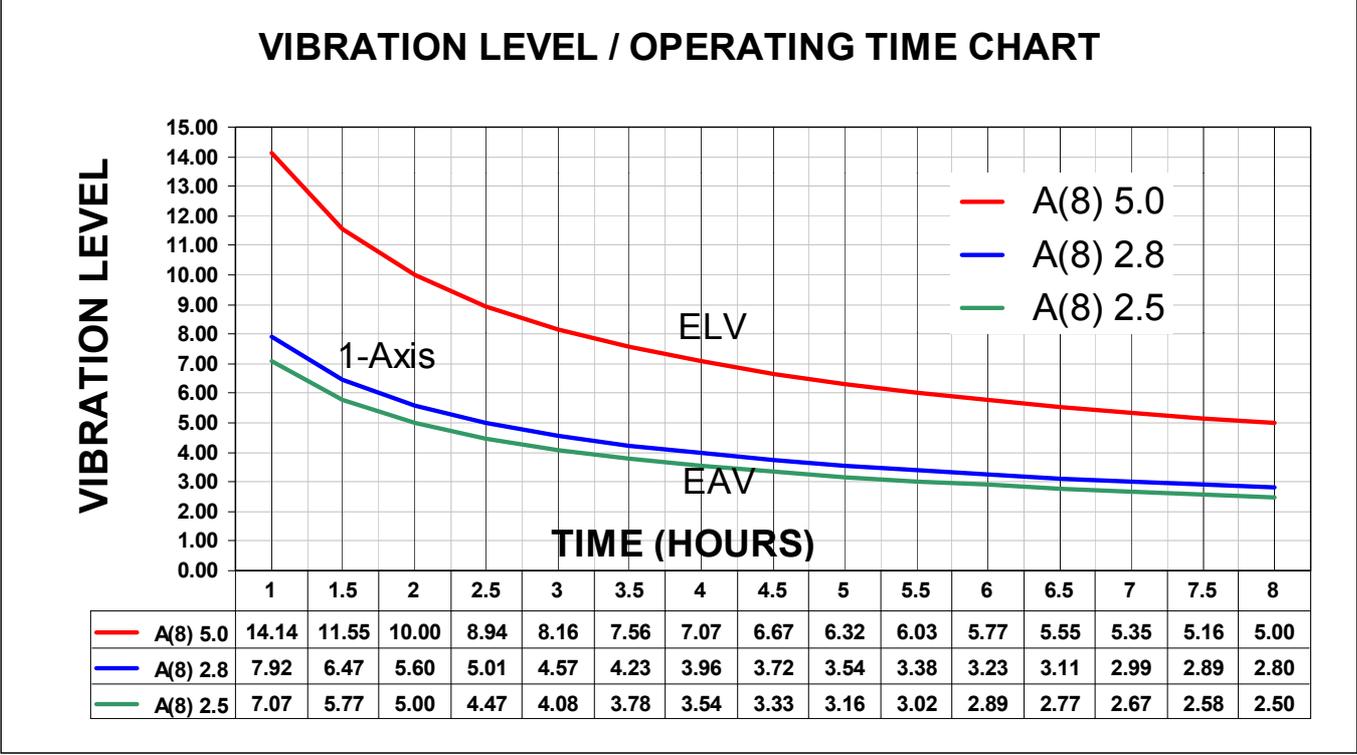
Dave went on to describe the following risk labels and the way they should be used.

Vibratio	Maximum daily		
below 5		<p>8 hours maximum daily use</p>	8 hours
5 to 10		<p>2 hours max daily use without further assessment</p>	2 hours
over 10		<p>Consult your supervisor</p>	assess

In the highest risk classification (Red), it was essential to contact a supervisor for guidance for making a specific risk assessment of the work. This usually involved getting accurate vibration levels for the specific tool from a supplier, manufacturer or trade association. Dave sounded a note of caution here, however, when he related an

example of a manufacturer quoting 18m/sec², the hire Association leaflet quoted 6m/sec² and the hire shop thought it was 5m/sec²!

It was essential not to exceed the maximum usage time, or 5m/sec² over an 8-hour day or 40 hour week. Higher vibration means less usage time, which is illustrated on this chart: -



The label system shows the maximum user times for the Amber and Green Categories. You should remember that you cannot do a full 2 hours work on a medium risk (amber) tool then go on to use a low (green) risk tool because you will have already reached your daily dose in 2 hours. Health and safety law requires a risk assessment to be carried out before this 2-hour limit may be exceeded. These labels will soon appear on Hire Association Europe member company’s equipment and it will help users identify the risk level of the equipment that is to be used. It is important to note that these colour codes are based upon the manufacturer’s recommendations that can only be guaranteed if the recommended accessories are used. Buying a ‘cheaper, version of a drill might turn out to be a false economy, if the job takes much longer to do and it wears out more frequently! Employers should also have in place a programme of risk-assessment, control measures and surveillance once the daily exposure or dose exceeds 2.5 metres per second

Dave repeated his earlier advice that training was all-important in protecting people. He emphasised that untrained workers will be exposed too much higher levels of vibration and must be trained in the safe use of the equipment. Also, they must be advised of the hazards of hand arm vibration and the risks they face.

Having dealt with the ‘theory’ Dave went on to give some practical tips on Case Management. “What would you do if an operator develops any of the symptoms, such as: -

- ❖ Fingers go white after exposure to the cold
- ❖ Loss of colour in finger tips, changing to dark red after using tools
- ❖ Numbness
- ❖ Pins and Needles
- ❖ Painful wrist, loss of grip strength

Dave advised the following actions: -

Short term

- ❖ Refer to existing company policy
- ❖ Reduce exposure of operators to vibrating equipment
- ❖ Refer them to management for further action.

Long term

- ❖ Confirm medical diagnosis by reference of sufferer to an Occupational Health Consultant. Ordinary GPs are unlikely to have this experience
- ❖ Submit Riddor report if diagnosis confirmed
- ❖ Implement company policy for reducing risk to persons known to be suffering from the ailment. This may include more frequent monitoring of their condition and/or reduction of exposure

Dave emphasised that risks could be minimised by having a good management system based on these co-operative measures: -

- ❖ Advise on the best tool for the job
- ❖ Ensure correct training for the operators
- ❖ Ensure that the correct standard of power supply is used
- ❖ Ensure a ready supply of the correct accessories
- ❖ Use equipment correctly. *Do not use too much pressure as it does not ensure better performance*
- ❖ Ensure equipment is well maintained
- ❖ Arrange job rotation
- ❖ Ensure adequate rest breaks
- ❖ Provide warm facilities for rest breaks
- ❖ Ensure that appropriate PPE is available – *Note that ‘Anti-vibration’ gloves are a myth. Although they might keep hands a little warmer!*

Dave concluded by giving some references for further information: -

- ❖ Company Health and Safety Manager/Advisor
- ❖ Tool Manufacturers
- ❖ HSE INDG 338 Power Tools – how to reduce vibration risks
- ❖ HSE Infoline 08701 545500
- ❖ HSE Website www.hse.gov.uk

Members' Questions

BHSEA President, Morris Cooke asked if the needs of colour-blind operatives had been considered when selecting the traffic lights system? Dave that previous versions of the system had used a different approach but ultimately the 'traffic lights' argument won the day.

Morris went on to say that in some medical circles, Reynaud's Disease was considered to be 'constitutional' and not the result of industrial disease. Dave offered the comment that any sufferer should always declare their occupation to keep the diagnosis on track.

Mark Hoare of Birmingham University asked how the worst of today's tools compared to those in the mining industry. Dave said that it was almost impossible to make a straight comparison because of design changes that altered operators' perceptions. He referred back to the modern tools that vibrated less, but wrongly rejected because they 'appeared' to be less effective.

John Wood of the Birmingham Area Fire Protection Association commented that, as well as poorly designed tools, the PPE in the mines was worse. Dave agreed with that opinion and stated that there were extremes of wet and cold to deal with.

Mike Thurman of Coltman Precast Concrete enquired about the availability of the database on vibration levels. Dave said that it could be found on the Construction Confederation Website.

As there were no other questions, the Chairman thanked Dave for his very useful presentation and the members responded in the time-honoured fashion.