be caused by Hand-Arm Vibration, or through other causes.

As the condition worsens, attacks can occur even in warm surroundings and may affect the persons sleeping habits. Pain and stiffness in the hands and joints of the wrists, elbows and shoulder can occur.

HAVS is incurable, but can be prevented or mitigated through management of the problem.

WHO IS AT RISK?

Any person using hand held power tools on a regular basis whether a chainsaw, mower, strimmer, or blower. The associated risks remain

Those whose jobs require regular frequent use of vibrating tools and equipment are most at risk. These occur in a wide range of industries, including:

- Road and railway construction/ maintenance
- Concrete Products
- Construction
- · Forestry/Gardening/Greenkeeping
- Foundries
- · Light and heavy engineering
- · Mining and quarrying
- · Metal working
- · Stone masonry
- · Wood working
- · Public services
- Public utilities

SO, WHAT CAN I DO ABOUT IT?

The 'Control of Vibration at Work Regulations (2005)' puts an obligation on both employers and employees to assess, control and manage vibration in the workplace.

With increasing legislation concerning vibration exposure, many companies are challenged to determine which information is correct and current. This can be somewhat confusing. To successfully protect your workforce from the effects of HAVS it is vital that employers have an effective Hand Arm Vibration Management System to - Assess, Measure, Monitor, Control, and Manage any associated HAVS risks.

Employers are obliged to provide information and training for employees to ensure knowledge of health risks, health surveillance, vibration management systems, safe use of equipment, and awareness of problems associated with HAVS.

Assess

The first stage is assessment - "Do I have a problem?"

This can be achieved with a simple questionnaire asking the present workforce whether they are suffering from any of the symptoms of HAVS.

"Do you suffer from tingling, blanching or numbness in the fingers?"

The responses to the questionnaire will

determine the next stage which is Health Surveillance.

Potential employees should also be questioned on previous employment to ascertain previous work which may have entailed vibration from hand held power tools, and hobbies which may involve high vibration - e.g. motorcycling or DIY.

Health Surveillance

Employers are obliged to provide Health Surveillance for any of their workforce using hand held vibrating equipment to prevent symptoms appearing or existing symptoms from becoming worse. HAVS is incurable and if no precautions are taken then symptoms will usually get worse

Specialist health surveillance may be necessary for employees with symptoms, so they can be graded, on the 'Stockholm Workshop' grade, which gives an indication of the severity of nerve or vascular damage.

Regular check ups may be necessary to monitor employees suffering symptoms.

Vibration Levels of Equipment

Sources from which employers can obtain vibration data for power tools are -

- · Manufacturer's Literature
- · Equipment Suppliers
- Research Organisations
- Trade Associations
- HSE
- · Vibration Consultants
- · Measurements in the workplace

Of these, the most accurate tends to be measurement in the workplace, which gives vibration levels for your tools or equipment operating under your working conditions.

Having obtained vibration levels under working conditions, employers should determine the highest vibration tools and attempt to re-design the job or process to eliminate the use of hand held power tools in these processes. This may not always be possible, but should be the long term objective.

The legislation set lower values for vibration

Exposure Action Value (EAV) - 2.5m/s2 (metres per second squared).

Processes, tools, or equipment having vibration at this level or above must have a risk assessment; the workforce must have information or training to recognise the symptoms of HAVS; and PPE issued to mitigate the effects of vibration and cold.

Exposure Limit Value (ELV) - 5m/s2 (metres per second squared).

For tools or equipment having vibration at this level or above (which have an economic life) employers should attempt to reduce the vibration levels to below the ELV, by fitting any appropriate anti-vibration fittings, or purchase new vibration

reduced equipment.

Where vibration levels are still above the ELV after vibration reduction measures have been implemented, then the only other option is to reduce the time each person uses the tool or equipment.

Monitor, Control and Manage

If an operator uses one tool or piece of equipment per day, then monitoring and control of vibration levels becomes relatively simple. The problem occurs when operators use several tools for shorter periods than allowed by the vibration levels measured. Each 'burst' of vibration has to added to ensure the operator is not exceeding his/her daily vibration level.

There are several methods in use but the simplest is a system whereby vibration values can be converted into 'points' (using suitable formulae) and the tool or equipment is 'tagged' with this information.

The operator simply has to note the number of points on the tag, and multiply by the time used (hands on - power on) to determine how many points have been used on each separate use of tools or equipment.

There is a 'daily' maximum number of points, and as long as this is not exceeded, then the operator will not exceed his daily vibration level.

This is an effective, real time, management system, in use by many of Fivesquared's clients - Local authorities, public utility companies, large construction companies, and several golf greenkeeping departments.

> Fivesquared is a vibration testing services company www.5sad.co.uk 0800 848 8052

Herbert Barker is Technical Manager









1. Marriott Meon Valley GC - Looking West, by Dean McMenemy

PICTURE THIS

Some stunning photographs caught the eye in the latest Photographic Competition

The third BIGGA Photographic Competition produced a record entry and some of the finest golf course pictures would you find anywhere.

Rising to the top however was Dean McMenemy, of Marriott Meon Valley Hotel, who entered a body of work which could have produced several overall winners. However it was his simply stunning, Looking West, picture that stole the show with the low sun lighting up the trees surrounding a frosted green.

"The picture stood out as an absolutely outstanding piece of golf course photography," said Alan Birch, judge and the man whose inspiration the competition was over three years ago.

"A very unusual picture but the photographer has made fantastic use of the late sunshine on the tree tops. A cracking picture," said fellow judge and professional golf course photographer, Eric Hepworth. Matthew Harris, a man who has photographed the world's best golfers on the best courses of the world, completed the judging panel and was equally impressed by the winning entry.

"It is a stunning picture made by the way the sun lights up the trees. It's a very deserving winner."

Runner-up was a picture which combines great photography with great greenkeeping and was taken by Gareth Roberts, Course Manager of Hankley Common Golf Club.

The picture shows a green being cleared of dew early one morning and encapsulates exactly why so many people fall in love with a greenkeepers' life.

Third place went to Liam Bergin, with his study of a tree on Papillion, a Colin Montgomerie-designed course in Turkey.

Nine other pictures from those submitted have been selected to make up the 2009 BIGGA

calendar. They are: Marriott Forest of Arden H&GC by Robert Rowson;

Worplesden GC, by Paul Robinson; Teeside GC by Dave Moss; Torquay GC, by Jason Brooks; Meon Valley by Dean McMenemy; Trentham Park GC by Leigh Swann; Remedy Oak GC by Lee Collier; South Essex GC by Ian Denny, and Manor House by Castle Coombe by Gian Povey.

Dean wins an Eric Hepworth print of his choice while Marriott Meon Valley Hotel will also be featured in Greenkeeper International next year. Gareth and Liam also win a smaller Hepworth print of their choice.

Thank you to everyone who entered this year's competition. The overall standard was incredibly high and BIGGA could easily have produced a 24 month calendar based on the number of high quality pictures entered.



2. Hankley Common GC – Dewying Green, by Gareth Roberts



3. Papillion, Montgomerie (Turkey), by Liam Bergin



Marriott Forest of Arden H&GC by Robert Rowson



Remedy Oak GC by Lee Collier



Trentham Park GC by Leigh Swann



Manor House by Castle Coombe by Gian Povey



Teeside GC by Dave Moss



Worplesdon GC, by Paul Robinson









Torquay GC, by Jason Brooks





South Essex GC by Ian Denny

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Driving Environmental Performance

MOWING DIFFICULT AREAS

When all mowing is difficult, traction is king, writes James de Havilland

No point reminding ourselves that we have enjoyed a wet summer. How much impact upon mowing this will have had at any given course will depend upon many factors, but one thing is clear. If a mower breaks traction on sodden turf, the damage caused goes beyond a loss in productivity.

When specifying any new ride-on mower, be it for the greens, fairways or roughs, one area of the spec sheet it is easy to gloss over is the traction system. Those courses with a few modest undulations will no doubt opt for a machine with just 2WD, the need for an extra driven wheel or wheels seldom needing to be considered.

Add an excess of water to a course with even modest inclines, however, and it can soon show up any problems in a mower's traction department. In a 'typical' season, the odd bit of modest wheel slippage in a wet period will not show up. It is where a mower slips repeatedly over the same areas, typically because these parts of the course have simply not had a chance to dry out, that problems can arise.

A simple way around this is to alter mowing patterns. This can help reduce repeat wheelings.

This past summer has seen even this ruse run into problems. Some parts of a course will have not had any chance to dry at all, with an increased chance of more severe wheel slip regardless of mowing patterns. Close mown semi-roughs over tough terrain are also likely to be an area for concern. Even greens blessed with good drainage have posed their own sets of problems.

GOOD TRACTION HELPS

What can help reduce problems is good traction. Even in dry conditions, a mower that controls wheelslip will have its benefits. So it can be worth going for the 'all-wheel' drive version of a mower, even on a course with just the odd modest slope to contend with.

Before moving on, some courses have in the past found the traction of 'all-wheel drive' models to be somewhat disappointing. Traction motors on every wheel does not necessarily mean traction is passed equally to each of those wheels.

In the past, a 4WD version of any given mower may well have not necessarily been a 'true' 4WD. In really simple terms, the available power would not be diverted to a wheel that has traction. The

result could be a 4WD mower actually delivering 3WD traction.

The key issue is to find out how traction is managed. Toro, Ransomes-Jacobsen and John Deere all have systems that ensure power is directed to the wheels that can benefit from it most. How the systems do this will vary depending upon models, but the aim will be the same; make sure the mower can keep going without turf damaging wheelspin.

The problem is that you do not get a mower with the extra traction you may have wanted this season for nothing. Further, this past summer has been a freak year. Why invest in new kit to cope with a problem that may not raise its head within the life cycle of the kit you may be investing in?

There is no easy answer to this, but one point is clear. If you have to mow when the going gets tough, a mower that offers the best traction will not only be better able to cope up slippery slopes but also minimise the damage caused by wheelslip.







Toro traction management systems include its parallel hydraulic system. This delivers full-time, bi-directional 4WD, with parallel hydraulic flow between front and rear wheels. The system is designed to deliver more than just a traction boost in difficult conditions. During a turn, the wheels are also claimed to be less liable to scuff. As with all traction systems, it is how they can help protect the turf in difficult conditions that is as important to the ability to scale slippery inclines.



John Deere GRIP all-wheel drive traction at is available on the recently released 7400 and 8800 TerrainCut rotary mowers and the 7000 and 8000 Series PrecisionCut range of fairway mowers. The GRIP system reduces wheel slip by diverting oil flow from the front wheel to the opposite rear wheel. By allowing the flow to cross over to the opposite rear wheel, the system maintains traction not only while climbing straight up hills, but also on sidehills as well. The system is permanently engaged when driving forward with the PrecisionCut Fairway Mowers. This means the operator does not have to deselect 4WD, the GRIP system taking care of all aspects of traction.



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