

QBE INSURANCE ISSUES FORUM

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WILL THE NEW CONTROL OF VIBRATION AT WORK REGULATIONS SHAKE UP THE SYSTEM?

OVERVIEW

Some employers believe that the much-heralded Control of Vibration at Work Regulations 2005 will introduce all-new duties through the Physical Agents (Vibration) Directive, to protect employees from exposure to vibration at work. This will also include those others who may be affected by vibration-related activities, whether they are at work or not. In reality however, the new legislation will primarily bolster existing provisions, by placing explicit duties on employers.

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DEFENDING AGAINST FUTURE HAND ARM VIBRATION SYNDROME CLAIMS

“ HAVS is a serious occupational disease. It may eventually lead to the loss of hand function and affect employability. Where HAVS is identified at an early stage, reducing exposure is likely to delay the development of worse symptoms. ”

BACKGROUND

There already exists a raft of excellent technical guidance on hand arm vibration (HAV) and hand arm vibration syndrome (HAVS) from sources such as the Health and Safety Executive (HSE), industry advisory committees, equipment manufacturers, and so on. To summarise these, exposure to HAV can lead to damage to the structure and tissue of the hands and eventually lead to HAVS.

HAVS is usually grouped into 5 types of disorder:

- Vascular
- Neurological
- Bone & Joints
- Muscle
- Other, such as, headaches, sleeplessness

Symptoms may include:

- Impaired circulation causing painful blanching attacks to the affected fingers (vibration white finger, dead finger), triggered by cold or wet conditions
- Reduced sense of touch and temperature
- Numbness and tingling
- Stiffness of the joints
- Reduced grip strength and manual dexterity
- Carpal tunnel syndrome

An individual worker suffering from HAVS may not experience the complete range of symptoms. For example, neurological symptoms related to nerve damage can be present in the absence of vascular or circulation problems.

EXPOSURE TO HAV

The potential for HAV exposure will be present in any task where vibration is transmitted to the hands or arms. It is therefore commonly associated with tasks involving:

- Hand-held power tools
- Hand-guided equipment
- Holding of materials or work pieces that are presented for machining

Much work has been undertaken in the heavier trades to fully understand the impact of activities involving high levels of vibration transmission, as found in road breakers, hand-held grinders and riveting guns amongst others.

Since HAVS is a function of the frequency of the task, the magnitude of the vibration levels and the individual's personal susceptibility, the potential for contracting the syndrome is now recognised in activities that were once considered to be marginal, such as the use of hand-held orbital sanders in the wood and glass reinforced plastics industries.

This is an important consideration for employers utilising technologies and processes where there is not yet an established 'date of knowledge' for HAVS. Notwithstanding that fact, the employers' duty of care requires the company to act in a reasonable manner and, having identified potential risks, to introduce basic precautionary controls. This may take the form of providing HAVS-related instruction and introducing precautionary, basic health monitoring.

CIVIL CLAIMS STRUCTURE

For HAV and HAVS, it is important to understand the link between exposure and injury:

IS THE CLAIMANT OWED A DUTY OF CARE?

It is highly likely that in most employer/employee situations, duty of care is owed.

IS THE DEFENDANT IN BREACH OF THAT DUTY?

This needs to be fully investigated in each case and a comparison made with all relevant legislation, guidelines and regulations. If there is a breach of duty;

DID THE BREACH CAUSE THE INJURY OF WHICH THE CLAIMANT COMPLAINS?

Medical records and evidence, taken with the history of symptoms, will be paramount in establishing a link between exposure and injury.

“ Almost 3,500 outstanding claims representing reserves over £27,000,000. This is steadily increasing numbers of new claims ”

CLAIMS OVERVIEW

Statistics from the HSE show that by the late 1990s:

- Over 4 million workers were exposed to vibration at work
- 1.2 million of those were exposed over the action levels (BS6842 1986)
- 300,000 workers had been diagnosed with HAVS, with 36,000 at severe levels of injury

QBE's claims statistics for HAVS report:

- Almost 3,500 outstanding claims representing reserves over £27,000,000. There is steadily increasing numbers of new claims
- Settlement costs to reach over £4,000,000 by year end 2004
- A small but significant number of claims are estimated at over £50,000

LEGAL DEVELOPMENTS

There have been a number of developments in the law over the last few years in relation to HAV and HAVS:

COURT AWARDS

Awards at court have increased significantly (especially *Armstrong and Others -v- British Coal* (1998)) and scheme settlements are becoming less attractive to claimants. Certain cases have been settled amid much publicity, giving the condition a much higher profile and bringing it to the attention of many more claimants and this, compounded by high awards given in those cases, has meant potential claimants are financially motivated to submit claims. Furthermore, a greater number of claimants have access to legal service through conditional fee agreements and claims funding bodies.

PROOF OF EXPOSURE

Fairchild -v- Glenhaven Funeral Services and Others (2002) was intended to apply to mesothelioma cases only, but claimants' lawyers are seeking to extend the reasoning into other disease areas. Presently, it is necessary for claimants to prove that exposure to vibratory equipment had materially contributed to their injury. Following the Fairchild decision, there have been attempts to lower the burden of proof to one of materially increased risk of injury. Griggs -v- Transco (2003) is an example of a case where the court was faced with immature science linking the disease to vibration and used the Fairchild decision to find for the claimant. It is easier to prove that the risk of injury has materially increased than it is to prove that exposure to excessive vibration caused a material contribution to the injury.

OTHER DISEASES

More obscure diseases are emerging. Griggs -v- Transco was a claim for palmer arch disease, alleged to have been caused by exposure to vibration. It is common now to see claims for carpal tunnel syndrome cited as a result of vibration.

EARLY ACTION

The case for Smith -v- Wright and Beyer (2001) showed that had the defendants taken action before the claimant developed symptoms, he may not have gone on to develop symptoms. There are attempts to use this case to reduce levels of discount for non-negligent exposure, and to move away from the generally accepted correct method of division in these cases.

“ The possibility of early settlement in all circumstances is decreasing as damage awards have increased out of recognition compared to earlier claims. General damages have also increased, in addition to which it is not uncommon to see an award for reduced capacity in the labour market, future loss of earnings, and so on. ”

RESERVING AGAINST HAVS INJURY: FINANCIAL IMPLICATIONS

The below table demonstrates how a reserve may be calculated for a serious injury, and assessed medically, using the Stockholm Neurological Scale.

Case Study: potential cost

Claimant age 40, assessed as 3R5/3L5 2SN on the Stockholm scale	
Pain, suffering and loss of amenity	£15,000
Past loss of earnings, 1 year net	£15,000
Future loss of earnings (net wage by yrs of employment adjusted)	£126,525
Loss of congenial employment	£5,000
Pension loss	£10,000
Care/ Services	£30,000
Costs	£25,000
Total	£226,525

Existing methodology and protocols are in place for evaluating HAVS claims, and the previous calculation shows these can reach significant values. The situation is particularly accentuated when a relatively young employee has developed to the advanced stages. Employers need to be aware of the financial impact this may have on their business.

¹ This is a scale used to classify neurological impairment severity. It includes a range of subjective impairment levels based on symptom reporting.

“The new legislation sets out explicit duties that are only implicit under current provisions. EU member states have until 6 July 2005 to introduce the regulations. They will be transposed in Great Britain by the Control of Vibration at Work Regulations 2005.”

VIBRATION LEGISLATION: THE CURRENT SITUATION

Irrespective of new legislation, much is already required via existing legislation, including:

- The Health and Safety at Work etc Act – *general duties of employers, employees and equipment suppliers*
- The Management of Health and Safety at Work Regulations – *risk assessment, health surveillance, employee competence and training*
- The Provision and Use of Work Equipment Regulations – *suitability and maintenance of equipment, operator competence, information and training*
- The Workplace (Health, Safety and Welfare) Regulations – *safe working environment*
- The Supply of Machinery (Safety) Regulations – *inherent safety by design, safe use instructions, vibration level information*
- The Reporting of Injuries, Disease and Dangerous Occurrences Regulations – *report vibration white finger (VWF)*
- The Safety Representatives and Safety Committee Regulations – *employee consultation*

Additionally, technical standards and supporting guidance are widely established which, along with the general duties outlined above, will continue to apply.

The new legislation sets out explicit duties that are only implicit under current provisions. EU member states have until 6 July 2005 to introduce the regulations. They will be transposed in Great Britain by the Control of Vibration at Work Regulations 2005.

NEW LEGISLATION

The principal elements of the new regulations include:

INTRODUCTION OF AN EXPOSURE ACTION VALUE (EAV)

This is the level of daily exposure for any worker. If this is exceeded, specific action is required to be taken to reduce the risk. A value of 2.5m/s² normalised to a working day of 8 hours duration is applied.

There are no established safe levels for vibration exposure. As such, the EAV of 2.5m/s² does NOT constitute a safe exposure value below which damage cannot occur. HAVS claims can still be successful even below this level.

INTRODUCTION OF EXPOSURE LIMIT VALUE (ELV)

This is the level of daily exposure for any worker which must not be exceeded. A value of 5.0m/s² normalised to a working day of 8 hours duration is applied.



A(8) VALUE

The standardised method for determining the average daily exposure level, normalised to a standard 8 hour working day, is known as the A(8). Historically, the A(8) has been based on the vibration magnitude in the dominant axis of the tool. However, the A(8) is now measured on the root sum of squares (or vector sum as this is known) of the frequency-weighted acceleration values determined for all three axis. Both are measured in m/s^2 but, in practical terms, this vector sum calculation is greater and so - in effect - represents a reduction in acceptable vibration levels.

RISK ASSESSMENTS

The employer will be required to carry out suitable and sufficient risk assessments, then implement appropriate controls to eliminate or control vibration to below the EAV and/or to accommodate employees who are shown to be particularly susceptible.

HEALTH SURVEILLANCE

Provides health surveillance to those at risk (further details explained on page 10).

INFORMATION & TRAINING

Affected employees are to be provided with relevant information, instruction and training.

EQUIPMENT SAFETY STANDARDS AND NEW LEGISLATION

One issue that has arisen in relation to the new legislation is that of equipment meeting the new standards.

To manage this problem, a transitional period from now until 6 July 2010 has been identified for equipment first supplied prior to 6 July 2007. This is only for equipment where technological and organisational improvement is shown to be impractical. The situation is considered an exception rather than the norm and would be unlikely to present an adequate defence against associated injury claims.



“ Preventative and corrective risk management strategies usually include elimination or, where it is practical, a combination of substitution or reduction. This would be implemented together with barriers, instruction, warnings and personal protective equipment...” ”

RISK MANAGEMENT STRATEGIES – BACK TO BASICS?

Preventative and corrective risk management strategies usually include elimination or, where it is not practical, a combination of substitution or reduction. This would be implemented together with barriers, instruction, warnings and personal protective equipment, though this last measure would only be to a very limited extent in the HAVS context.

Initiatives to eliminate HAV-related processes at source would be the preferred option. Clearly, it should be noted that any proposed changes to process or equipment may produce further risks which need to be assessed too.

The business case for such changes in process would normally focus on cost-savings from improved product quality and operational productivity. The added value they bring is often a reduced HAV exposure, so companies are presented with a win-win scenario.

Nevertheless, in many instances there is a degree of inevitability about the need for some processes where HAV may be present, so employers should be fully aware of how to manage the risks.

MANAGING HAV EXPOSURE

In order to prevent HAVS and to ensure the framework is in place to successfully defend associated allegations of negligence in future, a management system is required that ensures:

- Risk assessments are suitable and sufficient
- Systems of work minimise exposure
- Employees are properly trained
- Work equipment is suitable for the task and properly maintained
- Health monitoring of those at risk
- Record-keeping systems for retaining evidence of each of the above

RISK ASSESSMENTS

The regulations and associated guidance explore what is deemed to be 'suitable and sufficient' to satisfy the legislation and thus, the criminal courts.

For determining A(8) values, it is suggested that exposure levels could be calculated using data available from manufacturers or other generic work equipment databases. Alternatively, a technical assessment **may** be necessary to establish accurate field values.

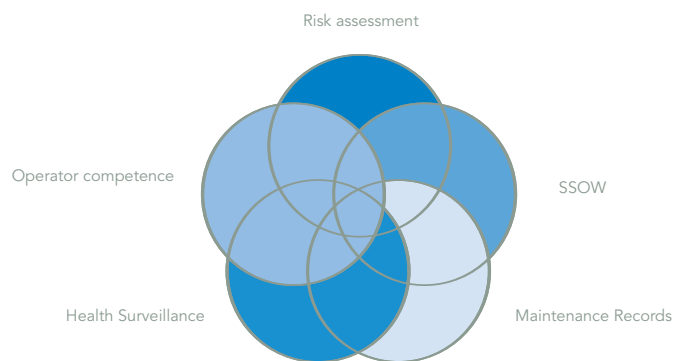
From a civil perspective, 'suitable and sufficient' can take on a new persona, given the differing burden of proof. Here, it is for the employer to satisfy the court that a worker was not exposed to excessive levels in the **specific** work activities they undertook. In most cases, this implies that a technical risk assessment **has** to be undertaken for any activity where there is a risk of HAV, such that accurate, field-condition exposure levels can be established.

Furthermore, periodic reassessments are required to prove the continued validity of the original. When considering the various activities, tools, employee numbers and different materials worked upon, it is fair to say that delivering risk assessments that are 'suitable and sufficient' will be a challenge. It quickly becomes evident that this requires appropriate resource and project management. Without this, the defence of claims could well be a non-starter.

Employers therefore need to understand the different standards that effectively apply to satisfy both criminal and civil law. They can then consider whether the exposure values being used are generic, or whether they accurately reflect field conditions in the workplace. If it is the former, a more sophisticated approach is necessary in order to defend claims.

HAVS EVIDENCE-BASED RECORDS

The integrity of the employer's system could be challenged and both the civil and criminal courts apply different burdens of proof. In order to defend such claims, an evidence-based approach with high standards of documentation and records will be critical, particularly given the time lag between initial exposure and claims. This will be especially critical when the process is no longer undertaken by the business.



SAFE SYSTEM OF WORK (SSOW)

The purpose of a safe system of work (SSOW) in this context is to identify a task methodology that ensures a consistent, safe approach is adopted. This ensures that for specific tasks, A(8) values are always at a minimum and in any case, maintained below the EAV.

From a claims defence viewpoint, documented safe systems can be vital for demonstrating that a formal procedure is in place, the principal points of which have been communicated to employees during formal task-specific training.

In preparing a SSOW, employers need to consider those elements where inconsistencies and variations may affect overall exposure levels. The specifics of the safe system will depend largely on the details of the tasks in question. It is therefore difficult to prescribe against all the potential permutations involved.

The general themes would probably relate to:

- Selection of the correct equipment for the task
- Selection of the correct tool for the material being worked on
- Tool maintenance
- Cycle times and repetition frequencies so that total trigger times can be assessed with reasonable accuracy
- Accumulative effect of multiple tasks, using varying tools and trigger times

A review of each aspect of the work activity should assess how it can impact, positively and negatively, on the A(8) value. Once understood, a system of work can be devised that ensures all personnel under all conditions will be able to undertake the task in relative safety.

TIME-BASED CONTROL

Restricting operators' trigger times, for instance by job rotation, is a method often adopted where exposure to higher vibration tasks is unavoidable. Whilst commendable, this option presents an additional burden if a claim has to be defended, as it would have to be proved how that particular element of the work had been managed. A SSOW therefore needs to consider not only how to restrict trigger times, but also how this is to be evidenced and archived.

In-line devices are now available for power tools that monitor machine "on-time". Unfortunately, they do not monitor power usage and so may not reflect the actual time the tool is being applied to the work piece, but this is a step in the right

direction. In time, it may be that integrated, real-time tool vibration management software packages may be developed.

Ultimately, the difficulties of developing a system of work capable of consistently ensuring operators' A(8) levels are maintained below 2.5 m/s² is challenging, if not impossible, where high vibration tools are used and where trigger times could be inadvertently extended.

To address this, employers should look at process redesigns to ensure trigger times are minimised. Concurrently, safer equipment should be provided so overall exposures will be well below the exposure action value, without the need for artificial task breaks.

EMPLOYEE TRAINING

From a claims defence perspective, it is vital that employers can prove that their employees are competent, by proving how an individual has been given the appropriate information, instruction and training to enable them complete the task in a safe manner.

Gaps in this defence normally appear as one or a combination of:

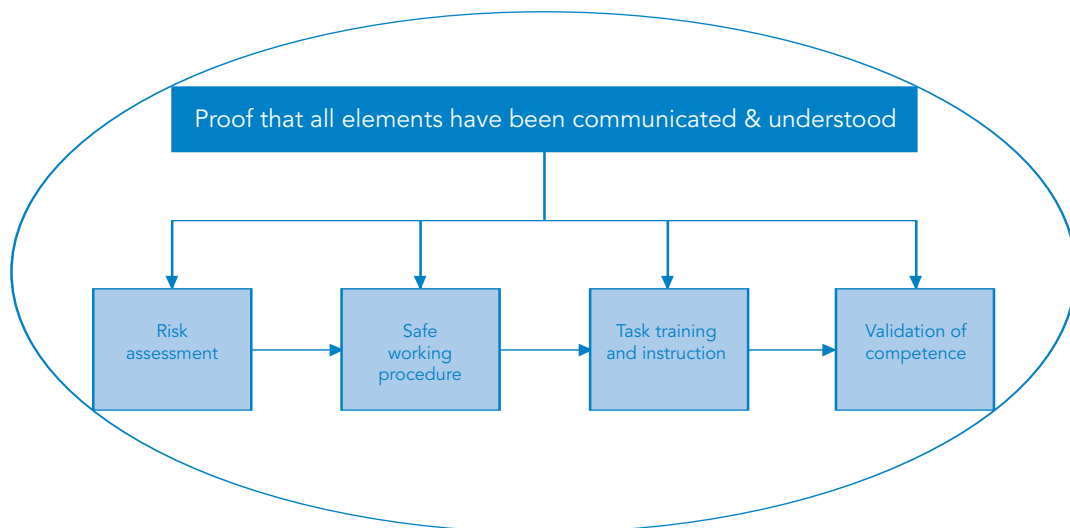
- Training was inadequate or insufficient
- Adequate training was given, but competence was not attained
- Training and competency were adequate, but evidence supporting the process is flawed

The provision of information, instruction and training is therefore a critical component of the employee competence process and should be supported with evidence, detail of the training provided and how competence has been validated.

The core elements of a training programme for any task should include:

- A reference to the task risk assessment and documented SSOW
- Explanation of the hazards and their risk associated with the task, detailing principal findings of technical surveys
- Explanation of controls adopted to minimise risks including documented safe systems of work
- Demonstration of the safe manner to undertake the task
- Validation of the trainee's understanding
- Validation of competence and authorisation to undertake the task
- On-the-job, trainer validation that the individual is carrying out the task as per the SSW

COMPETENCE TRAINING RECORD



Applying these principles to HAV tasks, competence-based records need to demonstrate the following elements were adequately covered during the training process:

- Content of relevant procedural documentation, for instance risk assessment & SSOW
- Scheduling, trigger times and/or job rotation requirements
- Equipment suitability for a given task/material
- Correct methodology
- Equipment maintenance & operators' duties
- Defect reporting mechanisms
- Health effects
- Recognition and reporting of symptoms
- Occupational health surveillance arrangements

ANY GAPS IN THESE ARRANGEMENTS SHOULD BE QUICKLY ADDRESSED TO ENSURE THAT FUTURE COMPETENCE-RELATED NEGLIGENCE ALLEGATIONS CAN BE ROBUSTLY DEFENDED.

WORK EQUIPMENT MAINTENANCE

A(8) values are used to determine the maximum period a given task can be undertaken in relative safety. Where the A(8) value is less than 2.5 m/s², employers may be tempted to interpret this as explicit justification to use the equipment for a full working shift –even though the new regulations requires that vibration exposure be minimised.

Worryingly, however, this value has been determined at a given point in time when the equipment was being used in a particular state or condition. It needs to be understood that the condition of the equipment, and particularly the tool, can cause significant variation in the A(8) values recorded. This is particularly true where, for example, tools become imbalanced and worn. In addition, certain operators may use tools differently to how the manufacturer or employer may have envisaged, thereby altering vibration levels during operation.

If the assumed A(8) value is to be credible, it has to be shown that the equipment and tools used over a period of time were in a condition that was representative of technical risk assessments conducted at the time. Ideally, a regime of routine condition based monitoring and/or planned preventative maintenance schedules should be in place.

Records of equipment maintenance are critical when defending HAVS claims. These provide the basis of arguments to support the view that exposure levels were unlikely to have fluctuated significantly higher than the A(8) value. Without robust equipment maintenance records, defending HAVS claims will be very difficult.

FREQUENCY OF TECHNICAL RISK ASSESSMENTS

Since the Vibration at Work Regulations do not specifically stipulate the need for a technical risk assessment in every case, then neither do they explicitly stipulate the reassessment period.

QBE's view is that the assessments should be repeated annually. This would ultimately be determined by a risk-based programme that is governed by, and can react quickly to:

- Changes in work patterns and/or equipment usage
- Trends in the measured A(8) value
- Incidents or deterioration of HAVS symptoms

If there are factors that adversely affect the assumed A(8), the equipment should be reassessed on a more frequent basis and vice versa. This view supports the need for the risk assessment subject to be adequately resourced and project managed.

HEALTH SURVEILLANCE

HAVS is a serious occupational disease. It may eventually lead to the loss of hand function and affect employability. Where HAVS is identified at an early stage, reducing exposure is likely to delay the development of worse symptoms. Health surveillance is therefore a critical component of the employer's reactive risk management system.

It is also a specific requirement of the Control of Vibration at Work Regulations and its supporting guidance, where the categories for inclusion are:

- Employees exposed above the Exposure Action Level
- Employees at risk due to a link between their exposure and HAVS
- Employee who have a diagnosis of HAVS (even when exposed below the EAV)

This suggests that health surveillance is not routinely required where the A(8) is below the EAV, unless explicitly identified through the risk assessment process or reported symptoms. QBE however, believes that all personnel who are frequently exposed to hand arm vibration should be included in a risk-based health surveillance programme - an objective clinical assessment can be made, rather than relying reactively on the employee to report what may be perceived as unimportant, unrelated or trivial symptoms.

When defending claims, it is vital that an employer can show all reasonable steps have been taken to prevent and detect the onset of HAVS. Surveillance needs to be employer-driven, not employee-led.

Early assessment of newly exposed workers is also essential. Susceptible individuals can develop symptoms in 6 months or less so an effective health surveillance programme needs to be established and operated by occupational health professionals who are suitably trained and competent in HAVS. Without the assistance of an occupational health provider, a company occupational doctor or similar, health surveillance by the employer is deemed to be inadequate. When health surveillance is required, it should be carried out:

- Pre-employment (or baseline assessment)
- Pre-job change to HAV tasks; and
- Routinely thereafter on an annual basis

The strategy employers adopt for adequately managing HAVS will depend on reactive information provided by the occupational health service provider.



CONCLUSIONS

Historical exposure to hand arm vibration has led to a significant increase in associated claims. They are usually difficult to both assess and defend due in many instances to limitations in the data employers generated or retained from operations going back many years.

The Control of Vibration at Work Regulations 2005 places explicit duties on employers to assess and properly control the risk associated with exposure to vibration at work. The primary changes to existing provisions are with the introduction of a new exposure action value and exposure limit value, together with a standardised method for determining the exposure value. Health surveillance is also an explicit requirement with defined criteria.

Compliance with the legislation will reduce the long-term incidence of HAVS, with a consequent reduction in future associated claims once historical-related exposure claims have subsided.

The key defences used by insurers in HAVS claims will involve arguments based on one or more of the following:

- Technical risk assessments to demonstrate definitively that exposure was not excessive
- Maintenance records to indicate equipment was properly maintained, such that the A(8) did not fluctuate significantly
- Training records to adequately reflect the competence of the individual
- Health surveillance to react quickly to symptomology

Employers who have HAV activities in their workplace, and who operate a risk management system to embrace these elements, will eventually see a reduction of HAVS claims and be much better placed to defend those that do arise. As a result, those organisations will be a more attractive proposition to the insurance market, and employers' liability insurers in particular.

AUTHOR BIOGRAPHIES

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Philip Bladon joined QBE in 2003. He has 15 years of practical and managerial experience in the mining and the metals industries, as well as 10 years in the insurance sector where he has specialised in liability risk control, primarily in the high-hazard industries.

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FEEDBACK

The QBE Insurance Issues Forum has been developed to focus on, and analyse, current topical issues in the field of occupational health, health and safety, risk and insurance management, and human resources.

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