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### Material milestone

Breakthrough for bio-based composites

### Safety in space

NASA's biggest challenges

### Within the law

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# PREVENTING VIOLENCE IN THE WORKPLACE

**S**outh Africa's Commission for Employment Equity [CEE] – a division within the Department of Employment and Labour – has endorsed the International Labour Organisation's recently adopted violence and harassment convention.

Noteworthy is the fact that the CEE has indicated that, as a matter of urgency, it will advise the Minister of Employment and Labour, Thembelani Nxesi, to recommend to parliament the ratification of the convention.

As part of its preparations for readiness, the CEE is reviewing current employment equity policy instruments with the aim of developing a comprehensive Code of Good Practice on the Elimination of Violence and Harassment in the workplace. In a statement, the CEE says it envisages that the new code will be published for implementation by June next year.

"The CEE recognises the right of every person to a world free from violence and harassment," the statement says. Quoting chairperson Tabea Kabinde, it urges people from every walk of life to facilitate the elimination of the scourge wherever it manifests – in homes, communities, workplaces or society as whole. "We note that each member of our society has an important responsibility to promote a safe environment," the statement says.

Turning specifically to violence and harassment in the workplace, the CEE points out that the trend appears to be developing rapidly worldwide, and requires immediate intervention. "The CEE recognises the fact that violence and harassment in the workplace constitutes a human rights violation or abuse, and that violence and harassment are a threat to equal opportunities, are unacceptable and incompatible with dignified, decent work.

"The commission submits that the effects of violence

and harassment affect a person's psychological, emotional and physical well-being, as well as their dignity, family and social environment. Notably, violence and harassment are incompatible with the promotion of sustainable enterprises, and impact negatively on the organisation of work, workplace relations, worker engagements, enterprise reputation, and on productivity."

The statement adds that employers have a duty to ensure a safe working environment free of discrimination for all employees. It also states that governments and workers – including worker and employer organisations – are equally and legally obligated to take steps to eliminate any form of discrimination.

"They must implement measures such as strategies, policies, practices, procedures and programmes to prevent violence and harassment from taking place in the workplace and society as whole," the statement says.

According to the CEE, current labour laws that directly and indirectly address harassment include the Occupational Health and Safety Act; the Employment Equity Act supplemented by Codes of Good Practice on the Handling of Sexual Harassment Cases in the workplace [2005] and the Harassment provision in the Code of Good Practice on the Integration of Employment Equity into Human Resources Policies and Practices [2005].

"These laws and codes are very clear on legal obligations of employers and employees in creating safe working environments free from violence and harassment," the statement says, indicating that adoption of the International Labour Organisation's convention will help to strengthen the effectiveness of existing legislation.

**WYNTER MURDOCH**



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Haven't yet seen **SHEQ MANAGEMENT** on social media? Not to worry, here are some of our most popular posts from the last month.

**SHEQ Management**

Various companies, including Google, are now allowing employees to bring their dogs to work! Here are some of the benefits of allowing pets at the office ... and some challenges, including protecting employees from diseases like ringworm or allergies. <http://bit.ly/2t8b5F>



**Why more companies are going dog friendly**  
Bringing pet dogs into the workplace is becoming increasingly common.

**SHEQ Management**

Marie Jose Carranza points out that stress and fatigue in the workplace can kill employees at a much higher rate than accidents. While the workplace is safer, the emotional wellbeing of employees is often overlooked! <http://bit.ly/2t8b5F>



**SHEQ Management**

Safety officers can find themselves playing inventory manager rather than focussing their energy on providing safe work environments. Here are a few ways to bring PPE closer to employees to free up the safety officer's time. <http://bit.ly/2t8b5F>



**PPE at the point of use**  
What are the benefits of having personal protective equipment at the ...

**SHEQ Management**

Anthony Forsyth argues in favour of industrial manslaughter legislation in Australia to impose criminal liability on corporations and senior officers when a fatality occurs in the workplace. Do you agree with him? Will this improve safety? <http://bit.ly/2t8b5F>



**It's time for industrial manslaughter laws before more lives are lost**

**SHEQ Management**

Investing in the right PPE can reduce expenses as the equipment won't break or damage, ensuring that employees are protected and productive. However, this will require more than just a phone call. Here's how you should go about picking the right PPE. <http://bit.ly/2t8b5F>



**SHEQ Management**

Jamie Glas shares some insights into the benefits of providing female employees with PPE designed for women. It's all about fit! <http://bit.ly/2t8b5F>



**Considering Comfort in Women's PPE**  
When it comes to personal protective equipment, one size does not fit all...

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HACK attacks, ransom threats and theft of money through fraudulent transactions are all becoming a stark reality for legal professionals and law firms around the world. Businesses shouldn't underestimate the value of good cyber security. <http://bit.ly/2t8b5F>



**Insurance risks and cyber crime - SHEQ Management**  
South African legal professionals have become major targets as

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New research shows that virtual reality can provide valuable insights into the behavior of workers during emergency evacuation that can improve safety awareness. <http://bit.ly/2t8b5F>



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A job safety analysis helps to identify and address any potential health and safety hazards. Unsure of how to conduct a job safety analysis? Here are some practical steps to get you started! <http://bit.ly/2t8b5F>



**The benefits of a Job Safety Analysis**  
A Job Safety Analysis 'helps integrate accepted safety and health principl...

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Every Gauteng state health facility assessed was found to be non-compliant with regards to occupational health and safety standards. <http://bit.ly/2t8b5F>



**All Gauteng state hospitals and clinics fail safety audit**  
Not a single state health facility in Gauteng has been assessed as comply...

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While OHS budgets are usually the first things to be slashed when companies tighten purse strings, it is important to continue to invest in risk management procedures such as risk identification and reviewing processes. <http://bit.ly/2t8b5F>



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In 2015, Ikea Group - the parent company of Ikea - made a bold pledge: by 2025, the company will deliver every item worldwide by electric vehicle. It is already achieving this in Shanghai at GongGreen! <http://bit.ly/2t8b5F>



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## SA BUSINESSWOMAN FINDS HER VIRGINITY!

If you had asked Ingrid Osborne 20 years ago if she could have pictured herself as one of 60 businessmen and women – and the only South African – in a room with Richard Branson and his Virgin executives, her response would have been in the affirmative, because she is driven, motivated and passionate about changing the world around her and the world at large!

So, did the co-founder of HSEC Online find herself in a room with Branson? In fact, she spent the week with him and his team! Through HSEC Online's win in Endeavor South Africa's and First National Bank's most Innovative Business Awards in 2018, Osborne was invited to participate in Branson's Leader's Experience – Finding My Virginity – and landed the opportunity of a lifetime!

The backdrop to this amazing experience was his private home, Necker Island. After 36 hours of flight time, three stops and one little island hopper, Osborne landed on the island, not sure what to expect over the next five days. There was, however, something about which she was certain – she was ready to Find Her Virginity and have an out-of-business experience!

The concept behind this exclusive, transformational Leader's Experience programme was designed to inspire vision, and activate a network of global leaders.

"This was a great opportunity to engage with other extraordinary entrepreneurs and some rather special executives at Virgin Group such as Jason Felts, CEO of Virgin Produced; Christine Choi, brand and communications executive; Latif Peracha, managing director at Virgin Management; Luca Valotta, president and managing director of Virgin Active Italy and Stephen Attenborough, commercial director of Virgin Galactic."

So, what do 60 businessmen and women, Richard Branson



and some of Virgin's heavyweight executives get up to on an island [other than having a sushi boat in a pool]? "We spent a lot of time engaged in what Virgin is and how the brand was built. We looked at a case study of 'Virgin: Building a brand, building a business'."

"Then we spent time learning to craft an approach to communications and finally discussed developing a vision for our businesses through customer experience and design. I was blown away by how accommodating and invested everyone was. It was quality time spent with extraordinary entrepreneurs sharing vast amounts of knowledge and experience."

What did Osborne take back from this experience? "While I didn't expect the opportunity to change my business or me fundamentally, the opportunity to have five days to focus on my business and its goals through a new lens crystallised an ethos in me, which I have already begun to apply. In simple terms, it's about being bold and not waiting for anything to come to me – but to be even more cognisant of my own ability to make things happen, both for my business and for my country."

Wrapping up this incredible learning experience, the group spent the last day discussing Virgin Galactic with Stephen Attenborough and the amazing work being done to get ordinary people into space – an adventure in which Osborne would like to take part.

And finally, what motto did she come away with? "Humanity, humility and humour. These are three things we can all take away with us to ensure lifelong happiness," she says.



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## HYUNDAI DEVELOPS WEARABLE EXOSKELETON

Hyundai has developed a Vest EXoskeleton [VEX] – a wearable robot created to assist industrial workers who spend long hours working in overhead environments.

The VEX has been designed to enhance productivity and reduce fatigue by imitating the movement of human joints to boost load support and mobility. Weighing 2,5 kg, the VEX is worn like a backpack. Users place their arms through shoulder straps, then fasten chest and waist buckles. The back section is adjustable in length by up to 18 cm to fit a variety of body sizes, while the degree of force assistance can be adjusted over six levels – up to as much as 5,5 kg/f.

“VEX gives workers greater load support, mobility and adaptability when operating in overhead environments,” says Dong Jin Hyun, head of robotics at Hyundai.

The newly developed vest is targeted at production-line workers whose jobs are primarily overhead, such as those bolting items to the undersides of vehicles, fitting brake tubes or attaching exhausts. Development of the VEX included a pilot programme in two Hyundai plants in the United States [US], where it was successful in boosting productivity.

The VEX is expected to go into commercial production in December and is projected to cost as much as 30-percent less than existing products. It will join another product developed by

Hyundai’s robotics team – a lightweight, Chairless Exoskeleton [CEX], which has been designed to support workers in a sitting position.

The CEX’s waist, thigh and knee belts can be easily fitted and adjusted according to a user’s body size and height and can be set to three angles – 85°, 70° and 55°. By reducing the user’s back and lower body muscle activity by up to 40 percent, the CEX is said to reduce fatigue and improve efficiency.

In a statement, a Hyundai representative says development of the VEX and CEX demonstrates the Korean motor group’s commitment to the health and well-being of its workers and its ongoing exploration of advanced robotics.

According to the International Federation of Robotics, the wearable robotics industry is growing at about 14 percent annually. By 2021 around 630 000 commercial robots are predicted to be sold worldwide, with the greatest demand coming from the automotive sector. In 2017, 126 000 robots were supplied to the sector, representing about 33 percent of demand for commercial robots.

“Recognising the market trend, Hyundai is making active investments and strengthening its presence within the growing robotics industry by securing relevant technologies,” the statement says.



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## FIBRE COMPOSITE **BREAKTHROUGH**

Germany's Fraunhofer Institute claims a material milestone in the development of bio-based fibre composites

Thanks to their wide range of possible applications, traditional fibre composites are popular materials in manufacturing – despite their relatively high production and disposal costs. However, the drawbacks can now be circumvented thanks to the development of a new, self-reinforced composite material made of polylactide (PLA).

Bio-based, easy to recycle and cheaper to produce, the material is said to be ideal for use in sporting, automotive and medical applications. A thermoplastic bio-polyester, PLA is made using lactic acids, renewable resources from agricultural waste, or specially cultivated raw materials such as sugarcane.

"In this project, we've brought the benefits of PLA to the next application level by fusing two types of polylactide to create a self-reinforced composite," says Kevin Moser, project manager

at Fraunhofer ICT.

He says the material combines the advantages of PLA with those of composites. "It has high mechanical strength and rigidity, while also exhibiting good hydrolysis resistance. Like pure PLA, the material is fully bio-based, easy to recycle, ductile and even industrially biodegradable."

Advantages include substantially reduced manufacturing costs, since energy demands for PLA production are about half of those needed to manufacture petroleum-based plastics such as polypropylene and polycarbonate.

Additionally, recycling is simple since fibres do not have to be separated from a matrix – an issue that makes the recycling of conventional fibre-composite materials much trickier.

"The material, which can be manufactured on an industrial scale, represents a milestone in the development of functionalised, bio-based material systems with high mechanical strength," Moser maintains.

"Also, it makes a substantial contribution to the closed-loop economy because the composite can also be melted and, using existing manufacturing equipment, reprocessed into a new product for high-quality applications."

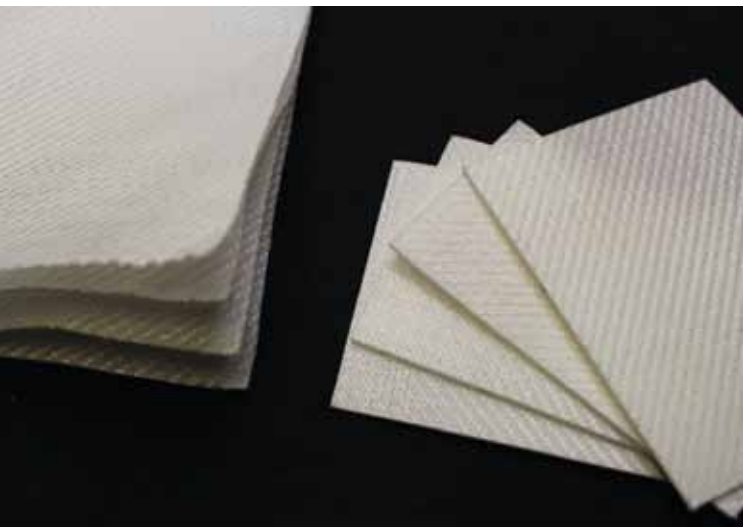
In the manufacture of the composite, two different PLA types with different melting points are combined into a self-reinforced composite material. The higher-melting-point PLA is embedded as a reinforcing fibre in the lower-melting-



**ABOVE:** Fibres and textiles made from polylactide

**RIGHT:** Amorphous, crystalline polylactide granulate

**BELOW:** Bio-based composite sheets manufactured from two polylactide types with different melting points



point matrix. The resulting material rigidity can compete with commercially available self-reinforced polypropylene composites.

Apart from the Fraunhofer Institute, other partners in the project – which is funded by the European Union – include the Technical University of Denmark, the Belgian textile research institute Centexbel and the Danish firm Comfil.

The resource-conserving concept with great application potential also impressed the jury at JEC 2019, Europe's largest trade fair for composite materials, winning first prize in the sustainability category.



## ISOMETRIX JOINS FORCES **WITH NOSA**

The Carlyle Group, a global investment firm with assets under management worth US\$ 223 billion [R3,3 trillion], has acquired a majority stake in IsoMetrix – one of the world's leading environmental, health and safety (EHS) software vendors – through its US\$ 698-million [R10,3 billion] Carlyle Africa [Buyout] Fund. Madison Park Group served as exclusive financial advisor to IsoMetrix on the transaction and existing shareholders and management retain a significant stake in the business.

The investment will equip IsoMetrix for further growth, enabling the company to compete more aggressively for outright leadership within the EHS and integrated risk management software arena through accelerated software development.

The acquisition also offers synergies with occupational health and safety (OHS) risk-management solutions provider NOSA – another recent Carlyle Group acquisition.

IsoMetrix and NOSA will continue to operate independently. However, they will collaborate in developing and cross-selling to enterprise clients across mining, oil and gas, power and transport sectors, offering a suite of technology-enabled managed solutions designed to address environmental and occupational health and safety risks.

By working together, IsoMetrix and NOSA, with more than 1 000 client deployments across the world, will pioneer the development of digital EHS managed services to cross-sell



EHS and risk software to both IsoMetrix and NOSA's global customer base, empowering companies across industries to achieve a proactive view of integrated risk to achieve safer, more resilient business models.

IsoMetrix has offices in South Africa, the United States, Canada and Australia and was recently included in the 2019 Verdantix EHS Leaders Quadrant. The Carlyle Group will support the continued growth of IsoMetrix and NOSA through its sub-Saharan Africa fund and its global network.

As companies face increased scrutiny of their environmental, social and governance performance, IsoMetrix is well-positioned to provide relevant metrics, data-driven insights and expert advice on sustainability and corporate responsibility.

\*See P29: New NOSA service offering enhances businesses

## Book your space in the 2020 SHEQ MANAGEMENT Handbook today!

The Handbook offers crucial information on safety, health, environment and quality management in a variety of industries such as forestry, mining, agriculture, construction, food and beverage, manufacturing and engineering, pharmaceutical and healthcare, transport and petrochemicals.

It includes listings of relevant service providers from personal protective equipment (PPE) to training and waste-management organisations - and everything in between. The **SHEQ MANAGEMENT** Handbook is a must-have publication for every OHS manager and a great opportunity for service providers to advertise.



To participate or for general enquiries about the SHEQ MANAGEMENT 2020 Handbook, contact Barend van Wyk at 076 217 1883 or [barend@charmont.co.za](mailto:barend@charmont.co.za).

## CHAMPIONING REFRIGERANT RECOVERY AND RECLAMATION

Speciality chemicals supplier A-Gas South Africa claims to be taking the lead in preventing the venting of refrigerants into the atmosphere, which not only damages the ozone layer, but contributes to global warming.

The company is achieving this through its association with Rapid Recovery of the United States [US], which it acquired in 2016. The company is not only the largest refrigerant recovery company in America, but in the world. "We recover more refrigerant than any other single company globally," Rapid Recovery MD Adam Dykstra reveals.

"Anywhere there is a regulatory compliance for a contractor, or a demand for such compliance from a customer, there is a need for high-speed refrigerant recovery solutions," Dykstra explains. He adds that the recovery equipment available to contractors today is off-the-shelf and bulky.

"We offer a service that essentially encompasses both a technical, compliance and legal solution. We not only help contractors to comply with the law, but also give their own customers peace-of-mind that they are dealing with professionals well-versed in the latest technology and trends."

One of these latest trends is the A-Gas Rapid Recovery

service, which offers contractors the latest equipment. "Our machines are based on the simple concept of a compressor and a condenser. The system recovers refrigerant from one unit to another really fast, preventing it from venting into the atmosphere."

Sales manager Michael Labacher explains that SANS 10147 regulations have specific refrigerant recovery, tracking, handling, and documentation requirements.

"A-Gas Rapid Recovery provides all necessary documentation electronically to clients," he says.

"Rapid Recovery is performed by us, while the contractor team can utilise its specialised skills to diagnose and repair the equipment, rather than handling empty and full recovery cylinders, and waiting on traditional recovery equipment. Custom-made petrol-operated machines are typically 10-times faster than a contractor's recovery machine."

Dykstra cautions that venting occurs when a line to a machine is simply cut, or it develops a leak, allowing the refrigerant to escape into the atmosphere. "The correct thing to do is to capture that refrigerant, keep it from damaging the ozone layer and also from causing global warming, clean it, and bring it back onto the market."



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- Pregnancy & Breast feeding in the workplace - legislation, policy and compliance with legislation
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- Dispensing Practices
- Dispensing Refresher
- Physical Examination & Health Assessment Refresher
- NIMART (Nurse initiated management of anti-retroviral treatment)

#### MULTIDISCIPLINARY SHORT COURSES

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- Spirometry Testing Techniques
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- HIV in the Workplace
- Audiometry Refresher
- Spirometry Refresher

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# IS OUR APPROACH TO SAFETY CRAZY OR COMMITTED?

## Are we approaching safety with a “get out of jail free card” or are we doing safety for all the right reasons?

**A**s members of the safety and health fraternity, are we crazy in the way we approach safety in our respective companies, or can we confidently claim to be committed to safety?

Are we focusing on a crazy number of safety rules and regulations just to “cover our [corporate] backs” and keep management out of court, or are we seriously committed and focused on sending everyone home safely, every day?

With more than 32 years of experience in the safety and health field in various companies around the world, I can confirm that the latter is the prevailing and sincere objective of many leading companies, and I applaud them for making a real difference.

There are, however, unfortunately still many companies that implement safety controls for all the wrong reasons. Their primary motivations include: to avoid corporate prosecution, for leaders or safety and health practitioners to be able to report a favourable total recordable case rate or lost-time injury frequency rate at their next management meeting, or to be able to boast a favourable number of injury-free days on the notice board at the main gate.

In those cases, we have a responsibility to shift our safety approach from crazy to committed – from a senseless and seemingly endless tick-box approach to one that’s committed solely and directly to sending all employees, contractors and visitors home safely, every day.

### **WE NEED SAFETY AND HEALTH PROFESSIONALS: MYTH OR REALITY?**

Few things can be as damaging to the reputation of the safety and health profession as appointing unqualified or under-qualified people to positions of safety and health professionals.

Many safety practitioners embark on safety-related studies, and thereby achieve either a diploma, degree and in some cases, a master’s degree in safety. They have earned the right to be called safety and health professionals.

Unfortunately, however, many companies put employees through a basic two-to-three week safety course and thereafter appoint them as the company’s safety and health professional. For a company to consider them capable of providing the

necessary professional support at that point is both a risk to the business and an insult to the profession. Can you imagine companies employing someone with a two-week course in accounting as their financial manager, or, similarly, a tradesman as their engineering manager? Highly unlikely!

Companies need safety and health professionals. I strongly maintain that only appropriately qualified and experienced people should be appointed to these positions. Only then can we ensure that those portfolios are able to deliver an effective safety and health service to the business.

In addition, and for those under-qualified people, who are perhaps already working in the safety and health field, companies need to ensure that they receive appropriate training, qualifications and experience as a matter of urgency. Only then should they be considered “safety professionals”.

### **TRAINING VERSUS LEARNING**

Most companies conduct general pre-entry gate induction for new employees, contractors, visitors, and annual refresher induction programmes.

Unfortunately, however, many of these induction sessions are “death by PowerPoint” – a seemingly endless number of dense slides with the presenter trying to convey far too much safety information for it to be useful to the audience.

These sessions contain too much information, and are presented to an audience that is too large in number. This severely hampers the transfer of information and compromises the audiences’ ability to interpret and retain that information. As a result, it is unlikely that they’ll subsequently conduct their activities in a safe manner.

We need to be more critical of how and what we deliver during these training sessions. If our intention is to ensure everyone’s safety while on site, is it helpful or necessary to confirm a long list of all the emergency telephone numbers, or to remind visitors to wash their hands after using the bathroom?

We need to be far more strategic in both the content that we share during these training sessions as well as in the way that we share it. The information needs to be useful, directly relevant to everyone’s safety on site, and easy for the



audience to internalise.

An added challenge is that it's often the safety practitioners who compile these induction training programmes. While they may be subject experts, they are, understandably, not always experts in the field of effective public speaking or PowerPoint delivery, and in fact may have little or no experience in presenting relevant information in a tangible way.

If necessary, companies need to consider appointing a professional to compile appropriate slides for their induction programme, which should focus only on the critical safety elements, and should be aimed at a learning experience rather than a teaching one. Consideration needs to be given to the ideal number of people in an audience as well as the ideal length/duration of a session.

### SAFETY TALKS VERSUS ENGAGING SESSIONS

Just as companies have safety induction sessions, so, too, are safety talks or toolbox-talk initiatives common in most operations. These vary from a five-minute pre-shift talk to a more detailed discussion with employees (and often contractors) on specific topics, for example safety rules, performance issues, or concerns on site at that particular time or phase of production.

As with the induction sessions, the content and how it is delivered really does matter. It is, for example, not uncommon for leaders, supervisors or safety practitioners to read the safety talk content to their audiences, or to give them the material in soft or hard copy to read themselves! Companies have also been known to simply place safety information on the notice boards! This is not how critical information about the safety of people can or should be conveyed.

Again, companies need to consider whether the time spent each day/week/month/year is achieving the necessary safety objective. The content and its delivery can't merely be a tick-box exercise to meet certain legal requirements or certifications! Companies need to consider alternatives. For example, perhaps safety engagement sessions, where the focus is on discussing and engaging the audience on various safety topics, rather than a one-way flow of information through a safety talk.

Through such engagement, challenges and/or concerns will surface, together with constructive ideas and potential solutions. These sessions could become platforms for a shared understanding of the issues as well as a shared commitment to possible solutions.

This will, undoubtedly, ensure value-added content, a more effective spend of everyone's time, greater buy-in to the safety requirements and expectations, and could mean the difference between preventing a repeat incident and ultimately improving the company's safety performance ... or not.

### OBSERVE TO UNDERSTAND BEHAVIOUR

Building on the benefits of engagement sessions, leaders also stand to benefit from walking through their respective sites. This presents opportunities to engage with employees (and contractors) on safety matters or simply to observe their safety-related behaviour... and the chances are good that leaders

may be surprised at how little of the safety-related information shared during the induction training has been internalised and implemented.

While disappointing, these walks through site can have important benefits, such as highlighting the real safety issues and how the approach to safety training could and should be adjusted.

To demonstrate: I recently visited two different company operations, both with a large number of contractors on site at the time. One site was conducting a large boiler project, while the other was busy with an annual maintenance shutdown. I spent time on both sites, just observing the tasks being conducted by the respective contractors.

On the project site, a contractor was working on scaffolding only one metre off the ground, which had been fitted with all the safety precautions imaginable. These included handrails, knee rails, a fully enclosed platform, and the contractor had attached his safety harness while conducting the work.

By contrast, on the second site contractors were dismantling equipment, with the resultant unprotected drop of more than two metres requiring the use of fall-arrest equipment when walking or working on the platform.


It was pleasing to observe the team correctly using their double-lanyard fall-arrest equipment when walking on the platform. However, not long after that, two team members descended a permanent flight of stairs from the platform to the ground level while attaching their safety harnesses to the handrail of the stairs (instead of holding the handrail throughout their descent).

They may have done this in response to having noticed the safety team in the area, or it may be what they do every time they descend stairs, but it is another example of how employees/contractors can misunderstand the safety rules and/or use of equipment and why the content and method of safety training is so vital.

### SUMMARY

For companies to achieve a safe working environment requires an approach that looks at safety equipment, plant, processes and procedures and, importantly, also the behaviour and attitude of everyone on site towards safety.

The full impact can, however, only be achieved when companies adopt a pragmatic, relevant and sensible approach to safety, with a firm focus on what really matters – including hiring the right calibre of safety personnel and developing those already employed to the desired level of competence and understanding. There also needs to be a move towards "understanding through learning".

The challenge is to shift the safety approach from a crazy one to a committed one – and to focus on those things that are meaningful, practical and add value. This switch from crazy to committed could mean the difference between getting our people home safely every day, preventing a repeat incident and ultimately improving the company's safety performance ... or not. 



**Brian Darlington** is the group head of safety and health for the Mondi Group, based in Vienna, Austria. He has filled the role since 2012 and is responsible for safety and health in more than 30 countries. Brian started working at Iscor before joining Mondi in 1987, working in Gauteng. In 2000 he transferred to the Kraft Division in Richards Bay. During 2005, Brian transferred to Europe, taking up the position of business unit SHE manager, responsible for SHE in paper mills in Austria, Hungary, Israel, Slovakia, Poland, South Africa and Russia, as well as forests operations in South Africa and Russia.



# I'D LIKE TO TEACH THE WORLD...

**How can we implement more effective learning and continuing professional development (CPD) strategies to develop better leaders, or a more effective and reliable workforce? These are questions for which ANDREW SHARMAN and DARREN SUTTON are trying to find answers**

**W**e all know the words of the song: "I'd like to teach the world to sing..." Some of you might even remember the world-famous brand that used it in its advertising campaigns back in the 70s. Yes, learning can be that simple and memorable sometimes. If we could teach the world to be safe, or teach leaders to influence behaviours better, now that would be something worth singing about!

When was the last time that you really scheduled some time to learn something? Either a new skill or a new language or, perhaps, to prepare for an exam or to study a new concept. This is something that we at RMS Switzerland discuss often – then we try to think how these things could be applied to safety.

How could we make learning more impactful; how could we create a learning environment that would ensure people think, act and feel differently? Why is it that some training tends to stick in people's minds longer than others?

How we learn is a fascinating area of psychology and performance with many models and theories that occasionally seem to be contradictory. Some have even been totally debunked!

If you're still planning your classroom sessions around meeting all of the learners' different learning styles [Fleming's VARK model] then please stop – modern neuroscience has suggested that this is not as important as we thought it was

back in the 1970s and 80s. There are much more important things for us to consider when developing meaningful and sustainable learning experiences.

So, let's explore what works best. How can we develop training that will actually change the way our learners think, act and perform? How can we implement more effective learning and CPD strategies to develop better leaders or more a more effective and reliable workforce? And what do we need to know for safety, health and well-being training initiatives?

Generally, at the C-Suite and C-1 level of multi-nationals we see two very obviously different pathways of learning to prepare people for these roles. Some take the traditional route – they were excellent conventional learners who always achieved high grades, went to the world's best universities and had a high level of technical knowledge. These are our Elon Musk, Bill Gates and Larry Page types. Then we have those who take a more experiential journey to the top. These are the more disruptive and usually visionary types such as Richard Branson, Craig Venter and Steve Jobs.

## LIKE WATERING THE GARDEN

Have you ever crammed information for an exam? Or left your preparation to teach a new subject to the very last minute and had to stay up all night to make sure that you knew all that you needed to know? Well we wouldn't water a garden like that –



several weeks' or months' worth of water in just one day – it would create an awful mess!

Neuroscience suggests that learning works in much the same way. It's better to do a little bit every day, in bite-sized chunks. This gives our brains time to soak up each nugget of information. To reflect and consider how what we've learned could be applied "in our world" or context.

Following extensive research in many different areas of learning – including critical thinking, cognitive understanding, physical practice and psychomotor skills – Benedict Carey makes a compelling argument in his best-selling book, *How We Learn*. Watering our brain regularly with information works much better than saturating it in heavy loads.

### NO PAIN NO GAIN?

Let's make our learning easy for people, right? Well actually no! The evidence suggests that learning becomes much more

### GO TELL SOMEONE

Another great way to ensure that learning sticks better is to teach your new knowledge to someone else. Imagine teaching it to a five year old! You'd have to break things down into simple language and ensure that they are properly understood. Many organisations miss this crucial step in cementing the learning experience. Challenge people to deliver short presentations on what they've learned. Ask them what they enjoyed most, what intrigued them and what will they be telling others about what they've learned.

### FIND LEARNING TIRING – GO TAKE A NAP

The research in this area is significant. Tough learning can be tiring – exhausting even – and that's good; that's exactly what we want! Now go and sleep, or take a quick nap! This will allow your brain to really soak up the new learning, with both deep understanding and cognitive recall improving dramatically.

This is known as the Zeigarnick Effect. If you leave something unfinished and then take a break or a rest, the sub-conscious fills in the gaps for you. Zeigarnick proved this in several ways, including how waiters or bartenders can remember orders much more effectively. If they take the order and payment for the order at the same time, the brain sees this as a completed transaction and it doesn't remember the order too well. If the waiter doesn't receive payment when taking the order, the transaction remains incomplete – and that actually helps the waiter remember the order!

### FIND YOUR WHY – SELF DETERMINATION THEORY

If we really want our learners to be engaged there are three important factors that we must consider. Whichever learning methods or processes, trainers or courses

to which we might expose people, our interventions can only act as a lens or a prism to facilitate each individual's line of thought to reaching a conclusion. People will immediately start to work out what's in it for them, or how they might be able to apply the learning to their context. They need a compelling reason why?

I would imagine that for most of us who ever questioned why we needed to learn calculus in high school, the answer was something like "this will be absolutely vital in your future career". For 99 percent of us, that is absolutely not true. What's more, we suspected at the time that it was not true. Then, we left high school, went to university or college, had successful careers and had this suspicion confirmed.

This scenario is probably familiar to many people and begins to illustrate that, without a strong rationale behind why we are learning something, it becomes much more difficult to actively engage people.

Therefore, before we even mention training opportunities to our staff, we need to create the vision about why they even need the training. To do that is as simple as leveraging the organisational culture that should already be present in any successful company. We need to communicate, specifically, how this training will benefit everyone. If people cannot

efficient and long-lasting if we make it tough for ourselves. Have you noticed those people who write diligent notes on training programmes? Those who very neatly highlight key information with fancy, fluorescent marker pens? They go back and re-read all that important information to help them to remember. Well, that's not the best way to actually retain or better understand any kind of information – it makes it too easy!

It's much better to read a chapter or listen to a lecture or podcast then, rather than highlighting or tagging key information, close the book or pause the podcast. Look at the questions at the end of the book or try to recall what you've just learned. Make it hard for yourself, then go back and check if you were right.

This is a much more effective strategy to learn, even if you were wrong at first you now know that and you're more likely to remember the information in the future. It's like building new muscle – if the exercise is too easy, then we don't "rip" the muscle and it doesn't grow. Our brains work in a similar fashion.

Carey calls this Desirable Difficulties and it's much better for learning than making learning smooth or fluent. By making things tough and trying hard to retrieve the information from our minds creates a more powerful cognitive connection and the learning sticks.



identify the problem that training solves, they won't actively participate.

Next, it's good that we give people a choice in how they might complete the learning. Autonomy is a critical part of self-determination theory. Let's give people an opportunity to choose how they might consume their learning. Will it be on a live, face-to-face programme? Will it be by self-directed study or, perhaps, some sort of online e-Learning option?

The human mind is designed to remember information it believes important innately; if we want more we must capture it. Research suggests as much as 40 percent of our learning is forgotten in the first 20 minutes and, in six days, we may forget as much as 77 percent. So, what does this mean for your organisation?

In short, the training you paid for last week may only worth about 23 percent of its original value. A wise investor would not invest in anything if the return was this low. Organisations rely on training to develop people, grow and meet standards – and this is a reality that will not change. However, how can you ensure that an investment made in training is sound?

#### KEY STAKEHOLDERS FOR SUCCESS

First, the individuals undertaking training must be given an opportunity to make the most of any training they attend, setting aside time to sort through the information, taking what is relevant and leaving what is not.

Reflection is key to retaining knowledge; it is a flexible, personalised way of thinking about what was important. Ask yourself what was a surprise about the training, one thing you learned, what will you start to do differently from tomorrow as a direct result of this training and one thing that was a reaffirmation of previous knowledge. Time is a valuable currency. Instead of spending a few days on a course and losing the knowledge, take responsibility and learn for yourself.

The way organisations invest in employees impacts their motivation, quality of work, and, yes, the bottom line. Is it more important to have employees who have been trained, or have employees who actually use their training?

These are questions that need to be asked at every level of leadership. If you want to create greater retention, consider running further mini-workshops internally where

## SPECIAL OFFER


We believe that online learning can have a longer lasting and more significant impact on people as it drip feeds information in a way that's accessible to them. It also incorporates many of the key principles of effective modern learning that have been outlined above.

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trained employees present and teach what they learned during the course.

The final stakeholders are trainers and facilitators themselves. External trainers have unique perspectives and insights, and invest in organisations in different ways than internal staff. Trainers may not have an opportunity to create lasting change in a hands-on manner, but they can create programmes that provide simple tools to use on a daily basis. If you want training that creates lasting change, challenge facilitators by asking: What are the practical learning outcomes of this training?

Licensed Train the Train programmes are a great way of spreading deeper learning throughout your organisation quickly and effectively. Facilitators should create lasting impact by giving simple practical takeaways from training and supervisors should have meaningful conversations with attendees following any training.

Ask the learners what they learned, how are they thinking or feeling differently and what specifically will they commit to doing differently. Getting the most out of learning opportunities should always be a priority. 



Professor **Andrew Sharman** (left) is Chief Executive and **Darren Sutton** is Senior Partner at RMS, consultants on leadership and cultural excellence to a wide range of blue-chip corporates and non-government organisations globally. Find out more at [www.RMSswitzerland.com](http://www.RMSswitzerland.com). RMS's IOSH-approved and certified Behavioural Safety Leadership online learning programme takes a mindful approach to developing safety leadership and provides a low-cost, practical and easy-access route to building a robust safety culture in an organisation. E-mail us at: [team@RMSswitzerland.com](mailto:team@RMSswitzerland.com) and mention this article to find out more and receive a free gift and special offer when you begin your online programme.

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## DON'T TELL ME WHAT TO DO

**Like sports coaches, wise managers empower their employees to make necessary decisions within their roles and responsibilities – and the rules of the game offer the necessary controls**

In the build-up to the Rugby World Cup, it has been noteworthy how much attention the coaches have received. They play an integral role in the success of the team; even though they never run onto the field, never make a gruelling tackle, push with all their might in a scrum, or sprint with every last breath to score a spectacular try.

It isn't their role to play the game. Their focus is on preparing the players for success and then to step aside and allow the players to win the game. I have seen coaches do some crazy things, but I have never seen one of them run onto the field and steal the ball in an attempt to score a try, yet, I see this all the time in the workplace. Unfortunately, like many of you, I have experienced this first-hand.

I will never forget the time that I oversaw a project with my team. We spent hours planning the rollout. I was excited about what we intended to do. This positive energy quickly turned sour. I became immensely frustrated and outright annoyed when the CEO made a call concerning the project without running it past me.

Without knowing what we had organised, he gave an instruction to one of my team members that undermined all the work we had done. Many of his directives were poor, because he didn't have all the details of what we had organised. I was livid because the time and effort we had put in was for nought. If he had questions or ideas, why didn't he run them past me?

Furthermore, it created confusion. My team no longer knew who to report to and which path to follow. Obviously, the CEO's instructions trumped any decisions I had made. I felt he didn't respect my position and subverted my authority.

I couldn't help giggling, a few weeks later, when he complained that everyone would run to him instead of taking ownership of the projects assigned to them. He became irritated that he was doing everyone's jobs and had to make all the decisions.

One of the reasons managers are unwilling to delegate and empower their teams is because they are concerned they will mess up. If we can go back to the coaching analogy, no coach sends an ill-prepared or injured player onto the field. While it isn't the coach's role to play the game, it is his or her responsibility to train and prepare players to perform at their best.

Likewise, it is irresponsible for managers to allow workers to do work for which they aren't adequately trained. Hersey and Blanchard's Situational Leadership Model is a helpful tool when it comes to managing this dynamic.

From a brain perspective, neuroscience is highlighting that people need a sense of autonomy, because it allows us to be in charge of our choices. Among a multitude of studies, Dr Rudolf, from the Institute of Psychology, confirmed that humans are fundamentally hardwired to resist being controlled.



How is this connected to safety? Professor Maier, from the German Neuroscience Centre, explains that when someone's freedom to make decisions is taken away, it will evoke a threat response in their brain. In order to keep us alive, we react to any perceived dangers in less than a fifth of a second. This is usually in either a fight or flight response.

According to Professor Arnsten, from the Yale School of Medicine, "The loss of prefrontal function occurs when we feel out of control." Any perception of autonomy being

something then, all of a sudden, they want it.

This is epitomised in teenagers' rebellion to authority. This has even been seen where warning labels have had the opposite effect. It is possible to overregulate safety in a way that it results in a higher number of non-conformances. How many of our current rules, policies and procedures have been put in place land up impede our drive for zero harm?

Now what? Obviously, we cannot allow people to run around doing whatever they want. In a sports team, each



compromised, such as when we are micromanaged, will trigger such a threat response.

The moment we default to our fight or flight mode, we start pumping adrenalin and cortisol into our bloodstream. Dr Aiken elucidates that physiologically the blood flow to our neocortex is restricted.

This is the analytical, rational thinking, problem-solving part of the brain. In the times we most need our faculties to be firing on all cylinders, the blood is directed to the limbic brain. In this state, our capacity to think clearly and make sound decisions is literally derailed. This can have a serious impact on our ability to work safely.

In addition to interfering with our ability to think in a way to re-establish our need for choice, we will often have the urge to counteract instructions. Tell someone they cannot have

player has a role to fulfil and needs to play according to the rules of the game. If a team member breaks the rules, he or she can be sent off the field. And if anyone fails to perform, the bench is where you'll find them.

Managers don't need to fear empowerment. The rules of the game bring in the necessary controls. Typically, people don't mind authority or rules; they just don't appreciate being controlled.

Like the sports coach, wise managers empower their employees to make necessary decisions within their roles and responsibilities. Work expectations are clear and frequently monitored. The moment someone's performance drops the manager calls them aside to discuss an improvement plan. This way, managers can still get what they want without undercutting people's need for choice. <sup>SM</sup>



**Dr Brett Solomon** is the CEO of The Kinetic Leadership Institute and is a recognised leader in combining neuroscience, change management and leadership theory to drive cultural transformation processes. Brett specialises in neuroleadership, especially when it comes to an understanding of what motivates human behaviour and how to influence it. He has been involved in numerous culture change and leadership development initiatives throughout Africa, Australia, Canada, Saudi Arabia and the United States.



## THE ILLEGALITY PRINCIPLE AND CLAIMS FOR DAMAGES

**ALBERT MUSHAI and ROBERT VIVIAN argue that without a specific clause in an insurance contract that excludes liability of the insurer for claims under the illegality principle, chances are insurers are repudiating claims for which they are liable**

**W**hen one person commits a wrongful act against another causing patrimonial or other quantifiable loss, the law allows the innocent party to sue for damages. This position is universal.

However, it is also true that in order for a person to approach the courts for a remedy, such a person can only do so with "clean hands". In other words, a person cannot approach a court for redress if that person is also guilty of illegal conduct.

This principle finds expression in the Latin maxim *ex turpi causa non oritur action*, which simply means "no cause of action arises from a base cause." The application of this principle is clear from this simple hypothetical scenario: A and B decide to commit a robbery at a nearby convenient store. They agree to share the proceeds of the robbery equally.

The robbery nets them R5 000. A disappears with the entire amount without giving B his share and all attempts to force A to hand over B's share of the loot are unsuccessful. Can B approach the courts for redress? The answer is clearly No because B's own hands are dirty and the illegality principle applies.

The justification for applying the illegality principle in this and other similar cases is that it is against public policy for the law and indeed the courts to reward illegal conduct.

On paper, the illegality principle looks simple and straightforward. However, in practice its application is rather complicated. From the above hypothetical illustration, it is logical to think that whenever a person suffers loss at the hands of another in circumstances where both parties are complicit in an illegal act, no damages are recoverable.

The principle extends to other spheres like insurance. For example, does it mean that if a person insures their vehicle against loss or damage and they drive the vehicle in question negligently, they are not entitled to recovery under the policy?

This question gets even more complicated where the negligent driving that causes the accident leads to criminal prosecution. Can the insurer rely on the negligence of the insured to deny liability to pay the claim?

Most people, especially insurance practitioners, would be inclined to answer this question in the affirmative. However, that view is not correct certainly in the case of insurance because one of the main risks insurers agree to cover in most contracts of insurance, such as motor and liability, is negligence.

Therefore, the general proposition is that an insurer cannot agree to provide coverage against negligence and later on seek to rely on the illegality principle to avoid paying for the very risk they agreed to cover.

A recent case that came before the Court of Appeal in the



United Kingdom [UK] further confirms the complexities of the illegality principle and its application. The case in question is *Stoffel & Company versus Grondona* [2018] EWCA Civ. 2031.

Ms Grondona entered into a contract with one Mr Mitchell in terms of which she agreed to buy and take mortgage loans in her own name. The mortgage loans were over four properties owned by Mitchell.

Furthermore, the agreement stated that Mitchell would make the mortgage payments under Grondona's loans and maintain the properties. In return, Mitchell agreed to pay Grondona 50 percent of the net profit when the properties were sold. Therefore, in return for borrowing money in her own name on Mitchell's behalf, Grondona stood to pocket 50 percent of the net profit on each property when sold.

The whole agreement was a masked fraudulent scheme to the extent that Mitchell was using Grondona's good credit rating to borrow money in circumstances where he did not qualify for the loans, and the bank would not have lent him the money.

In that sense, Grondona and Mitchell were complicit in bank fraud. In the process of formalising this agreement, the lawyers who acted for Grondona failed to file land registry documents necessary to transfer the property from Mitchell to her. The lawyers actually admitted negligence and breach of duty in that regard.

Although there were other ancillary issues, the main one was whether Grondona deserved damages arising from the negligence of the lawyers in failing to file land registry documents. The lawyers argued that she was not entitled to any damages, since she had connived with Mitchell to commit fraud.

The trial court agreed that Grondona and Mitchell committed mortgage fraud to deceive the bank. It was the court's view that the mortgage application was a sham to facilitate a fraudulent process where Grondona availed her good credit record to Mitchell in order to enable him to access finance that he could not have access to otherwise.

At the same time, it was never the intention of the parties that Grondona would acquire ownership of the mortgaged properties. However, the court ruled that the foregoing did not necessarily mean that her claim against the lawyers became invalid because of the illegality or *ex turpi causa* defence.

Instead, the court ruled that the test to determine whether the illegality defence applied is whether Grondona relied on the illegality to formulate her claim. The court found that this was not the case. Instead she relied on the lawyers' negligence. Accordingly, the court dismissed the illegality defence as inapplicable.

The lawyers appealed the decision to the Court of Appeal.

In the appeal, the issue was whether the participation by Grondona in the fraudulent and illegal mortgage fraud aimed at obtaining finance for Mitchell prevented her from suing the lawyers for negligently failing to file the land registry documents with the relevant authorities.

As a preliminary point, the Court of Appeal disagreed with the trial court on the issue that the mortgage agreement was a sham. On the contrary, the court said that even though the mortgage application was fraudulent, that, in itself, did not make it a sham transaction.

According to the court, for a transaction to be a sham, the parties must have a common intention that the transaction does not create the legal rights and obligations that the documents purport to depict. The court found that this was not the case in the agreement between Grondona and Mitchell.


The court further pointed out that the test to determine the applicability of the illegality principle that the trial court relied on needed refinement. Instead, the Court of Appeal reasoned that when assessing whether a claim for damages tainted by illegal conduct is contrary to public policy, it is necessary to evaluate three factors.

These are: [1] the main purpose of the prohibition violated by the parties, [2] other relevant public policies that could be undermined by the denial of the claim, and [3] proportionality between the transgression and denial of the claim.

As regards [1], the court pointed out that there was no public interest in allowing negligent lawyers (or anyone else for that matter) who are not party to, or know nothing about the illegality to avoid their professional obligations just because they happen to discover that the clients they represented made misrepresentations to the bank.

On [2] the court stated that there was a public interest in ensuring that members of the public are able to claim damages for negligence or breach of contract by professionals such as lawyers. Finally, on [3] the court pointed out that it would be disproportionate to deny Grondona's claim for illegal conduct that was not relevant to the retainer she had with her lawyers.

The illegality defence is a very tempting device to fall back on when facing a claim. This is particularly so in transactions such as insurance. There are many cases where insurers attempt to avoid claims citing illegality. More often than not they succeed because the insured simply accepts that because of his/her violation of the law, the claim falls away.

The reality is far from certain [as the above case illustrates] and not least because insurance is a contract. Therefore, without a specific clause in the insurance contract excluding liability of the insurer for claims under the illegality principle, chances are insurers are repudiating claims that they are in fact liable to pay. 



Legally Speaking is a regular column by **Professor Robert W Vivian** and **Albert Mushai**, both in the school of Economics and Business Sciences, University of the Witwatersrand. Robert W Vivian is a leading authority on insurance and risk management. He has written a number of books on South Africa's business history. Albert Mushai holds a master's degree from the City University, London, and was the head of the insurance department at the National University of Science and Technology in Zimbabwe before joining Wits University as a lecturer in insurance.

# WHY ARE SOCIAL-RISK DISCUSSIONS SO HARD?

The risk landscape is ever changing and there will never be a dull moment for risk practitioners



**M**any organisations are striving to uplift the communities in which they operate through corporate social responsibility programmes. South Africa recently experienced unrest in various parts of the country. The rationale on the ground is that most of this unrest was triggered by social challenges faced by the communities in question. Just like a troublesome child, social risks are noticeable and their impact is felt beyond borders.

From a business point of view, why is it so hard to discuss social risks in the corridors? Isn't it time we reconsidered what is in our risk-management strategies and include social risks if we have not yet done so? Why should we be interested in overhauling these strategies? It is because socio-economic issues are likely to disrupt many organisations' strategic and operational plans.

## WHAT IS AT STAKE?

The 8th edition of the *Allianz Risk Barometer 2019* reports that 37 percent of the responses cited the "impact of business interruption (including supply chain disruption)" as the major

risk for companies for the seventh year in a row".

Although this could also be triggered by geopolitical tensions, some of the most frequent social issues relate to lack of service delivery. The events that lead to some protests as a result have without doubt interrupted some business operations.

According to the 5th edition of the Institute of Risk Management South Africa (IRMSA) Risk Report's *South African Risks 2019*, the input from the subject matter experts in the report highlighted business interruption as one of the risks that "could remain unchanged over the next 18-month to five-year window". The picture might be gloomy, but it is also an opportunity in the area of managing risks.

## DEVELOP SOCIAL-RISK LITERACY

When we manage risks, we tend to focus on the traditional ones and shy away from discussing social risks. It is important to understand social risks and what triggers them. Organisations tend to underestimate the impact of these risks to their businesses and their stakeholders. The consequences are evident in the lack of preparedness when business interruptions





do occur. One of the common experiences is the service-delivery protests that sometimes turn violent – even when early warning signals are present.

#### DOES LOCATION MATTER?

Do you remember the 4Ps of marketing [Product, Place, Price and Promotion]? The location of the business matters. This is where the product is sold or services are provided to the customer. Thus when conducting a social risk assessment, one should reflect on scenarios that could impact on how the supply chain, customers, employees might be affected by protest action.

We ought to remember that some scenarios might cause a total

shutdown in the affected locations. The International Organisation for Standardisation (ISO) 31000:2018 Risk Management Guideline offers some advice. In clause 5.4.1 – Understanding the organisation and its context, it states that “when designing the framework for managing risk, the organisation should examine and understand its external and internal context. Examining the organisation’s external context may include, but is not limited to: the social, cultural, political, legal, regulatory, financial, technological, economic and environmental factors, whether international, national, regional or local”.

A recommended reading by Bekefi, Tamara, Beth Jenkins, and Beth Kytte. 2006: Social Risk as Strategic Risk: Corporate Social Responsibility Initiative, Working Paper No. 30 Cambridge, MA: John F Kennedy School of Government, Harvard University, states that “social risk is characterised by four components in combination: an issue, a stakeholder or group of stakeholders, a negative perception about the company, and the means to do damage.”

The authors pose several questions including:

- Who (for example, business unit or departmental head) has the responsibility for tracking, raising and/or managing social issues? Is the process explicit or ad hoc?
- What organisational or cultural barriers, if any, does your company face in raising or managing social issues at the strategic level? For example, are social issues treated “differently” or “separately” from other business risks? Are there incentives for longer-term thinking?


#### ACCEPT THAT SOCIAL RISKS EXIST, BUT GET ON YOUR MARKS

The likelihood of business disruption as a result of social risks might be hard to predict as we do not live in a risk-free world! For organisations that are tapping into the African Continental Free Trade Agreement, they have to accept that social risks will follow.

We saw attacks on South African businesses such as Shoprite and MTN in Nigeria as a retaliation of the xenophobic attacks in South Africa, which reminds us how social risks can escalate into geopolitical issues.

The good news is that risk appetite is still high for these organisations (and many others) to trade in African markets, although risk tolerance will always be debateable.

Get on your marks, revise or develop your risk-management strategy and think of those social risks that could derail your strategy. Then conduct a business impact analysis to evaluate the possible impact to your key business operations and activities. The important point here is to ensure that you have a recovery strategy.

John A. Shedd once said: “A ship is safe in harbour, but that’s not what ships are for.” Therefore, we should avoid, reduce, transfer or accept that social risks exist. This will enable us to discuss these risks and take on questions like those found on the *BBC World News’s* HARDtalk programme! 



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# MAINTAINING PROFESSIONAL COMPETENCE

**NEELS NORTJÉ, chief executive officer of the South African Institute of Occupational Safety and Health (SaioSh), explains why it is important to pursue continuing professional development in the health and safety field**

**C**ontinuing professional development (CPD) refers to the process of tracking and documenting the skills, knowledge and experience that a professionally registered person gains beyond initial training – whether formally or informally – while practising. It's a record of what a professional person experiences, learns and then applies in his or her work.

The South African Qualifications Authority (SAQA) is the custodian of professional bodies and professional designations. In order for a professional designation to be registered on the National Qualifications Framework (NQF), it must:

- Be submitted to SAQA by a recognised professional body in accordance with an application process determined by the organisation;
- Be conferred, developed or revoked in terms of the rules, legislation and/or international conventions applicable to the recognised professional body;
- Be monitored in terms of the rules, legislation and/or international conventions applicable to the recognised professional body;
- Be part of a progression pathway which may include an occupational pathway;
- Be linked to a validated database of the names of individuals who have been conferred with a professional designation;
- Include, as an initial requirement, at least one underlying qualification, which may include an occupational qualification;
- In the case of an individual's qualification having been obtained at an institution not registered in South Africa, the individual applying to a professional body for a professional designation must ensure that the qualification has been evaluated by SAQA and found to be comparable to the South African underlying qualification;
- Include as general requirements, experiential learning, recognition of prior learning and/or practical experience;
- Include as retention requirements CPD and adherence to a code of professional ethics/conduct.

A professionally registered person is required to subscribe to

CPD in order to function effectively and to maintain his or her professional registration status, and has the responsibility to keep abreast of developments and knowledge in their particular areas of expertise.

Registered health and safety professionals must strive to maintain professional competence, and keep abreast of emerging issues, best practices and world trends in the field of occupational health and safety (OHS).

They must aim to contribute to the development of the OHS profession through the sharing of skills, ideas and participation in networking to promote and enhance the competence of the profession. CPD activities must occur in three areas – maintaining core skills, new technical/speciality skills and transferable skills.

SaioSh is recognised by SAQA as the professional body that registers OHS practitioners in South Africa in terms of the NQF Act – Act 67 of 2008. SaioSh is committed to the upgrading of professional skills of its members by keeping them updated and informed on latest developments in the field of OHS.

On a regular basis, SaioSh holds provincial seminars and workshops for its members that encompass a wide range of OHS topics. Quality speakers are secured to facilitate the workshops and the topics are carefully selected to ensure that members are kept up to date with latest developments in the OHS field.

SaioSh members attend for free and bookings are done via easy online registration. CPD points are instantly uploaded to members' online profiles when marked off in attendance at the workshops.

The workshops are also verified by the South African Council for Project and Construction Management Professions (SACPCMP) with CPD hours.

SaioSh also offers other platforms for its members to attain CPD points – free webinars and a 20-module free OHS e-learning programme.

To view the SaioSh CPD policy visit [www.saioSh.co.za](http://www.saioSh.co.za) 



**Neels Nortjé** is a founder and the CEO of the South African Institute of Occupational Safety and Health (SaioSh). He has been practicing occupational health and safety for more than 30 years. He started his working career with Eskom in 1981, where he qualified as an architectural draughtsman, and in 1986 changed his focus to safety risk management and qualified with Eskom as an occupational health and safety risk management officer. He holds a N6 Mechanical and Electrical Engineering qualification as well as a National Diploma in Safety Management. He was appointed by the minister of labour to serve on the Minister's Advisory Council for Occupational Health and Safety (ACOHS). He is a Chartered Member of SaioSh (CMSaioSh) and a Chartered Member of IOSH (CMIOSH).





South African Institute of  
Occupational Safety and Health



# OHS Professional Registration



To find out how you can get **Professionally Registered** visit:

**[www.saioosh.co.za](http://www.saioosh.co.za)**

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# PURSUING A HIGHER PURPOSE

**The first black African female actuary NDIVHUWO MANYONGA finds herself pursuing a higher purpose as CEO of FEM. She shares some insights into her journey**

**N**divhuwo Manyonga, CEO of the Federated Employer's Mutual (FEM) Assurance Company, became a true South African pioneer when she obtained her fellowship in 2005 as the first black African female actuary. The first step towards her destiny was attaining a Bachelor of Business Science Degree [Actuarial Science] and a Post Graduate Diploma [Actuarial Science] from the University of Cape-Town [UCT].

After a series of 16 gruelling exams, she was finally inducted as a fellow of the Actuarial Society of South Africa (ASSA) in a qualification that is known for its high attrition rate. Little did the young Venda ingénue know that she would make history in a male-dominated profession and open the door for other black African women.

In the footsteps of women like Manyonga, almost 300 women in South Africa are now actuaries and the number of black females among them is growing steadily. Manyonga recalls that she was a 16-year-old matriculant when she ventured into this uncharted territory.

Her main concern was to harness her sterling academic proficiency in choosing a profession that would provide financial freedom for her and her family. Initially, she gravitated towards medicine or chartered accounting. Thanks to her Grade 11 mathematics teacher, Mrs Maganbhai, who identified her aptitude for numbers, Manyonga met her appointment with destiny.

## RELUCTANT PIONEER

Not one to fly the flag of her remarkable achievement,

Manyonga is quick to point out that she only became aware of her pioneer status while writing her final board exams. When asked if she is comfortable with the label of "pioneer", she replies: "How do I embrace something that was not a deliberate decision on my side?"

"It was not an objective. In fact, even when I qualified, it was not the limelight I was seeking. I am an introvert and did not want the publicity. Over time I saw the interest around me in a positive light. I realised that my journey could hopefully be a platform to influence others. Sometimes you underestimate the impact you have just by being you," Manyonga says.

Along with numerous qualifications, Manyonga has also garnered awards from the Actuarial Women's Committee [Woman Pioneer in the Actuarial Profession 2012] and the Association for South African Black Actuarial Professionals [Achiever's Award 2011] among others.

## AN IMPECCABLE CAREER TRAJECTORY

Manyonga's career trajectory is just as impressive as her qualifications. Building upon her academic foundation, Manyonga assumed her first professional tenure in 2002 as an actuarial assistant with her academic sponsor for her last year at UCT, Old Mutual. From then onward she would be catapulted into various actuarial science roles.

Over the past decade and a half Manyonga has cultivated impeccable experience as a risk consultant, consulting actuary, deputy CEO, executive head of employee benefits and CEO at companies such as Old Mutual, Aon South Africa and now FEM.

In addition to her corporate roles, Manyonga developed



her entrepreneurial skills and diverse work experience in actuarial concepts, employee benefits, retirement funding, and investment strategies. She wanted to add value to organisations through consulting and board participation as a non-executive director.

Manyonga enhanced her career footprint, as a self-employed independent actuary in the financial services industry. Key clients at this stage were the Presidential Working Group on Women and Old Mutual South Africa on their joint Financial Solutions for Women initiative, which is aimed at economically empowering South African women through the provision of appropriate financial solutions.

**In the footsteps of women like Manyonga, almost 300 women in South Africa are now actuaries and the number of black females among them is growing steadily.**



#### A DIFFERENT ENVIRONMENT

Manyonga was headhunted by FEM in 2017 – a position she holds to date. From a landscape of international, multinational, listed companies, shareholders and board members situated in different countries, Manyonga is now enjoying a less complex and more centralised decision-making structure at FEM.

“Coming from mainly profit-driven industries and joining an entity that is a mutual, I quickly saw that I am in a very different environment with a different impetus,” Manyonga notes. “Rather than profit, efficiency of delivery is the driver at FEM.

“From an underwriting perspective, the mutual still must break even and remain conservatively capitalised, but the shareholders in this instance are the construction industry employers who are our policyholders. Income generated from employer premiums is ploughed back into a compensation structure for their injured employees and rebates are paid out to policyholders for exemplary health and safety practices, as evidenced by a lower claims experience,” she adds.

#### A HIGHER PURPOSE

In addition, Manyonga has fervently adopted FEM's motto of passion and compassion for clients, particularly the injured employee and the beneficiaries of their compensation outlays. She says: “The construction industry is one of the largest employers in the economy, it is also a high-risk industry. There is a high number of low-income earners who are also likely to be bread-winners with multiple dependents.


“This means that when an accident occurs in the line of duty, which results in injury, all effort needs to be made to pay the claim speedily, so that the worker can get the necessary medical attention, be rehabilitated and return to their much-needed job. In the worst-case scenario, where a death occurs, we need to ensure that the beneficiaries receive their compensation timeously for continuity of income,” Manyonga explains.

She is careful to note that even though she is steering the ship at FEM, she is only one of a team. Through FEM, Manyonga finds that she is serving a social purpose, entrenched in the South African Constitution, with respect to facilitating the basic rights to social security for employees and their dependents, when they are unable to support themselves due to a work-related accident.

When considering the 8 000-odd reported accidents per annum across FEM's policyholders, she is aware of the people whose lives are affected. “Most of these workers have no alternative career options, moreover when they are injured,” Manyonga elaborates. “It's imperative for FEM to fund medical services and provide compensation as soon as possible for the injured employees can't afford a gap in ability to earn income.”

Manyonga is often disheartened that FEM can only step in when health and safety has failed, when someone has become vulnerable, or in the tragic eventuality of death. “It's about empowering employees to access benefits, but also about engaging with employers who are not compliant,” she says.

“If need be, we report those employers to the Department of Labour for underreporting accidents, where they will suffer penalties for non-compliance,” Manyonga adds. Therefore, effective compensation is ensured by both employers and employees.

Founded in 1936, FEM provides specialist insurance cover to construction companies and their employees against injuries or illnesses contracted in the workplace. The company is mindful of the fact that when employees are injured, they need to have the assurance that their benefits and medical bills are paid out speedily. For more information about FEM, visit [www.fem.co.za](http://www.fem.co.za) or contact 011 359 4300. 

# UNDERSTANDING OHS AND YOUR LEGAL LIABILITY

**“Do we want to see company executives going to jail in the aftermath of a workplace disaster in which lives are lost?” This question was posed at the 2019 Saioosh Health and Safety Conference. DEBORAH RUDMAN reports**

**A**dvocate Hendrik Terblanche, MD and senior legal consultant at Legricon, provided delegates at the 2019 Saioosh Health and Safety Conference with a crisp analysis of the legal liability of occupational health and safety (OHS) officers and employers.

Citing the jail sentence handed down by a Turkish court in 2018 to key managers after the death of 300 workers at the Soma Mine, Terblanche pointed out that liability of employers has become a highly debated issue.

He drew the distinction between criminal and civil liability – and whether actions fall under common law or legislation, as well as the varying damages provided for by the law.

In the realm of criminal liability, citizens expect the government to maintain law and order, to make and enforce laws and to punish offenders. Terblanche said it should first be determined what the punishment hoped to achieve.

He noted that punishment has three aims: retribution, rehabilitation and deterrence.

Criminal sanctions range from a warning, a suspended sentence or a fine, to community service, house arrest or jail, with a criminal record. The courts take into account the nature and seriousness of the offence, the expectations of society and the personal circumstances of the wrongdoer.

Turning to civil liability, Terblanche said that the objective was to attempt to put the injured party in the position in which they would have been had the harmful event not occurred. The outcome could be an interdict, an order to restore something to its original state, to comply with a contractual obligation, or to pay compensation [damages] to the wronged party.

Although statistics were not confirmed, it was estimated that between 700 and 1 200 people die every year in South Africa in workplace accidents [excluding deaths from occupational diseases].

Terblanche also noted that more individuals die in motor vehicle accidents and from murder, with the total number for 2016 a sobering 450 000 deaths.

The unlawful killing of a human being is regarded as murder or culpable homicide. With the latter, the concept of negligence rather than intent is key.

Terblanche referred to an incident in South Africa where *dolus eventualis* – a form of intent very close to negligence – came into play: in December 2002, a fire at a factory killed 11 workers, who could not escape through the locked emergency doors. Had it gone to court, the premise would have been that if an employer locks emergency escape routes without providing a quick means of unlocking them, the employer foresees the eventuality that people could be killed



Photograph by Natalie Field Photography

**In numerous cases penalties for environmental damage were harsher than for harm caused to people in the workplace.**




in a fire, and reconciles him or herself to that outcome. Pleading guilty to the lesser crime of culpable homicide, the owner and manager were fined and issued with suspended jail sentences.

Several other cases have seen fines and/or suspended prison sentences being imposed on the wrongdoer employer.

Terblanche pointed out that prosecution can take 10 years and longer; and that the penalties do not serve the objectives of criminal liability. Administrative fines offer a quicker process, but are not effective in terms of mine health and safety. He added that they also may not be constitutional.

Under the Mine Health and Safety Act, the most common practice seems to be to issue Section 54 stoppage notices as a form of punishment, rather than as a form of prevention as originally envisaged.

In numerous cases, both locally and abroad, penalties for environmental damage were harsher than for harm caused to people in the workplace.

In conclusion, Terblanche proposed that enforcement should be proactive rather than reactive, and that it could be more useful to prosecute companies rather than individuals [as has been the approach in environmental challenges]. 



# NEW NOSA SERVICE OFFERING ENHANCES BUSINESSES

**To keep up with international business trends, NOSA is embarking on a digitisation journey to become a business enhancer, starting with the acquisition of IsoMetrix. NOSA Group CEO KARL CAMPBELL provides some insights**

**A**s the globe becomes progressively immersed in the technology revolution, the need to heed the constant refrain to “digitise or die” is increasingly imperative. More and more, corporates and learning institutions are compelled to adapt and adjust current models of business to sustain relevance in flux.

Having said that, an indiscriminate effort to “come online”, based on the knee-jerk alarm at being left behind can result in greater damage than doing nothing at all. Ultimately, this becomes a hollow exercise, rendering the company obsolete and redundant.

Most crucial to understanding where an organisation fits in the digital space, is recognising where this technological revolution exists within the more pressing issue of climate change and the worldwide environmental crisis as the latter indubitably sets the parameters for how an institution forecasts its future position and prospects.

Take the example of vehicle manufacturers Volkswagen, Nissan and BMW. They have joined the call to convert the market to electric-powered cars in spite of Eskom’s persistent electricity supply challenges and the prevailing 23-percent import tariff on electric vehicles. This push comes on the heels of heightened global demand for e-solutions that effect concerted change in the existing combustion market.

It is not only in the consumer space where considerable change is being accomplished on a grand scale. Swedish mining equipment maker Epiroc AB aims to electrify all its machine for underground use in mines within five years.

When major conglomerates become the pioneers of

systematic and systemic change within industry, it is a clear sign that what was once a mere suggestion to adjust, is now an overwhelming demand to adapt policy or risk the company’s inevitable expiration date.

It is within this context that NOSA embarks on its digitisation journey. In its current business iteration, NOSA navigates the delicate balance between its continued efforts to provide quality risk-management services and introducing cutting-edge, digital solutions. Without compromising on quality, NOSA is fully committed to redefining its mandate to move into the position of business enhancer by offering managed services within the data driven space.

While still in its infancy, the renewed strategy reimagines the services NOSA takes to the occupational risk-management market. The first step is its recent acquisition of Johannesburg-headquartered IsoMetrix, an environmental, health and safety (EHS) and risk-management software vendor, ranked in the 2019 Verdantix EHS Leaders Quadrant.

NOSA and IsoMetrix will sit as complementary sister businesses. This move reinforces the importance of becoming more customer-centric and moving up the customer value chain. IsoMetrix provides NOSA with the technological platform to achieve this.

The acquisition is just the first of several new services planned for the market. NOSA now has the digital building blocks for two of its strategic initiatives: A market-leading EHS software solution and e-learning.

It is in the early stages of transformation, but NOSA believes that on looking back in the next few years, the value proposition would have shifted significantly. It’s a full revolution. In fact, it’s revolutionary. <sup>SM</sup>



# HEALTH AND SAFETY IN SPACE

**Fifty years after Neil Armstrong and Buzz Aldrin set foot on the moon, setting health and safety standards for space-flight risks remains a challenge**

**R**ecent television programmes celebrating the 50th anniversary of man's lunar landing have aroused interest regarding the ability of astronauts to stay safe and healthy in space. While the broadcasts made the trip appear exciting and at times anxious, the risks involved in getting Apollo 11 and its crew members to the moon were immense.

According to the National Aeronautics and Space Administration (NASA), human space flight inherently involves a high degree of known risks, as well as uncertain and unforeseeable risks. "Risks to astronauts exist during all phases of any space mission, including terrestrial training and vehicle testing, launch, inflight during the mission, and landing," the organisation admits.

So, how does NASA address health and safety risks associated with space flight? According to a media statement, the organisation has developed an extensive research portfolio – managed and implemented through its Human Research Programme, the National Space Biomedical Research Institute and other agencies – designed to examine, prevent and mitigate health and safety risks in space.

The risk-management policy comprises two integrated efforts: risk-informed decision-making and continuous risk-management processes. The processes are used across the organisation and apply to engineering, safety and health standards.

Risks are identified based on historical precedence – lessons learned and empirical data – on possible failures in laboratory and other tests, and in discussions with subject-matter experts. Risks are extensively documented and, if possible, quantified.

When a risk is considered to be unacceptably high, alternative designs and mission scenarios are considered, and the risk assessment continues iteratively. The process is not unique to NASA and represents best practice across a number of industries.

In new or emerging areas of concern about space-related health risks, risk assessment may first be based on expert opinion and then be informed by experience gained in a new environment, or through case reports and lessons learned from





prior space missions – for example, vision impairment has recently been identified as a risk of space flight.

NASA's risk-assessment processes initially use a wide margin of uncertainty that, with continued experience, is generally narrowed. Decisions regarding the design and implementation of a mission are made based on a combination of available evidence and best risk estimates.

According to the statement, NASA makes numerous decisions that balance health and safety risks, technological feasibility and financial costs against mission necessity and the lost opportunity that comes when missions are not undertaken.

The organisation states, in part: "An adequately safe system is not necessarily one that completely precludes all conditions that can lead to undesirable consequences." According to NASA policy, adequately safe systems follow two primary safety principles:

- They meet a minimum threshold level of safety, as determined by analysis, operating experience, or a combination of both;
- They are as safe as reasonably practicable [ASARP].

An assessment of whether a system is ASARP involves weighing its safety performance against the impact of the changes that would need to be done to further improve it.

NASA states: "The system is ASARP if an incremental improvement in safety would require a disproportionate deterioration of system performance in other areas." Moreover, informed decision-making by those affected is an essential component.

Similar to risk assessment for hardware and software, there is a risk-assessment process for human health risks, and concomitant strategies for mitigating the risks. By necessity, these two processes are connected and iterative.

For example, if radiation exposure in a particular mission is considered too high, this drives the design of the vehicle and the mission design. If there is no engineering or mission design solution to mitigate the risk, then other alternatives are considered, such as redesign of the mission, delays in the mission until technology is available, or making exceptions to the standards.

Fairly early in space-flight development, NASA established a Bioastronautics Roadmap as a framework for identifying and assessing the risks to spacecraft crews from health

perspectives, as well as from engineering, technology and system performance aspects.

In the roadmap, "risk" is defined as "the conditional probability of an adverse event from exposure to the space flight environment" and a "risk factor" as a "predisposing condition that contributes to an adverse outcome".

Specific issues regarding risks have been detailed in the roadmap as they pertain to three design reference missions: a one-year tour of duty on the International Space Station, a month-long stay on the lunar surface, and a 30-month mission to Mars. Design reference missions describe the orbit, mission duration, environments and proposed operations.

There may be multiple design reference missions to a single destination, and each is assessed for challenges, benefits and risks. The scenarios provide context for mission design and risk identification and assessment, and include information on potential transit times, communication lag times, microgravity-exposure and radiation-exposure levels, vehicle requirements, and the extent of proposed extra-vehicular activity.

The Bioastronautics Roadmap has since evolved into the Human Research Roadmap, which categorises health risks into five categories – behavioural health and performance; human health countermeasures (which include bone metabolism and physiology, nutrition, immunology, cardiac and pulmonary physiology, and injury); space radiation; space human factors and habitability; and exploration medical capabilities.

For each of the areas, the roadmap provides research reviews and ratings on risk mitigation and control. The ratings system categorises the risks as controlled, acceptable, unacceptable or insufficient data. The state of research on each of the risks is summarised in a set of evidence reports, with each report updated and reviewed on a regular basis.

These research reviews and ratings provide starting points for identifying gaps and research directions for NASA's Human Research Programme, and progress on this research is monitored by NASA's Human System Risk Board.

A number of health risks are known and are mitigated, to the extent feasible, through prevention and intervention strategies, which are continuously evaluated for effectiveness. The seriousness of other likely risks is largely unknown. Still other risks have not yet been anticipated, and will be uncovered only through experience. Thus, 50 years on from the lunar landing, setting health and safety performance standards for a wide array of space flight risks remains a challenge. <sup>SM</sup>





# SA TIGHTENS LANDFILL LAWS



**Waste management companies are urged to get to grips with legislation that outlaws the disposal of liquid waste at landfills**

Experts agree: landfills the world over represent a significant waste-management problem – and the good news is South African legislation has recently been tightened to prohibit the disposal of liquid waste at dump sites.

The new legislation came into effect two months ago, signalling a massive shift in regulations, according to Kate Stubbs, director of business development and marketing at Interwaste. “Over the past several years, regulations have been developed to improve the disposal of waste to landfill, and more importantly, encourage the waste industry to seek alternative and sustainable solutions.

“The new legislation became effective on August 23, when the Department of Environment, Forestry and Fisheries banned all forms of liquid waste, as well as hazardous waste with a calorific value greater than 20 MJ/kg, from landfill disposal.

“With additional waste streams shifting towards this prohibition on an annual basis, it becomes essential that our industry embraces the legislation, while also taking the necessary steps to comply,” she says. “The prohibitions provide opportunities for alternative and more sustainable waste-management solutions, while also creating a more efficient waste economy in South Africa.”

Previous regulations held that hazardous liquid waste with high calorific values – such as refinery waste, chemical processed paint waste, hydrocarbon-contaminated liquids, sludges and chemical solvents – had been progressively banned from landfills as from August, 2017. However, Stubbs says that now all liquid waste has been prohibited, along with reactive wastes, recyclable waste oils, whole waste tyres, lamps and lead-acid batteries.

“To best manage the new regulations, it is central for

waste producers to understand that there is ample room for new innovation in this space, and that there are successful innovations already in practice that are driving legislative compliance,” she says.

She points out that solutions exist for hazardous liquid waste to be repurposed into an alternative fuel source for energy production. Now, she says, there is an opportunity to start looking at resources offered by the additional liquid-waste streams to add value to the country’s economy – reducing dependence of fossil fuels, for instance.

“While many businesses may not have prepared for the new legislative framework, there are already available solutions targeted towards complying with the legislation,” she says. “Interwaste spent much time considering and planning for the impact of the legislation to ensure we were prepared.”

According to Stubbs, the company has developed significant capacity over the years for the treatment, recycling or recovery of qualifying wastes at its licensed facilities at Germiston, which already produces waste-derived fuel for industrial use.

“Waste management is one of the critical elements of sustainable development, primarily because sound management practices contribute to sustainability. Legislation regulating waste management is an important instrument in the control of environmental hazards to health. It also creates a reformative system.

“As government aims towards a circular economy and improving our environmental standards, there will no doubt be further stringent legislation down the line. As such, it is up to waste-management companies to take a proactive approach by seeking relevant investment and technology-development opportunities for alternative waste-disposal solutions – ones that are commercially viable,” she says. 





## Comprehensive turnkey testing solutions for all mining requirements

The Mine Health and Safety Act is clear on the requirements for mines and the tests they are legally obliged to carry out. Furthermore, according to the Mining Charter 2018 (and its implementation guidelines released in December of the same year), any supplier that wishes to do business with the mining industry must hold a BEE status level of 1 or 2 only. This means any supplier that does not hold either of these is considered non-compliant and will not be considered. NOSA Testing recently achieved a Level 2 BEE status.

As we look to develop our service offering, NOSA Testing now offers accredited asbestos and crystalline silica analysis. NOSA Testing is the only laboratory in South Africa to be method accredited to carry out asbestos analysis. Should a laboratory be method accredited for asbestos and crystalline silica analysis, organisations and consultants must use a method accredited facility for their reporting to legally comply with South Africa's regulatory and legislative requirements.

NOSA Testing also commits to a competitive turnaround time (TAT) of 10 working days for the analysis of air, water and environmental samples, from date of sample receipt within the lab, together with full client instructions, at our Midrand, Durban and Cape Town laboratories.

NOSA Testing is method accredited in line with mining requirements, and so perfectly positioned to partner with mines to provide a complete testing service, which extends across the following areas:

Analysis description	Method	TAT
Asbestos fibre counting	HSG 248	48 hours
Asbestos ID	HSG 248	72 hours
Crystalline silica	NIOSH 7602	10 working days
Gravimetric weighing of filters	NIOSH 0500 and 0600	10 working days
Metals full ICP scan	NIOSH 7300	10 working days
Welding fumes ICP scan	NIOSH 7300	10 working days
Trace air OVM badges with analysis	MDHS 88/NIOSH 1500	10 working days
Volatile organic compounds (VOCs) via charcoal tube	NIOSH 1500	10 working days
Inorganic acids, volatile acids (filter included)	NIOSH 7907	10 working days
Water analysis (organic and inorganic)	ISO and EPA methods	10 working days
Legionella analysis	ISO method	10 working days
Listeria analysis	ISO method	10 working days
Trihalomethanes (THM)	ISO and EPA methods	10 working days
Total oxygen carbon (TOC)	ISO and EPA methods	10 working days
Heavy metals (water sample)	ISO and EPA methods	10 working days
Phenols	ISO and EPA methods	10 working days
Full SANS 241 analysis	SANS method	10 working days

All sample media is inclusive of analysis cost. For more information on NOSA Testing's services, please contact:

**Keshav Beachen (National Sales Manager)**

**Email:** [keshav.beachen@nosa.co.za](mailto:keshav.beachen@nosa.co.za)

**Tel:** 071 442 9418

## DRUG-A-LYSERS TO CURB CANNABIS USE

**With the decriminalisation of cannabis in South Africa, traditional drug policies and testing for marijuana are insufficient. MARISKA MORRIS investigates how companies can effectively prevent cannabis use in the workplace**

**T**he Constitutional Court ruling to decriminalise the use of cannabis in South Africa has made it legal for a private individual to consume marijuana in a private place. This brings with it a host of challenges, as traditional policies and methods of testing for cannabis become outdated and ineffective.

"When cannabis was an illegal substance, a urine test was sufficient because the use of cannabis was a criminal offence," explains Greg Kew, occupational medicine specialist. "After the Constitutional Court ruling, urine testing is now no longer enough as it can identify only use of cannabis, which is no longer a criminal offence.

"The results of a urine test can't be used as a sanction for being under the influence without additional evidence that indicates the person was acting in a similar way to someone who is under the influence." However, this doesn't mean that the use of cannabis is acceptable in the workplace. Kew notes that the duty of employers to protect employees remains the same.

He says: "The duty of the employer is unaffected. In terms of the laws that protect the safety of employees, the employer is still required to prevent an incident from taking place as a consequence of someone being under the influence of an

intoxicating substance, regardless of whether the intoxicating substance is legal or illegal.

"The use of cannabis might be legal, but if it is an intoxicating substance, its use is not acceptable in the workplace." Thus, the employer still has the right to remove an intoxicated employee from the premises, test for intoxicating substances and take legal action if an incident occurs. For employers to exercise these rights, however, companies will need to revise their policies.

### DRUG POLICY FOR CANNABIS

As cannabis is no longer an illegal substance, companies are advised to approach it in a similar way to alcohol. There should be clear guidelines that prohibit the use while on company property or in the workplace. Employees should clearly understand that they can't be under the influence while at work.

The company drug policy should include the actions that will be taken against an employee who is found to be under the influence. Companies should consider including finer points in their policy such as whether the employee will be allowed to have the substance in their possession while in the workplace.



## Oral fluid testing or saliva tests are a quick and easy way to determine whether an employee is under the influence of cannabis.

“

Companies should also specify the concentration of cannabis found during the testing that will be tolerated and should indicate whether there will be a zero-tolerance approach. Information or training sessions can be held to explain the drug policy and to prevent use in the workplace.

### TESTING FOR CANNABIS

Along with updating company drug policies to make them more specific regarding the use of cannabis, businesses also need to update their method of testing for the substance. This requires a better understanding of how marijuana interacts with the body.

Traces of marijuana, or inactive cannabiolites, can be found in the body for weeks after use. These inactive traces of the substance have no psychoactive impacts on the individual. It simply indicates that the individual has used the substance. Blood and urine tests generally only find these inactive cannabiolites, which alone can't demonstrate that the individual is under the influence.

“Don't think a urine test has any link to the psychoactive

substance and that it tests whether the person is under the influence. It does not,” Kew explains. Instead, companies should consider oral fluid testing, which screens for the psychoactive compound tetrahydrocannabinol (THC). Luckily, there is equipment on the market to assist!

### DRUG-A-LYSERS

Oral fluid testing or saliva tests are a quick and easy way to determine whether an employee is under the influence of cannabis. GM of Runrite, Justin Goldblatt explains: “Saliva testing, while more expensive than urine testing, is a far more accurate way of determining immediate impairment. Companies need to protect staff and assets, not police lifestyle choices.

“If a person is under the influence of THC, a saliva test will show this, as there is a window period in which THC will show in the saliva and remain in the mouth cavity. Although cheaper, urine testing will not actually show the presence of THC in the individual if cannabis has been used within the preceding 12 hours. It can, however, show historical use for up to several days.”

Runrite can provide clients with its handheld mobile drug-testing device: Drugilizer. It was originally designed for the Australian police for roadside testing, but has since been launched commercially.

“This unit has undergone serious scrutiny by law enforcement to prove its accuracy and reliability, as well as its simplicity. All drug testing is based on existing bioenzyme test strips. Alcolizer has a large research and development team backed by several universities, which puts the company on the cutting edge of detection technology,” Goldblatt notes.

The results from the saliva test display on the device within 90 seconds – down from the original five minutes. Goldblatt adds: “The use of digital technology to display and record results means that test results can be easily shared and stored with various stakeholders without being tampered with or lost.”

While there are products available to assist with oral fluid testing, companies should also be aware of the challenges with this form of testing, including getting an accurate and big enough sample. Cannabis tends to dry out the mouth, which can make it difficult to get enough saliva for the test.

### ACCEPTABLE LEVELS OF THC

Another big challenge is setting the acceptable limit of THC found during the test. There is no real guideline to determine the acceptable levels of THC found in an individual. Companies can take the zero-tolerance approach, but this, as with a zero-tolerance on alcohol, comes with its own challenges.

Kew recommends that the cut-off for oral fluid cannabis screening be set at around four nanograms per millilitre and two nanograms per millilitre for the confirmatory test.

Two nanograms per millilitre is said to be the equivalent of 0.5 g/l blood alcohol concentration. Companies should continue to test for the substance on a regular basis and provide employees with all required information to ensure they behave in a safe manner while in the workplace. <sup>SM</sup>

## GAINING EXPERT INSIGHTS AT NOSHCON



**From the benefits of micro-learning to preventing workplace violence, the annual NOSHCON Conference once again provided occupational health and safety (OHS) officers with invaluable expert insights and advice. MARISKA MORRIS attended**

Each year, the National Occupational Safety Association (NOSA) offers its members the opportunity to gain valuable knowledge and insights from experts into the challenges facing OHS officers and the changes taking place within the industry through its Noshcon Conference. Held at the Maslow Hotel in Sandton on September 12, the 2019 conference proved no exception.

Karl Campbell, CEO of the NOSA Group, started the proceedings with a welcome address that touched on some organisational changes including new service offerings and acquisitions. This was followed by a hearty breakfast and a short regional awards ceremony for Nosa members that have performed exceptionally in areas of health and safety.

Stafford Masie, technology start-up investor, gave the keynote address in which he discussed the benefits of technology to businesses. He explained that technology assists companies to provide better products and services in the most productive way with more accurate data and monitoring systems. He predicted that in future most data-capturing jobs will be done by machines.

"If a job requires measuring or monitoring, it will most likely be done a computer in the future and the technology will outperform the individual each time," he said. "However, as technology takes over the mundane jobs, it frees people up to be more creative and create more opportunities."

After the keynote address, delegates attended various, intimate breakaway sessions, each of which had three

simultaneous presentations on different topics.

Business strategist Edmund Rudman spoke about using behavioural economics to create a safer workplace, while Geoffrey Small, SHEQ manager at Eskom, presented on risk-based thinking, and Laura Dall, senior learning and performance advisor at Ceed Learning, discussed micro-learning.

### NEW APPROACH TO SAFETY TRAINING

In her presentation, Dall noted that after a month people tend to forget about 90 percent of the learning material studied in a traditional classroom setting. Micro-learning offers an easy way to refresh and reiterate important safety information in a fun and interactive way.

"Micro-learning has gained momentum in the area of health and safety training, because it is focused on three to five minutes of key information sharing at any given point," Dall said. It is important for the information shared through this method to be focused on only one concept, for example, how to correctly place a ladder.

The information should be easily accessible at the point of need. It should serve a similar purpose to that of a *YouTube* video that explains how to boil an egg. The information can be shared in a game format, or by asking the employee questions.

When Walmart introduced this form of learning it had a 54-percent decline in incidents during the pilot phase, with 90 percent of employees voluntarily participating in the five-minute micro-learning sessions.



### LIFE-LONG LEARNING

Risk management consultant, Natalie Skeepers, spoke to delegates about the need for life-long learning, even after they have obtained a degree or qualification. She noted: "I completed my PhD in 2016. It wasn't long ago, but I'm already old news."

It is important for OHS officers to keep abreast of changes in legislation, new approaches and methods of implementing safety procedures, as well as relevant technology. Simply knowing the information, is also not enough. OHS officers will need to be able to implement their knowledge in practical ways.

Skeepers also highlighted the need for OHS professionals to look at new trends in order to best adjust their qualifications.

**LEFT:** Stafford Masie, technology start-up investor, encouraged the 2019 NOSHCON Conference delegates to embrace new technology as it can enhance their businesses  
**BELOW:** Gerard Labuschagne, director of L&S Threat Management, emphasised the importance of protecting employees from violence in the workplace, which can cause stress and reduce productivity



With the decriminalisation of cannabis, for example, she noted there will be a wide range of new job opportunities. Remaining up to date on job trends can also help OHS officers predict challenges in the workplace.

A current common trend is for employees to have multiple jobs. This can create safety hazards in the workplace. For example, an employee might arrive at the office tired or suffer a hearing loss from performing as a DJ part-time. OHS officers will have to be prepared to address these challenges.

### EMPHASISING MENTAL HEALTH

Sanjay Munnoo, president of the South African Institute of Occupational Safety and Health (SaioSH) and regional manager of Federated Employers' Mutual (FEM) Assurance, presented on mental health and how it impacts on safety – specifically in the construction industry.

According to the South African Depression and Anxiety Group (SADAG), there are 23 suicides a day in the country and around 230 serious attempted suicides. These can occur in the workplace and cause even more trauma when colleagues witness the event or the suicidal individual causes harm to others in the process.

Munnoo encouraged businesses to rework policies and procedures to create a safe environment where in employees feel comfortable enough to disclose and discuss their mental illness or challenges with stress, anxiety or depression. He noted: "Only one in every six people report their condition to a manager."

In addition, companies can provide employees with support by ensuring they have access to the necessary specialists, take their medication and receive counselling when under stress or after experiencing trauma.

Organisations can also look for behaviour that can contribute to or aggravate an existing condition. Bullying in the workplace, for example, is a big contributing factor to stress and depression among employees.

### VIOLENCE A TIME BOMB

In one of the last sessions for the day, Gerard Labuschagne, director of L&S Threat Management, discussed workplace violence – an often-overlooked aspect of workplace health and safety. Workplace violence can take place between colleagues or be an external threat.


**Simply knowing the information, is not enough. OHS officers will need to be able to implement their knowledge in practical ways.**



"Most companies think that domestic violence is not their problem, but rather a private matter. This can lead to secondary victimisation when the employee is asked to take care of it," Labuschagne explained. However, the spouse can cause distress and anxiety by showing up to the employee's place of work. It might also lead to physical violence.

Internally, employees might cause themselves or others harm when upset. Labuschagne used the example of an employee who punched a manager. Further investigation found that the manager had been verbally abusing the employee. While the employee was disciplined, the manager was fired.

Labuschagne emphasised the need for clear company policy on workplace violence and strategies to prevent or respond to threats. He warned that an unsafe workplace will lead to anxiety, unproductivity, absenteeism and, ultimately, employees leaving their place of work.

Other presentations included a discussion on selecting the correct personal protective equipment presented by Christo Nel, director of sales and marketing in the Middle East, Africa and India at Uvex South Africa; a talk by Keshav Beachen, national sales manager at NOSA Testing, on the purpose, function and contribution of testing laboratories globally; and insights from occupational medicine specialist Greg Kew on cannabis in the workplace and drug testing. 



# HEALTH AND SAFETY: CORE VALUES IN WORLD'S LARGEST CHOCOLATE FACTORY

**Deemed a super food by scientists, courtesy of its anti-oxidant properties, chocolate tops the list of best-loved “treats”. LIANA SHAW explores the world’s largest chocolate factory, based in the Netherlands, to find out how its so-called Value Based Leadership initiative is enhancing plant health and safety**

**W**ith an emphasis on creating a natural and authentic leadership environment that enables the Mars Netherlands factory leaders to make a deep personal connection to safety, Richard Jordan, health and safety (HSE) manager Veghel Supply at Mars Netherlands, claims the chocolate maker is moving away from seeing safety as a priority in its business, embracing the concept of incorporating Safety as a Value in all of its associates instead.

“Although the concept of Safety as a Value is not new in the world, what is new is the way we approach it,” states Jordan.

Management hopes to stimulate all of its 1 200 associates to assess potential risk before starting to work, and report incidents and near misses via an incident report form, so that each incident can be prevented and unsafe conditions can be removed.

According to Jordan, because most of the company’s associates have grown up with an entrepreneurial mindset, they do not easily conform to following rules that do not emanate from their own thinking. The challenge lies in embracing their entrepreneurial spirit, while also getting them to work to the same set of rules and procedures.

“In recent years, we have been focusing on creating an open atmosphere, so that incident investigations do not feel like a

Supreme Court investigation, but rather an open and honest conversation with all involved to find out the “why” behind an incident. The end goal is to strike a balance in how we assign blame. We strive to create a just culture where we can discuss appropriate accountability.

“I believe the strategy is working and that conversations in our factory are becoming more open and less dictated by fear. I know this because my team and I are being approached more and more to help assess potential hazardous actions before the work takes place,” says Jordan.

Each potential threat or incident is then assessed for its potential to result in a serious consequence or injury, and the findings are shared with 19 other sites.

In addition, the technical state of the factory – which was first established in 1963 – continues to improve with time. Having grown in size and production volume year on year, the Mars Netherlands factory now produces more than 270 000 t of product with the help of nine highly automated production lines. Currently, no manual labour is required to run the production process, besides loading the correct wrapping material into the machines and performing quality checks.

Regular audits serve to assess plant’s compliance with respect to health regulations, while a legal advisor is employed to track and alert management on any changes in national



and European regulations as and when they apply to their respective plant.

Staff are also privy to a series of programmes aimed at stimulating their health and overall well-being. One example is a voluntary free programme to help them stop smoking, and with diet considered crucial to overall health, the company offers a variety of healthy meal choices in its company restaurant.

“Furthermore, we run an active and up-to-date health and risk inventory of the factory, spending a part of our investment budget each year on improving working conditions at the site,” adds Jordan.

“Every associate is free to make use of improvement cards to suggest and recommend improvements to their department. For safety-related improvement, associates can also request improvements stemming from an unsafe situation of which they may become aware.

“We assign a Kinney score to each incident and/or improvement form to assess risk, assign priority and to track improvement of these cards via our reporting structure,” he says.

Value Stream managers [production managers], together with their teams, are responsible for prioritising and solving all improvements generated from incidents and improvement cards, with the number of outstanding safety improvements and lead times being reported in their performance dashboard.



Next, via active collaboration between the Value Stream teams and managers, priorities are assigned and corrective and preventative measures are taken together with operators and technicians.

“Thanks to these measures, I am very happy to see that the severity in incidents is decreasing, which in turn, translates to fewer work days being lost,” adds Jordan.

“With safety now a core value, we strongly believe that any incident is one too many. Moreover, safety is not so much about the numbers, but about the person behind the incident. Our aim is for all associates to leave the workplace at least as healthy as they arrived ... if not better.

“As a family business, all the factories and associates feel like family. A serious incident and most especially a fatality, has a massive impact on us all. The last fatality on our site was more than 25 years ago and still to this day our associates speak of the incident,” says Jordan.

Dedicated training programmes go a long way towards ensuring factory safety, according to Jordan, while remuneration



**ABOVE:** Richard Jordan, health and safety manager Veghel Supply at Mars Netherland

in the form of variable pay further includes safety and quality targets by way of an incentive for staff to continue practising safety measures on the job.

Jordan says going forward the goal is to bring safety to the forefront of each associate's mind, to create a culture where open conversations revolving around safety can take place without fear of consequences, and where common sense, coupled with compliance to given standards and regulations, prevails.

With more than 25 chocolate-producing facilities in the world, Mars manufactures products such as Wrigley's Gum, Freedent/Orbit and Skittles. The company also makes food products such as Suzi-Wan, Uncle Ben's and Dolmio, as well as pet food such as Whiskas, Pedigree and Royal Canin. **SM**



# RISK MANAGEMENT IN SUPPLY-CHAIN

**The landscape for managing risk has changed. Following the 2008 financial crisis, people no longer have the same amount of trust in companies**

**B**eing perceived as trustworthy has become a priority for companies. Risk management is one of the most important functions of a board of directors. Boards are generally aware that the risk-management landscape has changed and they expect management to evaluate that risk differently.

Companies need systematic processes in place to identify and manage risk, especially in the face of increasing oversight and regulators seeking to rebuild credibility by using higher-profile enforcement activity. Regulators' expectations of compliance programmes have changed dramatically in recent years and they are continuing to evolve.

The operating environment for companies has also changed. New technologies bring additional cybersecurity risks. Social media has increased this risk exposure and local issues can rapidly become global. A company's brand and reputation has, in the eyes of stakeholders, become symptomatic of how that company manages its risk.

Companies also need to consider their ethical obligations while complying with their legal obligations. Legislation dictates the minimum standards required of a company, whereas ethics is something that should be applied by all companies, even if they are not legally compelled to do so.

Companies need to find their "sweet spot" by considering their culture, values and conduct in order to determine what is reasonable, while balancing the need to remain profitable.

Increasingly, environmental, social and governance (ESG) awareness is becoming more relevant than the letter of the law.

Environmental issues would include: climate change; greenhouse gases; resource depreciation (including water); waste and pollution; and deforestation.

The social issues include: working conditions (including

slavery and child labour); local communities (including indigenous communities); conflict; health and safety; employee relations and diversity.

Governance issues include: executive pay; bribery and corruption; political lobbying and donations; forward diversity and structure; and tax strategy.

A supply chain is only as strong as its weakest link. A company must consider cyber security and data and privacy protection; ESG and sustainability; increasing regulation and regulatory scrutiny; and incident response and crisis management.

Risk management of the supply chain and logistics requires careful consideration of the company's role in the supply chain and the exposure to various risks. Proper risk management involves considering the risks that the other role players in the supply chain may encounter. These role players include the seller, buyer, logistics service provider, bank financing institution and underwriter.

Companies then need to understand the legal parameters of the various risks. These would include the contract of sale, the logistics contract, the banking or financing instrument and the relevant insurance policy. Within these legal instruments, the factors that give rise to risk must be identified.

Consider the nature of the cargo concerned, the types of carriage, the geography over which carriage will take place, the various international regimes and local laws, costs, cyber risks and new technology.

Cybersecurity as an integral part of a company's risk-management system, and the impact of new technologies on supply chains are fertile grounds for new technology such as smart contracts, block chain and autonomous vessels.

These new technologies and their impact on cyber risk will be discussed separately in a series of upcoming articles. <sup>SM</sup>



**Peter Lamb** is a director in the Norton Rose Fulbright admiralty and shipping team, based in Durban. A qualified attorney, Lamb has an LLM in shipping law from the University of Cape Town. He focuses on shipping, logistics and marine insurance law. Lamb is also able to advise logistics service providers, and users, on numerous commercial aspects and risk management, with a focus on Africa. You can read more from Lamb on the Norton Rose Fulbright [insideafricalaw.com](http://insideafricalaw.com) blog.





# ADDRESSING NOISE IN THE WORKPLACE

**Whether it is constant chatter in the office, or loud drilling on a construction site, noise pollution can result in an unproductive workplace. MARISKA MORRIS looks at some of the approaches to preventing noise in the workplace**

**C**onsistently loud working environments can greatly impact on the performance and productivity of employees. Noise pollution can cause irritation and stress or be a distraction, which results in employees making mistakes. In a worst-case scenario, employees can suffer hearing loss or damage.

As audiologist at Custom Care Elri van der Merwe points out: "Noise pollution is more than just an annoyance. It can lead to adverse health effects. In fact, studies have shown that noise pollution can damage physiological and psychological health. It can cause hypertension and even lead to coronary artery disease."

For this reason, it is important for companies to manage the noise levels in the workplace. This could include reducing the noise of the machinery on the factory floor, or encouraging employees to converse in boardrooms so as to not disturb other office workers.

While each industry will have its own method of intervention, Van der Merwe suggests starting with awareness of what causes noise pollution and its effects. Companies should identify the source of the noise; note its path to the employee; determine any relative contributing factors to excessive noise; and identify solutions.

An employer can implement sound-absorbents panels, ensure proper lubrication and better maintenance of machinery, regularly check noise levels and invest in proper hearing protection.

The NoiseX hearing protection offered by Custom Care provides employees with a personalised fit, which ensures


comfort while reducing noise pollution – a key feature of any personal protective equipment (PPE), according to Van der Merwe.

"Every person is unique and requires a specific prescription for PPE. There can't be a copy-and-paste approach in the roll-out of occupational health and safety products – especially when every employee has a unique workplace environment and requirement," she explains.

"NoiseX is an attenuation adjustable custom-fit hearing protection product that is calibrated per person to suppress noise to the required legal sound attenuation levels," says Van der Merwe.

The 3D-printed device can provide a reduction of noise up to 40 decibels (db). Each device issued comes with a real ear measurement certificate. It is lightweight, doesn't cause pressure or irritation in the ear canal and doesn't cause build-up of moisture. As the device is also fitted for the specific individual, it can't be used by anyone else.

"NoiseX users receive training on how to clean and store the device. A quick wash with warm water and soap daily is all that is required. It also comes with a pocket-size receptacle in which to store the device. Provided the product is used and stored correctly, it can be used for a minimum of five years," Van der Merwe says.

She also emphasises the importance of having the device serviced on an annual basis to ensure it is still fit for use. Custom Care can assist with hearing conservation programmes and database management, which helps companies to meet and improve regulatory compliance. 

# INDOOR AIR QUALITY: A “CREEPING BLIGHT”

**Startling – and disquieting – revelations about the condition of the air that we breathe were made by Julie Riggs at the 2019 Saïosh Health and Safety Conference.**

**DEBORAH RUDMAN reports**

**R**iggs, a United Kingdom [UK]-based academic practitioner and speaker, who's highly experienced in a range of occupational health and safety [OHS]-related disciplines, highlighted what she called “the creeping blight” of poor air quality.

She noted that recognised risks in the work and domestic environment include fire, noise and vibration, but that a greater danger is that of the “toxic soup” prevalent in the air indoors.

What makes it especially insidious is that people's perceptions can be skewed by the apparently benign nature of what they breathe. She pointed out, for example, that most people love the scent of perfume, a car freshly professionally cleaned at the valet service, or that of the print of a just-opened magazine. These smells are frequently associated with positive feelings; however, the constituent chemicals are often synthetic, which can cause physical and psychological harm.

Scientists at the World Health Organisation [WHO] agree that the degradation of indoor air quality – the physical, chemical and biological characteristics of air within a building – is one of the top five health hazards globally (it's more toxic than an industrial-waste site).

The roll-call of chronic and harmful effects of indoor air quality is troubling: chemicals have a negative impact on respiratory and heart functioning,





and contribute towards many pollution-related cancers, migraines and asthma.

The WHO has estimated that one-million people in Africa are victims of air pollution each year, with more deaths from pollution-related cancer than malaria, HIV/Aids and tuberculosis combined. It has established as one of its principles that everyone has a right to breathe healthy indoor air.

Humans spend up to 90 percent of their time indoors, said Riggs. Breathing is largely an unconscious action, and people breathe in the “air equivalent” of 600 five-litre water bottles every day [approximately 20 000 breaths].

## A growing body of scientific evidence has indicated that the air within buildings can be up to ten times more seriously polluted than the outdoor air.

“

The air indoors is well travelled, dusty, laden with chemicals and contaminated by colleagues’ exhalation and other pollutants. These pollutants enter our bloodstream through our nose, which is the gateway to the brain, and have physical and psychological effects.

A growing body of scientific evidence has indicated that the air within buildings can be up to ten times more seriously polluted than the outdoor air – even in the largest and most industrialised cities.

Its sources, according to the National Institute of Occupational Safety and Health in the UK, include inadequate ventilation, building products, bio-aerosols, as well as outside and inside contamination. Riggs said that the challenges for OHS practitioners are to acknowledge, articulate, assess and act.



### ABOVE:


Julie Riggs, UK-based air-quality expert

She also noted that we breathe out CO<sub>2</sub> – and at certain levels, from 1 000 parts per million, the human body will warm up and productivity will drop by an estimated 30 percent, meaning that poor-quality indoor air has an economic impact, too.

One of the unexpected hazards is the practice of “sealing up” buildings to make them more energy-efficient; however, the unwanted outcome is that poor air is also sealed within the buildings.

Riggs added that some people are more susceptible than others to the effects of pollution. Women have more body fat than men, which accumulates chemicals more readily. The older people get, the less their bodies are able to process the “body burden” or the mass of chemicals [about 700] that remain unprocessed within the body.

Asthma is one of the top three killers worldwide [cancer and stroke are the other two], with children being particularly vulnerable. She noted that parents creating a nursery at home to welcome a new baby unwittingly introduce a host of hazards, such as chemicals in the fresh paint and vapours from plastic furniture.

Riggs concluded that the “sleeping giant” of the future, in both the home and the workplace, can no longer be ignored. 

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Why it's important to have a clear policy on drug and alcohol consumption – on or off workplace premises



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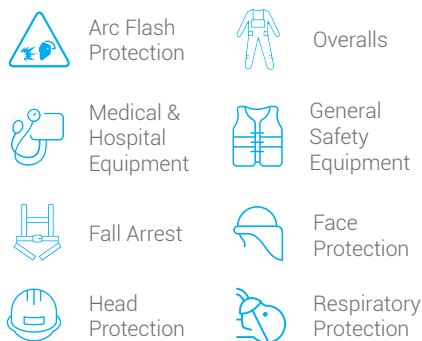
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## uvex u-chem 3200

Reliable chemical protection in slim-fit design

The uvex u-chem 3200 offers a secure grip for handling oil, cooling lubricants and chemicals. The new slim-fit design stretches and moves easily with the hand giving high levels of dexterity. It also offers excellent chemical protection and resistance to oils and grease.