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Food safety: the enormity of concerns

Best practices for respirator fit testing

Spread of disease in public facilities

Mental health awareness: avoid disruption in the workplace

e-hailing services and intoxication: are drivers tested before getting behind the wheel?

Four injured in a school classroom chemicals demonstration fire

Monkeypox - is it a national health emergency?

Prevention of dangerous bacterial contamination in chickens



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## Editor's Comment

LOADSHEDDING!! Not surprising South Africa's word for the year, dominating our lives with schedules and apps. Powering computers down before darkness hits, powering up as soon as lights flicker back. Even night-time loadshedding is no relief. To avoid power surges we are told to switch off at the DB board during loadshedding, no matter day or night, leading to disturbed sleep night after night. And there seems no end to this never-ending disruptive cycle. For two years we lived under the strain of Covid-19, and have now moved onto living under the strain of unrelenting loadshedding and yoyoing stages. It is no surprise that mental health problems in South Africa are at an all-time low. With Mental Illness Awareness month celebrated now in October, businesses must see this as an opportunity to understand the mental strains among their workforce.

With the realisation that loadshedding is here to stay, has come the frenzy to find alternative energy sources, the most popular and effective being solar panels. Otto Botha reminds us that the installation of solar panels - whether in the home or industry - is governed by the National Building Regulations, Occupational Health and Safety (OHS) Act, and the Construction Regulations.

### RESPIRATOR FIT TESTING POST COVID

Besides having to deal with disruptions during Covid, the industry also had to deal with the deluge of counterfeit PPE, with OEMs struggling to raise awareness and educate the public how to tell the real from the counterfeit. Unscrupulous suppliers and manufacturers crawled out of the woodwork to satisfy the demand for N95 masks. Although most came with claims to be compliant, there was no control over their effectiveness. According to Rob Brauch, many were not capable of protecting the wearer against any transmission of SARS CoV-2. With masks being hailed as one of the most effective ways to curb the spread of Covid, this is frightening. According to him, the most effective way of determining whether it is actually protecting the wearer is by performing Fit Testing which he explains in his article.

### ASBESTOS AND THE WORLD TRADE CENTRE BOMBING

On 09 September 2011, I struggled to pull myself away from the television as the horrors of the World Trade Centre bombing unfolded. But as the weeks moved on, so did my thoughts and my life, and soon I was only reminded about it annually on its anniversary. Unlike the first responders who rushed to help save lives, who breathed in the asbestos fibres and other toxins that choked the air, and who have never had the luxury of moving on. Now 21 years later they are still suffering. With a latency period of 10 - 50 years, respiratory diseases and cancers that started after 9/11 are continually being diagnosed. ADAO in its article criticises America for not banning asbestos like countries such as South Africa.

### FOOD SAFETY

Anyone wanting to know about dangerous bacteria such as campylobacter that lurk in chickens, read the article by Amy Gower. You will also learn why M&S started selling roast-in-the-bag chickens. Anyone wanting to learn about the vital role that the supply chain plays in food safety, from farming to eating, read Ehi Iden's article. You will also read why eggs shouldn't be washed.

### HEARING PROTECTION

Dr Marinda Uys continues with her lessons in NIHL. If you want to "hear for life", according to Delta Health and Safety, then both these articles in this issue should be read, studied, understood and filed for reference.

## e-hailing services and intoxication: are drivers tested before getting behind the wheel?

One of the main reasons e-hailing ride services have become so popular is that they offer individuals a safer alternative to drinking and driving, as the law prohibits road users from operating a vehicle or motorcycle while under the influence of intoxicating substances.

While drivers for e-hailing services are no exception to this rule, what assurances are there for passengers that their driver is not intoxicated? What policies and protocols are in place to prevent such dangerous behaviour? Users of e-hailing services must start asking these questions, not just for their own safety, but for the safety of their drivers and all other road users.

### PRIORITISING PASSENGER SAFETY

Road traffic legislation seeks to prohibit all consumption of alcohol before getting behind the wheel. It's therefore becoming increasingly important for e-hailing service providers to clarify and communicate their policies with regards to how they're ensuring passenger safety.

An important aspect of passenger safety means that e-hailing service providers have an obligation to enforce strict policies concerning the consumption of alcohol and intoxicating substances by drivers while on the job.

As important is visible enforcement, which has a two-fold effect:

- First, it increases public trust. If passengers feel safe, they're more likely to use that service and recommend it to their friends.
- Second, it has a deterrent effect on drivers. If there is visible enforcement of anti-alcohol rules, drivers will have to obey the rules or risk placing their livelihood on the line.

### ENFORCING THE RULES

With hundreds, if not thousands of e-hailing drivers on the road it might seem impossible to ensure the sobriety of every single driver. But this is not the case. Many devices and systems can assist with policy enforcement. For example, there are devices that link to a vehicle's ignition, requiring a clear breathalyser test result to start the engine. These can be configured to request the driver performs breathalyser checks.

The e-hailing apps can also be linked to breathalyser test devices via Bluetooth. As the driver opens the app it switches on the breathalyser, using facial recognition and location detection to complete and verify the breath alcohol test. This can be configured to take place at the beginning of shifts and at random intervals, for example, before a driver can accept a ride request.



By Rhys Evans,  
Managing Director of  
ALCO-Safe

Additionally, consequences must be in place for drivers who break the rules. Whether they're penalised, suspended or blacklisted for multiple offenses, drivers need to know that their livelihood is at stake before consuming alcohol and accepting ride requests.

### WHAT CAN PASSENGERS DO TO ENSURE THEIR OWN SAFETY ON A TRIP?

The public has the power to influence the outcomes of these safety concerns, simply by refusing to use a service that does not prioritise their safety and rather choosing one that does. Whether it's raising the question on social media or addressing the topic directly with the driver or service provider, it's important for passengers to take steps to ensure their own safety. After all, what is the point of a passenger leaving their car at home because they didn't want to risk drinking and driving, when there is a risk that their safe alternative isn't safe?

When a passenger suspects that their driver is under the influence (whether alcohol or any other intoxicating substance), they should end the trip immediately and report the driver using the on-board safety tools provided on the app.

### THE PROVIDER AND LIABILITY

Should the unthinkable happen, and an intoxicated e-hailing driver causes a road accident (even worse, a road fatality) that service provider would be held responsible in the same manner as an employer. Not only would there be legal and criminal consequences, but the public perception of such an e-hailing service provider would be irreparably damaged, particularly if the service provider has no clear, enforceable substance policy in place to prevent such incidents.

With so many of their drivers on the road, representing their particular brand, service providers are obliged to ensure the sobriety of their drivers to secure the safety of their passengers.

This should not be seen as a burden with which they must legally comply. Rather, they should take it as an opportunity to reassure their users that safety is of paramount importance, gain public trust and have a competitive advantage over others.

Service providers should take these steps now, proactively and preventatively, instead of in reaction to a tragedy.

<https://www.alcosafe.co.za>



Consumption of  
intoxicating substances  
and alcohol by drivers  
while on the job must  
be enforced by  
e-hailing service  
providers.

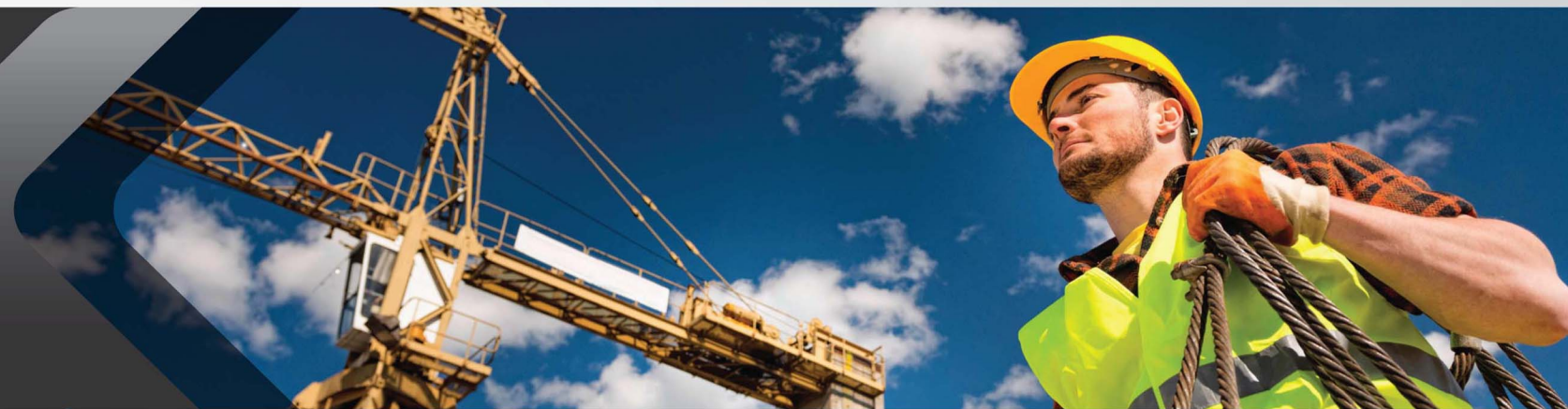


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# Best practices for respirator face fit testing in a post-COVID world



Rob Brauch based in Buffalo New York USA has been writing about new technologies and methods for OH&S professionals for over 30 years. He is a noted speaker at OH&S conferences around the world.

COVID dramatically changed society's awareness of and relationship with RPE

Respiratory Protection Equipment, or RPE saw rapid evolution and mass adoption during the recent global pandemic.

RPE is a purpose-built subset of Personal Protective Equipment (PPE) and is used to protect the individual wearer against injury and illness caused by hazardous substances of all types – for example, chemical, biological, and radiological materials typically found in the workplace environment.

As the SARS CoV-2 virus started circulating around the globe killing thousands of people each week, the world began to notice. It became clear there was there a global shortage of tight-fitting respirators, but also a great deal of confusion as to the types of RPE available and their effectiveness and ability to help stop transmission of COVID.

It's reasonable to say that COVID dramatically changed society's awareness of and relationship with RPE, elevating the importance of testing its performance characteristics both at time of manufacture and in day-to-day use.

Long before COVID, the role of tight-fitting respirators in preventing or minimising human exposure to chemical, biological, radiological and a myriad of other toxic substances was well understood and accepted by industrial hygienists, safety professionals and regulatory bodies around the world.

Since COVID, many new RPE products have been added to what was already a vast array of available choices. Let's examine the various forms and composition of respiratory hazards to better understand why there are so many different types and classes of RPE on the market today.

## RESPIRATORY HAZARDS

Respiratory hazards exist in the form of vapours, fumes and aerosols, the latter containing particles surrounded by other molecules. The sizes of particles that can cause respiratory distress and illness range in size, or 'fractions' and are classified as inhalable, thoracic, and respirable.

In the OH&S world, these have been defined as particles so large (>10 microns [ $\mu$ ], or "Inhalable") that they will be deposited on the mucous membranes of the nose and the mouth and thus do not enter the body beyond the larynx, thoracic, (<10 $\mu$ , >4 $\mu$ ) which are deposited in the 'Upper respiratory tract', and finally, respirable (<4 $\mu$ ) which can penetrate all the way to the alveoli, those tiny structures in which the lung exchanges carbon dioxide molecules for oxygen. It is here that the most harmful damage and injury to the lungs will occur, such as silicosis and pneumoconiosis.

Respirable dust causes damage to the Alveoli and scarring that permanently decreases lung function and can trigger cancer. (The EU has recently classified respirable silica as a carcinogen).

Research data published by US CDC/NIOSH shows that extremely fine particles - including nanoparticles and viruses - can pass through the alveoli intact, thus allowing these hazardous agents to pass directly into the circulatory system or 'bloodstream' of the exposed worker.

Therefore it has become more important than ever to understand the proper selection, fitting, use and maintenance of RPE for all persons exposed to hazards whether in their normal course of work or in the ambient environment (in the case of highly transmissible biological and chemical hazards whether they are naturally occurring or man-made).

## RPE AND ITS USE

It should be noted that RPE is only to be used when adequate control of exposure cannot be achieved by other means, in other words, as a last resort within the hierarchy of control measures: elimination, substitution, engineering controls, administrative controls, and lastly, PPE/RPE. However, in day to day life, RPE has become the 'first line of defence' against all airborne hazards including infectious diseases.

Remember, even the highest performing respirators will be of no protective value if the face seal is breached to any significant degree.

Performance of readily available classes and forms of RPE can vary a great deal, based on the demands of the application (e.g. an N95 versus an FFP3, 2 or 1, versus a half- or full-facepiece elastomeric respirator).

Pre-COVID this was generally consistent with labels showing recognised performance certifications and approvals - based on 3rd party certification testing to established standards such as that performed by CDC/NIOSH at the National Personal Protection Technology Laboratory



(NPPTL). However, that is always based on the premise that the respirators do not 'leak' at the seal, as they are fitted to each individual's face during actual use.

## RPE FIT TESTING

That held true until counterfeit RPE started showing up. Unscrupulous suppliers began producing so-called respirators that appeared to be compliant and were even labelled as such, when in fact they were not capable of protecting the wearer from airborne transmission of the SARS CoV-2 virus or other hazards.

The most effective way of determining whether a supposed piece of 'compliant' RPE is actually protecting the wearer is by performing

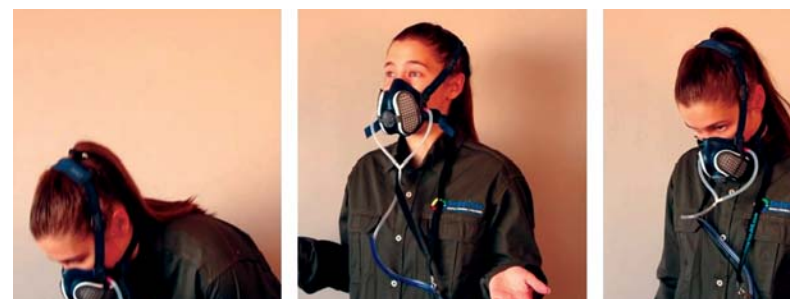
Quantitative Face Fit Testing, which in the case of an FFP or N95 series respirator scientifically determines that the filtration media is in fact truly effective.

Many of the things learned about respirator performance during the pandemic applied directly to the area of respirator fit testing – for a number of critical reasons – perhaps most of all, the urgent need to protect large numbers of first responders, caregivers and others who previously may not have been issued RPE for their daily work routines.

Respirator Fit testing per OSHA CFR 1910.134 has been a mandatory part of all compliant Respiratory Protection Programs (RPPs) in the US. Both qualitative and quantitative methods are allowed by OSHA, and quantitative methods can use either the CNC (Condensation Nuclei Counting) technique, or the CNP (Constant Negative Pressure) technique.

**Qualitative methods**, using a sweet or bitter challenge agent such as Saccharin or Bitrex® always rely on the test subject's sensory response - such that if these aerosolized materials are infiltrating a poorly fitting or poorly performing respirator, the subject will sense it and alert the test administrator - resulting in a failed fit test.

**Quantitative methods** rely on an instrument that is purpose-built for performing a measurement to objectively determine if the 'Fit Factor' meets the requirements for the class of respirator being tested.



Qualitative fit testing has been used extensively in part due to the perceived cost of acquiring and operating a Quantitative Fit Test device, despite the fact that studies indicate that when administered correctly per the OSHA Protocol, there is a significant human cost in terms of both time spent for each test as well as the risk of RMI (repetitive motion injury) to the administrator, who may be required to squeeze a manual nebulizer thousands of times per day. Add in the amount of work needed to decontaminate a Qualitative Fit test hood, and you have a lot of manual work that interferes with getting a good result in a reasonable amount of time.

## IMPACT OF COVID ON FIT TESTING

When COVID started to hit the workforce in large numbers, however, it became apparent that one of the 'early onset' symptoms, anosmia / hyposmia and ageusia / hypogeusia (full or partial loss of the sense of smell and taste, respectively) could hinder the subject's ability to accurately respond to the challenge agent(s). Adding in that these symptoms typically occur very early in the infection cycle, where the subjects would still register as 'negative' in a COVID Antigen or PCR test, and you can see why there was concern regarding the use of subjective response as a valid indicator of sufficient fit.

A session related to this topic was presented by the author of this article at AIHce 2021 (held virtually) titled "Implications of Anosmia and Hyposmia on the Accuracy of Qualitative Respirator Fit Testing".

Further research needs to be done, but by removing the subjective response and using a measuring instrument to determine the fit factor would seem to be more in line with accepted exposure sampling methods used by occupational hygienists for decades. Think about that - when was the last time you asked a worker 'was the noise you heard above 85 dB(A)?' instead of using a dosimeter or sound level meter to objectively measure their environment?

Qualitative fit testing was not the only method that saw an impact from COVID on the fit test process, however.

Another outcome of COVID was the intense focus put onto air handling / HVAC systems with greatly increased installation of HEPA filtration to try to stop the airborne dispersion of the virus indoors. Vastly reducing the number of respirable particles in the building can have an impact on the operation of Quantitative Fit Test devices using the CNC method as these devices utilise the ambient concentration of respirable particulates in the air as the challenge agent to both the seal and filtration

| Start/Stop | No.1 Start        | No.2 Start | No.3 Start | No.4 Start |
|------------|-------------------|------------|------------|------------|
| Person     | Jacobus Peter-Jul |            |            |            |
| Respirator | 3M 6010 FFP200    |            |            |            |
| Mask Size  | One Size Fits All |            |            |            |
| Company    | Sedullias         |            |            |            |
| Due Date   | Dec.17.2022       |            |            |            |

| Exercise             | No.1  | No.2 | No.3 | No.4 |
|----------------------|-------|------|------|------|
| 1. BENDING OVER      | > 200 |      |      |      |
| 2. TALKING           | 60    |      |      |      |
| 3. HEAD SIDE TO SIDE | > 200 |      |      |      |
| 4. HEAD UP AND DOWN  | > 200 |      |      |      |

OVERALL FIT: 175  
Fit Test Result: Pass

media (in the case of N95, FFP3 and other disposable tight-fitting respirators).

Fortunately, this issue can easily be overcome with the newest CNC technology by using a particle generator to supply sufficient levels or aerosol matter. CNP devices are unaffected by this, but the CNP method is incapable of testing ANY N95, FFP Series or KN95 respirators as those respirators cannot form an 'airtight' seal – by design.

#### PROBLEM SOLVING THROUGH INNOVATION

AccuTec-IHS has taken this technique to another level of functionality through innovation by incorporating a real-time wireless Particle Generator Control function that allows the AccuFIT9000 to turn the free-standing particle generator device on if ambient levels fall below a user-selected level (typically 2-3000 particles/cc), and to turn it back off if levels get excessive (> 6-8000 particles)

Another new innovation in AccuTec's Fit Test devices is the possibility to power them from a rechargeable external power source, such that fit testing can be conducted at remote sites or anywhere AC mains power is unavailable or intermittent. This is not uncommon in many parts of the world. AccuTec-IHS once again responded to customers' needs by creating the AccuPACK™ auxiliary power supply to power the RFT device for a minimum of 8 hours and as much as 12 hours.

#### IMPORTANCE OF CERTIFICATION

To be sure, the long-running debate about whether Quantitative fit testing is preferable to Qualitative testing will not go away just because of COVID. But an interesting development that was already underway in other parts of the world could have extreme relevance to how we in the US and

elsewhere approach the entire Fit Test process and procedure. And that has to do with certification of the test administrator.

As early as 2014, it was announced in the UK that a Fit Test Accreditation body, called Fit2Fit was formed with the mission of certifying that all persons performing fit tests had been through a comprehensive training programme to ensure quality and consistency of the procedure, whether it be Qualitative or Quantitative. This is no different than obtaining CAOHC certification for those who are administering hearing tests to prove that they comply with the requirements for producing OSHA required audiograms for workers who are included in a hearing conservation programme.

It seems somewhat incongruous to this author that this requirement must be in place for hearing tests but not respirator fit tests. Although hearing loss is devastating to the afflicted worker, and is a compensable injury under OSHA, it does not result in death or terminal illness as certainly can be the case with a worker wearing an incorrectly fitted respirator.

Technicians and test givers need to be aware of the proper use of Quantitative Fit Testing equipment

As Quantitative Fit Testing equipment continues to evolve with new capabilities such as wireless control of particle generators to optimise the ambient levels, technicians and test givers need to be aware of their proper use, just as would a certified hearing test provider. Others around the world

appear to agree, as countries like Australia and New Zealand are joining the growing list of places where similar accreditations have been issued or being considered.

All in all, the challenges respiratory protection programme managers faced when dealing with proper fitting and use of RPE during a pandemic cast a more intense light on the methods, machines and manpower needed to protect workers from all forms of respiratory hazards.

Suppliers of fit test products and instruments will continue to innovate, and expectations will grow regarding the certification of practitioners and administrators.

#### PREPARE PROPERLY FOR NEXT PANDEMIC

Together, the OHS community and other stakeholders will all play pivotal roles in assuring that the next global pandemic or other unexpected events will be met with even stronger understanding and application of the science, technology and methods needed to do the job right.

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# Put your hearing first and hear for life

Hearing loss affects every aspect of your life. Imagine never hearing your child laugh again, or missing the melody of your favourite song.

Once you begin to notice noise-induced hearing loss, it is too late to reverse it.

### HOW DOES NOISE INJURE YOUR HEARING?

Hearing loss happens when a part of your ear or its nerves stops working as it should. There are times when the damage is irreparable.

Loud noise, either through single or repeated exposure, damages the cells and membranes in your cochlea.

Noise may damage your auditory nerve, making it challenging to discern speech in noisy environments.

An average person has approximately sixteen thousand hair cells inside their cochlea. This hair carries sound to the brain, which is how we hear.

High noise levels produce intense vibrations, forcing the stereocilia against the membranes and breaking them. When they break, outer hair cells swell, and sound cannot reach the brain normally.

Between 30 and 50 percent of your hair cells need to be damaged before noticing the hearing loss. Unfortunately, by the time it's detected, you cannot undo it.

### HOW NOISE RATINGS WORK IN DIFFERENT REGIONS

When you purchase hearing protection, it's essential to ensure it sufficiently reduces noise for your specific environment.

Long-term exposure to noise above 70dB or single exposure to noise above 120dB will damage your hearing. Your hearing protection must therefore reduce noise levels to below 85dB.

Every hearing protection device has a rating that indicates the noise reduction level it offers. However, this rating differs between geographic regions.

#### NRR: United States Noise Rating

The United States uses a Noise Reduction Rating (NRR) which tells how many decibels noise is reduced by.

The European standard is referred to as Single Number Rating (SNR).

In South Africa, we use SNR hearing protection ratings. However, to understand the calculations of SNR, we must first look at NRR.

#### “How-to” for NRR-devices

Noise intensity in your workplace must be measured using a Sound Pressure Level meter with an A-weighted filter. And an average measurement of the noisiest area taken.

To determine if hearing protection is appropriate, subtract seven from the NRR. Once you have this value, subtract it from the average noise measurement. The resulting number is the actual noise level heard by the wearer.

However, this is only the case under ideal circumstances. In the United States, OSHA assumes that hearing protection will not be correctly fitted or worn by trained users. To account for this, they apply a 50 percent correction factor.

To calculate the actual exposure level according to OSHA, subtract seven from the NRR. Once you have this value, divide it by two and continue with the calculation.

To ensure appropriate protection, OSHA assumes that noise exposure is worse than what is calculated.

#### SNR: European Union & South African Noise Rating

Unlike American standards, the European Union regulations assume that wearers are fitted and trained to wear hearing protection.

European hearing protection has a Single Number Rating (SNR) instead of an NRR.

#### “How-to” for SNR-devices

To determine appropriate safety, measure noise intensity in your workplace using a C-weighted filter.

Deduct the SNR from the noise level rating, and the resulting figure is the assumed noise level heard.

#### 3M Noise Rating

3M does not believe in reducing noise level ratings to account for ill-fit or poor training. Instead, they created the E-A-Rfit Dual-Ear Validation system to ensure their devices fit perfectly for maximum protection.

#### WHAT IS FIT TESTING?

Fit testing measures the actual noise reduction experienced by a specific wearer. This noise reduction is a Personal Attenuation Rating (PAR).

Fit-testing occurs through various methods, with F-MIRE being the preferred.

#### What Makes 3M's Fit Testing Unique?

The 3M E-A-Rfit Dual-Ear Validation system

### YOUR HEARING PROTECTION DICTIONARY

Here are some helpful terms you will encounter when selecting suitable devices.

#### Attenuation Value

The decrease in sound level experienced by a wearer with a hearing protection device in place.

#### NRR – Noise Reduction Rating

The single-number description of a hearing protector's noise reduction capability tested under standardised laboratory conditions.

NRR is the rating system used in the US.

#### F-MIRE

A method of field-testing hearing protection's attenuation.

**F-Mire** stands for Field Microphone-In-Real-Ear.

It is the preferred test offering a good balance between speed, accuracy, repeatability, and correspondence with actual practice.

#### Decibel

A unit measuring the intensity of a sound. Sound levels described as decibels must have a reference indicated. For example, decibels Sound Pressure Level (dB SPL).

#### Sound Pressure

The pressure variations in the air created by sound waves.

#### Noise

An unwanted or complex sound with irregular vibrations and no pitch.

#### SNR – Single Number Rating

A similar measurement to the NRR.

However, it is used in Europe and other regions and is determined using a different method and calculation. SNR values tend to be a few decibels higher than NRR values.

#### PAR – Personal Attenuation Value

The decrease in sound level in a wearer's ears while wearing hearing protection. The PAR is a calculated value of a probed insert in each ear during a hearing protector fit test. It gives a rating of the fit of a specific product for a particular wearer. PAR can either be measured through a single fit or as an average of multiple fits.

#### Frequency

The measurement of the number of sound vibrations in one second. A frequency measurement establishes the levels of intensity of specific tones.

consists of a loudspeaker that generates random high noise levels. The test subject sits with their nose 30 centimetres from the loudspeaker. A dual-element microphone measures noise levels outside and inside the ear canal.

These specially designed microphones connect to a specially modified 3M probed hearing protector.

The 3M E-A-Rfit Dual-Ear Validation system provides earplugs and ear-muff testing.

Testing both ears simultaneously saves time. It measures a staff member's PAR in less than five seconds. To be accurate, fit testing should accompany training in the correct use of hearing protection.

Each staff member's fit test results can be saved to their file for record keeping purposes. Consistent fit testing helps identify if a staff member is experiencing hearing difficulties. Having a record of previous fit

tests helps assess whether their hearing loss is noise-induced. A staff member who has consistently achieved an adequate fit test result is unlikely to have noise-induced loss.

The 3M E-A-Rfit Dual-Ear Validation system identifies workers at high risk of noise-induced hearing loss. It also enables you to train and motivate your staff on the correct use and fit of hearing protection.

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SAPEMA Member

# Mental health awareness: avoid disruption in the workplace

Mental Health Awareness Month in October provides an ideal opportunity to intensify education about this invisible illness, writes Dr Nivisha Parag, Head of School: Healthcare Management Studies at Regent Business School

Mental health affects the lives of individuals, families, co-workers and the community. It includes emotional, psychological and social well-being. The World Health Organisation (WHO) says biopsychosocial, cultural, economic, political, environmental factors, and community support play a vital role in determining a country's morale.

Mental health stigma is a cluster of negative attitudes and beliefs that motivate the general public to fear, avoid and discriminate against people with mental illness, creating barriers to seeking help. In addition, other equally urgent health crises receive the bulk of healthcare resource allocations.

The 2021 Mental State of the World report identified South Africa (SA) as the lowest-ranked country based on mental wellbeing. The study uses the Mental Health Quotient (MHQ), a snapshot of your self-perception along various dimensions of mental function that determine your mental wellbeing.

Close to 12 000 South Africans were surveyed, comparing them to 223 087 people across the globe, and identified as having the lowest MHQ.

South Africa also has the highest percentage of people who are 'distressed' or 'struggling'.

## AFFECTS OF COVID ON MENTAL WELLBEING

The COVID-19 pandemic accelerated the intensity of the insidious mental health pandemic. The global prevalence of anxiety and depression



Dr Nivisha Parag, Head of School: Healthcare Management Studies at Regent Business School

**Mental health disorders are characterised by a combination of abnormal thoughts, emotions, behaviour and relationships.**

increased by 25% in 2021, and by a massive 36.4% in South Africa alone.

Even pre-Covid, one in six South Africans suffered from anxiety, depression, or substance abuse disorders, yet only 27% of sufferers ever receive treatment.

Grief during Covid as well as loneliness, fear of infection, bereavement and financial woes were major mental stressors.

Among health workers, exhaustion was a trigger for suicidal thinking. However, major disruptions in life-saving services for mental health, including suicide prevention, resulted in positive moves towards remote support platforms.

## LIVING WITH A MENTAL DISORDER

Mental disorders vary in severity, with the absence of physical symptoms driving the stigma. Several African cultures deem individuals suffering from mental illnesses to be possessed by demons, or simply mad.

Disorders are characterised by a combination of abnormal thoughts, emotions, behaviour and relationships. Most of these disorders can be treated effectively, enabling sufferers to live normal, productive lives.

## DISRUPTION IN THE WORKPLACE

Mental health problems have deleterious impacts on workplaces when poorly managed. If ignored or not properly handled, can lead to increased absenteeism, reduced productivity, and unnecessary costs to both employers and employees.

According to the South African Federation for Mental Health (SAFMH), workplace factors that may contribute to poor mental health include workload, certain tasks and roles, recognition and control, working conditions, leadership, communication and interpersonal relationships.

Exemplary leadership is crucial to support employee wellness, reduce stigma in the workplace, and successfully sustain employee assistance efforts. A culture promoting awareness, connection, and transparency about mental health will reduce stigma in the workplace. This will have positive returns, including increased productivity, retentions, and decreased costs to the employer, including disability costs.

The bleak employment landscape adds further risks of mental illnesses.

Safe environments must be provided for employees to share their feelings and all employees must be educated about mental health and self-care.

A platform for employees to access to help must be also prioritised.

## STEPS TO TAKING CONTROL OF YOUR MENTAL HEALTH

Practice mindfulness – Pay attention to the present moment. Stop and breathe.

Identify triggers and learn how to manage them better. Take control of your life – work balance.

Exercise. Take regular walks and move around at work. Meditation, breathing exercises and yoga are good relaxation techniques too.

Stay away from food triggers such as nicotine, sugar, caffeine and processed foods.

Sleep well and be generous about the hours.

Start a journal – externalising helps clear your head and focus on solutions instead of problems.

Learn something new or revisit an old hobby.

Limit screentime and avoid distressing news and social media lures.

Maintain healthy relationships and meaningful engagements. Talk about your feelings regularly with people you love and trust.

Join a wellness organisation, do good for others, be grateful and reap the positive rewards on your mental health.



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# Understanding noise-induced hearing loss a little better



Dr Marinda Uys –  
Eduplex Training  
Institute

By 2050 nearly 2.5 billion people are projected to have some degree of hearing loss and at least 700 million will require hearing rehabilitation.

Over 1 billion young adults are at risk of permanent, avoidable hearing loss due to unsafe listening practices.

Loud noise is one of the most common causes of hearing loss and is often referred to as noise-induced hearing loss. If we can educate ourselves about the effects of loud noise on hearing, we can prevent potential hearing loss due to noise exposure.

Noise refers to any sound that is not pure but rather a mixture of different and unwanted sounds. Noise is all around us – in traffic, when gathered at a big sports stadium or working at a building site. Noise can be measured in terms of intensity and duration – these factors contribute to damage to the hearing system.

The louder the noise, the more damage it can cause to the hearing system. Exposure to more than 85 dBA may become dangerous. See Figure 1 for a few examples of sounds with the approximate intensity levels.

Duration of noise can also affect the degree of the hearing damage – the longer you are exposed to the

loud noise levels, the more damage it can cause. An important term regarding the duration is the 8-hour time-weighted average exposure level. This refers to the average exposure level of noise that an employee is exposed to in a normal 8-hour working day.

Seeing that noise start to cause damage at an intensity of 85 dBA, the time of exposure to 85 dBA of continuous noise should only be 8-hours. If a person is exposed to 85 dBA for longer than 8-hours, the noise will start damaging the hearing system.

For every 3 dB increase in the noise level, the allowed time for exposure will be halved. Look at the examples in Figure 2.

These results refer to continuous noise, but there is also impulse noise to be considered. Impulse noise can be a once off loud sound such as an explosion that happens once. It can also be noise coming in bursts (caused by using a hammer for instance). An impulse noise can cause immediate damage to the hearing system and can even be more dangerous than continuous noise exposure.

When one has a noise-induced hearing loss, the cochlea (an organ inside the inner ear) is affected as the hair cells inside the cochlea get damaged. It is expected that the hearing loss will get worse over time as the functioning of these hair cells in the cochlea slowly deteriorates until they die completely. Once these hair cells are destroyed, they can not grow back.

## COMMON SYMPTOMS

Common signs that one might have a noise-induced hearing loss, include:

- Inability to hear high-pitched sounds like birds singing
- Muffled or distorted speech
- Difficulty hearing speech clearly in the presence of background noise for example in a restaurant
- Tinnitus (ringing or buzzing sound in the ear/s)

When experiencing any common symptoms one should visit an audiologist for a diagnostic hearing test. After the test is performed, the audiologist will be able to inform you about the nature and degree of your specific hearing loss.

Although noise-induced hearing loss can not be cured, in most cases it can successfully be treated with hearing aids.

Occupational noise is not the only type of noise that can cause a noise-induced hearing loss. Other sources of noise that can cause noise-induced

Figure 1. Examples of sounds with the approximate intensity levels.

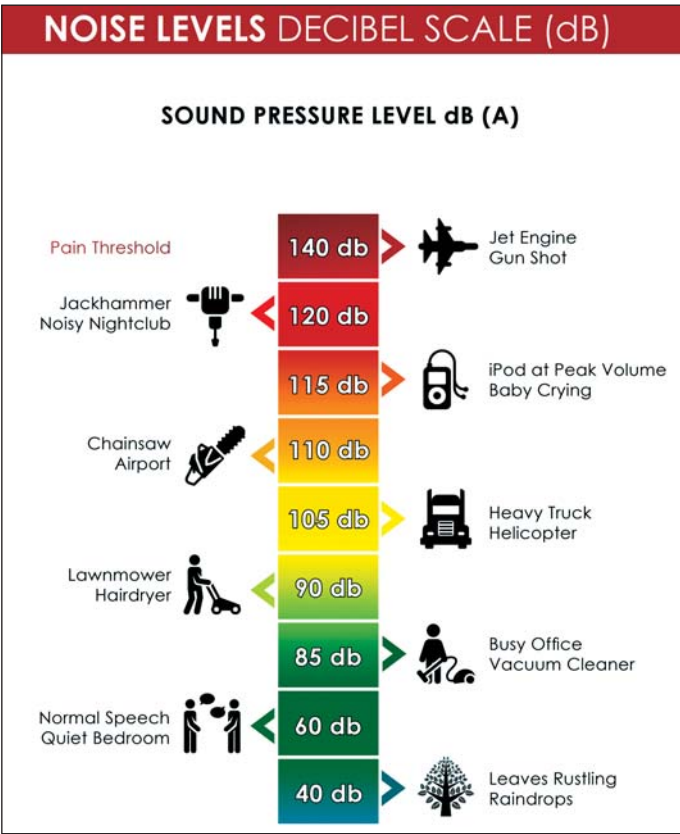
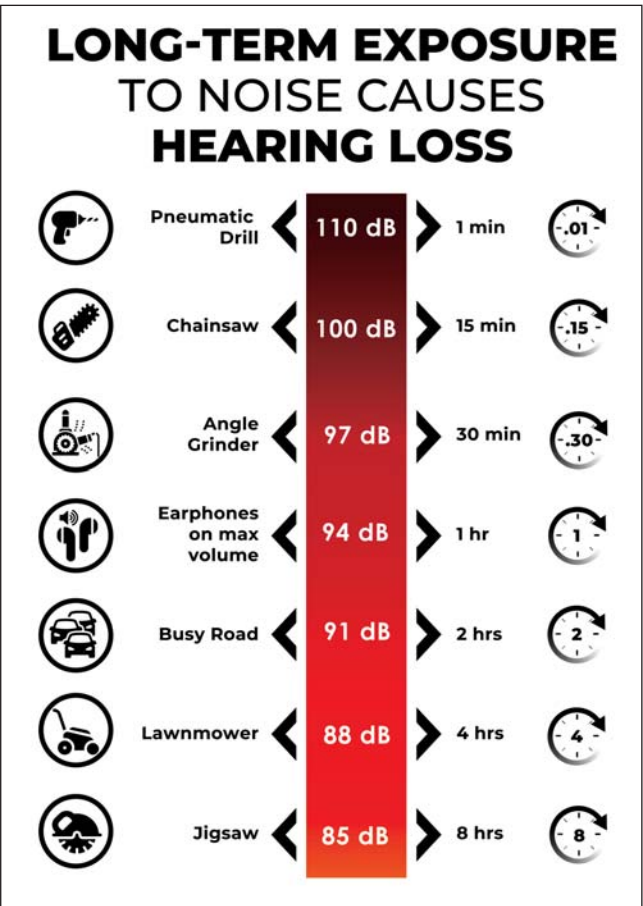


Figure 2. Examples of noise levels exposures



hearing loss include wood working machinery, chain saws, motorcycles, loud music and shooting.

To prevent noise-induced hearing loss in the workplace, it is important to know what noise levels employees are exposed to.

Noise measurements can be done throughout the workplace to determine if noise levels are dangerously high and should include:

- Identification of areas where noise levels are high, and employees are likely to be exposed to damaging levels of noise.
- Identification of machines and equipment that produce harmful noise levels.
- Identification of employees who may be at risk of harmful noise exposure.
- Options to control noise or reduce exposure to noise.

Also ensure that you:

- Wear hearing protection when working in noisy areas or during recreational activities like shooting or doing woodwork.
- Avoid playing music at loud levels especially with iPods in gymnasiums.
- Help to create awareness and educate small children about protecting their hearing.

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## Food safety: the enormity of concerns

Food contamination resulting in foodborne diseases is a severe public health problem across the world affecting thousands annually resulting in illnesses, death and loss of productivity.

According to WHO an estimated 600 million people, that's almost one in 10 people in the world fall ill after eating contaminated food and 420 000 die every year, resulting in the loss of 33 million healthy life years.

Every year, 110 billion USD is lost in productivity and medical expenses resulting from unsafe food in low- and middle- income countries.

Children under five years of age carry 40% of the foodborne disease burden, with 125 000 annual deaths.

Foodborne diseases impede socio-economic development by straining health care systems and harming national economies, tourism and trade.

### PREVENTION

From farming through to eating, food needs to be kept safe. Many variables are involved to achieve this ranging from food handling, transportation, storage, processing, employee training, health assessment for food handlers and much more. Unfortunately these may never be realised if we do not have the right leadership commitment towards the production of safe food for public consumption.

Safe procurement is one of the key Golden Rules of Vision Zero, but sadly this is a key area often not applied when considering food safety.

Supply chain should be at the heart of food safety processes. Procurement managers must know how the raw foods they receive are processed and stored before arriving their facilities.

Raw materials stored outside their control limits will without a doubt lead to possible food compromise. And often, food is received that has been stored outside of their control limits.

If supply chain is included in our food safety processes and if we carry out routine unannounced inspections on our suppliers, these foods would not



Ehi Iden is the President of OSHAfrica and Occupational Health & Safety Management Consultant in Africa.



find their way into our storage. It is essential that this be done randomly. Their facilities are a critical part of food safety processes and yet how many times are the facilities of vendors ever visited?

### EGGS AS AN EXAMPLE

The standards say raw eggs which are classified as part of high risk foods should not be washed, but many may ask, why not? Why should we not wash eggs? Not only that, most times we do not know how these eggs have been handled before they get to us.

Washing eggs may transfer harmful bacteria such as salmonella from the outside shell to the inside of the egg.

Eggs have a natural coating called the cuticle which helps keep bacteria out of the egg, and eggshells are porous, so by washing them, that natural barrier may be washed away.

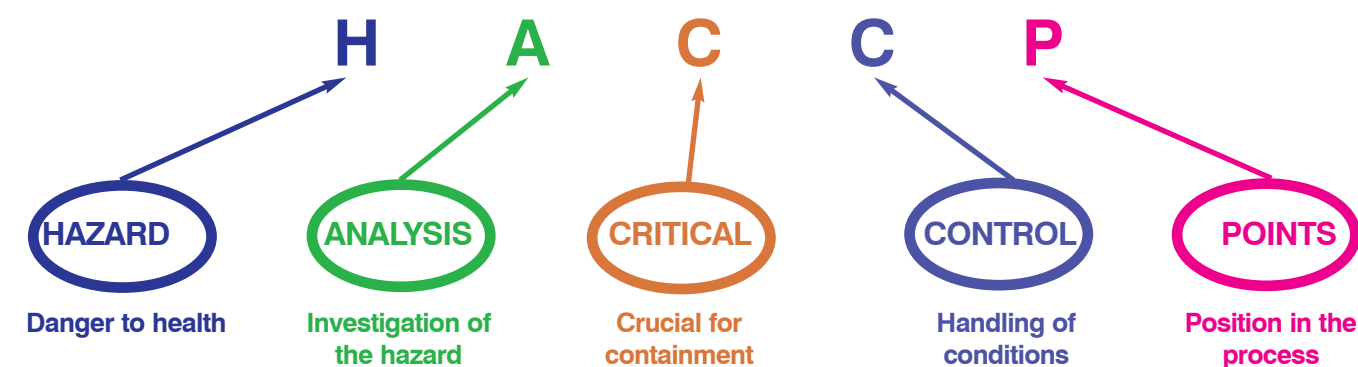
Eggs should be cleaned before the point of collection and not afterwards. Transportation and storage of eggs is also important, both in a temperature controlled environment.

### FOOD SUPPLIERS AND THEIR ROLE

The whole essence is, we should endeavour to incorporate our food suppliers into our overall food safety plan including, but not limited to processes, training and inspection.

Employers in the food industry may routinely ensure their employees undertake food handlers health assessments twice a year, but do they also ensure their food suppliers commit to this process?

This may be the problem and not even intentionally. Whereas employees may be trained in food safety, the vendor at the beginning of the food chain may not know what processes they have to follow. They may not be sufficiently trained. If this is the case, they will cause food contamination capable of harming thousands without fully understanding the harm they may be causing.



**Food Safety and Hazard Analysis and Critical Control Point (HACCP)** is a management system meaning management must get involved, not by lip service but by total commitment through time, money and resources.

## Prevention of dangerous bacterial contamination in chickens

Sometimes by trying to remove germs from food, we can actually increase the amount of bacteria in the food. This has been seen with campylobacter in produce such as uncooked chickens.

When I was working at Marks & Spencer's (M&S) Head Office in 2014, the contamination of chickens with this sickly bacterium became a huge issue of national concern. It followed from the Food Standards Agency (FSA) setting campylobacter reduction targets for food retailers in the UK in 2010, but by 2013, these targets were woefully not met. It was at this point that M&S set out a five-point campylobacter reduction plan.

To put things in to context, campylobacter is a major international cause of gastroenteritis causing approximately 96 million cases each year.<sup>1</sup> It is the leading cause of food poisoning in the UK and half of its annual 630,000 cases are estimated to be acquired from food.<sup>2</sup> Its reported prevalence in children under the age of five years across Africa ranges from 2% in Sudan to 21% in South Africa. However, as studies have shown, the African prevalence is "handicapped" by the under-reporting of diarrhoeal incidents, ineffective monitoring and surveillance programmes of foodborne illnesses and agents of diarrhoea not always including campylobacter.<sup>3</sup>

People become ill from the bacteria by eating contaminated – and often uncooked or under-cooked – food, drinking contaminated water or having contact with infected animals. It can also be passed to humans via cross contamination of using the same chopping board or knives for raw poultry, meat or vegetables without washing properly between use. Even one drop of juice from raw poultry or meat can have enough Campylobacter in it to infect a person.<sup>4</sup> Symptoms of infection include diarrhoea (frequently bloody), abdominal pain, fever, headache, nausea, and/or vomiting. The symptoms typically last 3 to 6 days.<sup>5</sup>

M&S' five-point plan to reduce campylobacter spreading from poultry to human consumers included: no thinning flocks, better on-farm welfare, blast-chilling before packing, printing bird-specific cooking instructions on the packs for customers, and educating consumers not to wash their chickens. By 2015, M&S passed the FSA's targets to reduce the bacteria in food produce, where many other retailers and supermarkets fell short. The Director of Food Technology at M&S said at the time, "It's a really difficult bug and its very adaptive and evolves to suit its environment quickly. The methods that have worked on reducing salmonella, such as vaccines, don't work on campylobacter as its cleverer than that."<sup>6</sup>

M&S incentivised farmers to rear their flocks to higher welfare standards and to stop thinning their



Amy Gower, PR Consultant and former Press Officer at Marks & Spencer, UK

flocks as this can stress the animals and break biosecurity cordons. M&S then looked at slaughter and processing and found that blast-chilling would help reduce campylobacter levels further.

To address the final two points which focused on the consumer's handling of the poultry, M&S brought in a new product: roast-in-the-bag birds. This removed the need for consumers to wash the chickens and reduced the risk of cross-contamination from the chickens to other kitchen produce via utensils and the like.

Although it's almost impossible to bring the campylobacter incidence to 0%, the initiatives that M&S put in to practice did indeed reduce the rates of infection from the bacteria.

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### CONSUMER ADVICE FROM THE UK'S FSA<sup>7</sup>

Chicken is safe if consumers follow good kitchen practice:

- **Cover and chill raw chicken.** Cover raw chicken and store at the bottom of the fridge so juices cannot drip onto other foods and contaminate them with food poisoning bacteria (e.g. campylobacter)
- **Don't wash raw chicken.** Thorough cooking will kill any bacteria present, including campylobacter, whereas washing chicken can spread germs by splashing
- **Wash used utensils.** Thoroughly wash and clean all utensils, chopping boards and surfaces used to prepare raw chicken
- **Wash hands thoroughly with soap and warm water, after handling raw chicken.** This helps stop the spread of campylobacter by avoiding cross-contamination
- **Cook chicken thoroughly.** Make sure chicken is steaming hot all the way through before serving. Cut into the thickest part of the meat and check that it is steaming hot with no pink meat and that the juices run clear.

# Solar panel installation and the OSH Act

As the South African government looks for solutions to the country's electricity crisis, significant emphasis has been placed on households and businesses investing in solar panels as a way of reducing the pressure on the national power grid. However, while the drive towards harnessing solar power should be supported, there are certain key regulatory and legislative considerations that must be taken into account before investing in solar panels. Running foul of the law could prove to be a very costly exercise.

Firstly, it is important to remember that the installation of solar panels is governed by the National Building Regulations, Occupational Health and Safety (OHS) Act, and the Construction Regulations, which are the three main pieces of legislation applicable to this process. The installation of solar panels is deemed to be construction work, meaning that there are certain legal obligations on the contractor carrying out the work, as well as on the client – the homeowner/business – that must be adhered to.

As solar panels are typically installed on top of a roof, most of the installation work is undertaken at height, placing the onus on the homeowner/business to appoint a contractor that has the necessary competencies, training and resources to carry out this type of work safely.

## WORKING AT HEIGHT

Working at height also means that safety is a key consideration. The OHS Act requires people who work at height to be certified medically fit for this type of work. Additionally, the contractor must be able to prove that his workers have undergone the required training for working at heights and for installing solar panels.

### 1. PPE

The contractor must also ensure that safe access to the roof is provided, along with the required Personal Protective Equipment (PPE), such as safety harnesses which must be attached to hook points, or lifelines.

### 2. Fall arrest equipment

Homeowners should consider that house roofs typically have no secure attachment points for workers to hook onto with their fall arrest equipment. This therefore requires a temporary system to be installed, which must be done by a competent person – qualified engineer with adequate training and experience – who must design these hook-on points or lifelines. This would be termed as temporary works, typically done by engineers who assess and determine how attachment points can be installed.



By Otto Botha, Managing Director at WACO

### 3. Scaffolding

More often than not, the installation of solar panels requires the erection of some form of scaffolding which triggers a few requirements in terms of the Construction Regulations. A works designer would be required to ensure that the scaffold is erected to standard, specifically when it is a special scaffold that has to be designed, inspected, checked and signed off for safe use.

## ROLE OF TEMPORARY WORKS

The role of temporary works is to ensure workers can get themselves and the equipment they are installing safely up and down the structure they are working on. This includes the scaffolding erected to be compliant with Construction Regulations i.e. checked, designed and signed off by a competent person. When a scaffold that is higher than 60m or used in unconventional ways, an engineer must design, do a drawing and sign off on the temporary structure.

Ordinary scaffolds are deemed to satisfy the standard, which means they do not need an engineer to design or provide a drawing.

## NON-COMPLIANCE AND RESPONSIBILITIES

While the regulations around solar panel installation may seem daunting, non-compliance could be costly. In terms of the OHS Act, it is the legal responsibility of every employer/homeowner to ensure the Act is complied with by every person in the process. Failure to do this could result in high and unnecessary fines.

Currently, changes to the OHS Act are on the cards and will provide for fines of up to R5 million or five years in prison for various contraventions, as well as the issuing of spot fines of R50 000 per contravention, applicable to both the client and contractor.

To avoid expensive mistakes, it is important to use reputable contractors, who have been in business for at least two years and have a proven track record. References should be requested and checks put in place to ensure they are legitimate.



# ACHASM Quarterly Update



Claire Deacon PhD (Constr. Mgt), MCur OH, BSc Med (Hons) Ergonomics

Executive Director  
ACHASM



With another year almost over it has been somewhat of a year of adjustment and reflection. COVID seems almost surreal. We adjusted to what was called a new reality, and on reflection I would believe that the stress and overall psychological effect of the enormity of the adjustments having to be made across the world.

The well-being of workers is clearly an aspect that is being increasingly addressed. The construction sector is renowned for temporary and contractual types of employment. Everything is piecemeal. Stress is experienced at every level. It's not a white collar phenomenon. As we come to the end of 2022 our health and safety (H&S) programmes need to consider the workers that we are likely to encounter in the new year, and perhaps remember that empathy is a quality that shows understanding and everyone is trying to survive in the sector we have chosen to work in.

ACHASM has also experienced change. We are a recognised voluntary association with the emphasis on voluntary. We, like all businesses have recognised the hardships and difficulties of past and current members. COVID did not allow us to hold our usual annual conference/workshop but the Gqeberha Chapter under the leadership of fellow Director Prof John Smallwood, William Pierce-Jones and Luvuyo Manjo, has prevailed. Monthly meetings started tentatively, and are growing in attendance. The meetings are hybrid, however the

philosophy is that networking and physical presence is important. We are about to relaunch the Cape Town Chapter under Yaseen Francis, and soon the East London Chapter under Liza White. All our meetings are free of charge and we are very grateful to those who have given of their time and believe in ongoing support and development of our fellow H&S practitioners.

Other areas of involvement include the Built Environment Professions of South Africa (BEPISA) that has become the major stakeholder for the Council of the Built Environment (CBE) relating to professional issues. We represent BEPS on the CBE Transformational Committee for H&S, gender and Universal Design. We have a very vocal presence at the South African Council for the Project and Construction Management Professions (SACPCMP). We have continued to support members, indeed anyone with issues being experienced with registration issues.

ACHASM remains through our members and their involvement a relevant voice in the sector and among our professional colleagues.

2023 promises to be a year of growth and more change, of that I am certain. On behalf of my fellow directors, thank you for your involvement, however small. It makes the world of difference.

To find out more about ACHASM visit <https://www.achasm.co.za>

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# OH&S planning - organisation roles, responsibilities and authorities

Employers and top management should exercise due diligence and put in place a system which ensures that the responsibilities and authorities for relevant roles within the Occupational Health & Safety (OH&S) management system are assigned and communicated at all levels within the organisation, and maintained as documented information.

Top management is ultimately responsible for the OH&S management system, even if the day-to-day decisions related to occupational health and safety are delegated to others.

What is delegated and to whom should be clearly and unambiguously communicated and documented so that everybody accepts, acknowledges and understands who is responsible for what task in his / her portfolio.

Top management should assign the responsibility and authority for:

1. Ensuring that the OH&S management system being implemented in the workplace duly conforms to the standard requirements of:

ISO 45001 Occupational Health & Safety Management System,

ISO45002:2019 General guidelines for the application of

ISO 45001 Occupational health and safety management systems - Part 2 Risks and opportunities,

ISO 45002:2018 General guidelines for the application of ISO 45001 Occupational health and safety management systems - Part 3 Guidance on accident investigation,

ISO 45003:2020 General guidelines for the application of ISO 45001 Occupational health and safety management systems - Psychological health and safety at work - Managing psychosocial risks,

ISO 6385, Ergonomic principles in the design of work systems,

ISO45005-2020 Occupational health and safety management - General Guidelines for safe working during COVID-19 pandemic,

ISO 7933, Ergonomics of the thermal environment – Analytical determination and interpretation of heat stress using calculation of the predicted heat strain,

ISO 10075-1:2017 Ergonomic principles related to mental workload. Part 1: General issues and concepts, terms and definitions,

ISO 10075-2, Ergonomic principles related to mental workload Part 2: Design principles,

ISO 10075-3, Ergonomic principles related to mental workload - Part 3: Principles and



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requirements concerning methods for measuring and assessing mental workload

2. Reporting on the performance of the OH&S management system to top management.

## CONSIDERATION GIVEN TO SYSTEMS ALREADY IN PLACE

Resources can be limited, so opportunities should be sought out to integrate OH&S responsibilities within existing functions of the organisation, such as manufacturing, facilities management, purchasing, and human resources.

If other management systems are already in place, such as quality, environment, energy or food safety, synergies may exist where there are similar roles and responsibilities. This will enhance ownership of OH&S management across the organisation and potentially create efficiencies.

ISO 45001 requires that the responsibilities and authority of all persons who perform duties that are part of the OH&S management system be documented.

These can be clearly described and included in:

- OH&S management system procedures;
- Operational procedures and process maps;
- Project and/or task descriptions;
- Job descriptions;
- Induction training packages.

Such documentation can, among others, be required for the following personnel:

- Management at all levels in the organisation, including top management;
- Safety committees/safety teams;
- Process operators and the general workforce;
- Those managing contractors;
- Those responsible for OH&S training;
- Those responsible for equipment operation and maintenance;
- Those responsible for facilities management;
- Employees with OH&S qualifications, or other OH&S specialists, within the organisation.

## ROLES AND RESPONSIBILITIES

Care and focus should be taken with the clarification of responsibilities at the interfaces between different functions (e.g. between departments, between different levels of management, between workers, between the organisation and contractors, between different trades and between the organisation and its neighbours).

Workers should be enabled to report about hazardous situations so that action can be taken.

Those stakeholders who are involved in the organisation's HSE management system should have a clear understanding of their role, responsibility(ies) and authority(ies) for achieving the intended outcomes of the HSE management system.

While top management has overall responsibility and authority for the HSE management system, every person in the workplace needs to take account not only of their own health and safety, but also the health and safety of others.

Top management being accountable means being answerable for decisions and activities to the local governing bodies, legal authorities and, more broadly, its interested parties. It means having ultimate responsibility and relates to the person

who is held to account if something is not done, is not done properly, does not work or fails to achieve its objective.

Workers should be enabled to report about hazardous situations so that action can be taken. They should be able to report concerns to responsible authorities as required, without the threat of dismissal, disciplinary action or other such reprisals. The specific roles and responsibilities identified in Letter of Appointments may be assigned to an individual, shared by several individuals, or assigned to a member of top management.

A RACI chart - also known as a responsibility assignment matrix - is a simple roles and responsibilities diagram used in project management. A RACI chart defines whether the people involved in a project activity will be **Responsible**, **Accountable**, **Consulted**, or **Informed** for the corresponding task, milestone, or decision.

A RACI chart is a matrix of all the activities or decision-making authorities undertaken in an organisation set against all the people or roles.

It is used to clarify employee roles and responsibilities for each task, milestone and decision that takes place throughout a project. The chart is designed to ensure clear communication and smooth workflows across all parts of a team.

Constant communications to mitigate risk of communication barriers or mis-communication within systemic protocols may pose conflicts, bias or even an incident due to execution with minimal information.

Audit and performance evaluation mechanism can be established for assessing the effectiveness on the OH&S management system by focusing on the element of organisational roles, responsibilities and authorities.

| EXAMPLE OF RACI CHART       | Person A | Person B | Person C | Person D | Person E |
|-----------------------------|----------|----------|----------|----------|----------|
| Audit existing content      |          |          |          |          |          |
| Prepare technical documents |          |          |          |          |          |
| Approve content             |          |          |          |          |          |
| Meeting protocols           |          |          |          |          |          |
| Negotiate with customer     |          |          |          |          |          |
| Support customer            |          |          |          |          |          |
| Prepare contract            |          |          |          |          |          |
| Sign contract               |          |          |          |          |          |



## ARE YOU MEETING ALL OCCUPATIONAL AND ENVIRONMENTAL CHALLENGES?

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## PREVENTION IS BETTER THAN CURE!

## Four injured in a school classroom chemicals demonstration fire



Compiled by  
Leighton Bennett,  
SFA Chairman for  
the OSHPC



Recently, some three USA school classroom/lab flammable chemical demonstrations have ended in a fire with the injured teachers and learners in hospital.

Consequently, on 22 October 2022, the US Chemical Safety Board issued a safety bulletin titled, "Key Lessons for Preventing Incidents from Flammable Chemicals in Educational Demonstrations." (<https://www.csb.gov>)

It is understood that the fire that occurred on October 12 in a classroom at Dinwiddie High School in Dinwiddie County, Virginia, during a demonstration using methanol, a highly flammable liquid.

Apparently, this fire incident occurred during a classroom demonstration of the flames produced by burning a flammable liquid, usually Methanol, which was poured directly on the flames from a beaker or bulk container.

This led to a flame flashback to the methanol container and its generated methanol vapours that led to the burn injuries to the surrounding observers.

The CSB's safety bulletin provides four key lessons learned from these chemical demonstration accidents:

- Do not use bulk containers of flammable chemicals in educational demonstrations when small quantities are sufficient. (\* consider using a small squeeze and pour-tube bottle to reduce

hazardous vapour generation – comment by the writer).

- Implement strict safety controls when demonstrations necessitate handling hazardous chemicals – including written procedures, effective training, and the required use of appropriate personal protective equipment for all participants and observers/learners.
- Conduct a comprehensive hazard review prior to performing any educational demonstration.
- Provide a safety barrier between the demonstration and audience.

CSB Interim Executive Authority Steve Owens said: "Classroom demonstrations involving flammable chemicals can be important teaching tools, but they must be done safely. We urge school administrators and teachers to review and follow the CSB's safety lessons for these kinds of demonstrations so that no one is harmed by these preventable accidents."

Of interest note: The CSB investigate chemical and fire incidents and provide access to many incident-investigation U-tube presentations of their investigations with suggested precautionary measures on their <https://www.cbs.gov> web site - then tab "Video Room".

There are some 97 videos available, many are lessons learnt animated incident investigation videos.

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## Public facilities and the spread of disease

The importance of cleanliness and hygiene in public places such as toilets whether at work, restaurants, shopping centres reached a new level during Covid.

I am the OCD one in the family although I don't describe myself as a germophobe. But as a safety officer, I am aware of things around me. And many public toilets are in a condition bad enough to give any health and safety practitioner an apoplexy.

Certain things in a badly maintained toilets are an immediate give away including:

1. Bad smells.
2. Conditions of basins and taps.
3. Dryer or paper towels
4. Condition of the floor.
5. Most important; condition of the toilet and urinal.

### HIDDEN DANGERS

1. **Smell:** This should be the first give-away. Many who do not clean regularly use air fresheners to disguise unsanitary smells. Whereas others use a sanitising spray which not only makes the area smell good but sanitises it at the same time.
2. **Basins and taps:** Look out for dirt around these areas. A breeding ground for bacteria, therefore not fit to clean hands.
3. **Hand dryers and paper towels:** Dryers must always be clean. According to a Harvard University study, air samples taken from dryers and the surrounding air showed bacteria growing fast than air where there were no dryers. Therefore using the dryer you will likely have more bacteria on your hands after using the dryer than before. Manufacturers have been urged to use more filters to prevent the spread of bacteria via the dryers, however this only reduced the spread by about 75%.
4. **Condition of the floor:** A dirty wet floor is a sign that cleaning is not regular. Wet floor are also health and safety hazards. A slip and fall and the owner of the facility will be liable for loss or damage in the event of an injury.
5. **Condition of the toilet:** When you see a dirty toilet, run. Do not use it, do not touch it. Never use an unflushed toilet or one that is not clean. The chances of being covered in bacteria is high. A toilet with no seat and no cover is equally bad.
6. **Urinal:** Urinals must always be clean.

### SPREAD OF BACTERIA

The bacteria in a bathroom are released when a toilet is flushed and the lid not down. Flushing sends a spray into the environment and with it bacteria from the toilet. The lid must therefore always be down when a toilet is flushed.

Some bacteria are responsible for the bad odours



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in toilets and bathrooms, another reason to clean regularly

If toilet seats according to scientists are one of the dirtiest places or objects in your house, it is unthinkable to imagine what is in a toilet seat in a public place.

### DISEASES SPREAD FROM TOILETS

**E-coli** is spread by fecal-bacteria that becomes airborne. It is also found to live a long time on toilet seats. Mostly toilet seats with frequent use, such as on passenger ships.

**Shigella Bacteria** is spread by a person who did not wash his/her hands after using the toilet. This can result in many people being infected, food being contaminated can lead to severe illness. This can be prevented if a toilet is sanitised and the person's hands are properly washed..

**Streptococcus** is a skin infection also known as a flesh-eating bacterium. Although this infection is always a possibility, it is seldom seen.

**Staphylococcus** stays on the seat for at least two months and can enter your skin within seconds. The chances of getting it from a toilet seat are slim. There is a higher chance of getting it from a dirty cell phone.

**Influenza**, the **common cold** or the **flu**, even the **corona virus** can be spread in a bathroom and on toilets seats.

### PREVENTION OF INFECTIONS IN PUBLIC TOILETS AND AT HOME

- Toilets needs to be cleaned on regular basis and disinfected.
- Make sure you leave the toilet clean after using.
- Report toilets facilities to management that are not up to standard.
- People must be educated to wash their hands after toilet use to prevent the spread of unwanted bacteria or viruses.
- Keep wipes or a sanitisers with you to clean the seat, before using.
- At home, use a sanitising spray and clean the toilet after use.
- Wash hands thoroughly.
- Good ventilation helps prevent the spreading of germs and bacteria.

Staying healthy, cuts both ways - management of public toilets and the public are both responsible to keep these places clean.

Management's task is to ensure the facilities are cleaned often and sanitised and the public to keep the place neat and tidy as they found it.

# Developing a safety working procedure relative to a job-task

Good health and safety practices require that Safety Working Procedures (Method Statements) be developed and implemented for risk threat assessed job-tasks. Many think the identification of the risks in a HIRA is adequate but that does not guide a worker how to perform the job-task safely and efficiently. A Safe Work Procedure (SWP) or Method Statement (MS) is required for that purpose.

Essentially, we need to perform a risk assessment on each step of the job-task process. A normal HIRA does not do that as it usually looks at the overall activities and not the actual job-task steps. There are two aspects involved in performing a job-step safe working procedure. Firstly, the actual sequence of the job-task steps must be identified and listed as the steps that the worker must DO to perform the job-task safely. Secondly, for each job step identified what knowledge and what health and safety precautions need to be identified and implemented to perform the job-task safely. If a worker does not understand the KNOW aspects of the job-task steps, an unsafe job-task short cut is likely to result in an incident.

Let us consider a worked example: What are the DO job-task steps, to safely access to a 5m high building roof using a ladder, with some of the KNOW points (usually safety aspects) also mentioned?

1. Do the workers who are required to access the roof valid work and heights have medical assessment certificates and are they Work at Heights (W@H) trained, to at least a W@H level 1 (Unit Standard ID 229998)? Know that this is a Construction Regulations legal requirement (e.g. Medicals CR7.1.g & 10.2.b and fall risk training CR10.2.c)

2. Has the fall protection safety equipment been inspected against a register or checklists by a suitably competent person, like a W@H Level 2 (US IDs 229998 plus 229995)?

3. Has a suitable length the ladder been selected to be used for access to the 5m high roof area been inspected against a register? Know, to have a +1m length above the roof landing level, to act as a support handrail during the ladder to/from roof transfers.

4. Has the weather condition (wind, rain, lightning, wet roof, etc) been assessed to ensure safe roof height working conditions? Know what the weather risks are when working at heights, including dehydration, sun burn and sun stroke, hot metal surfaces, etc.

5. Has the level 2 supervisor held and recorded a pre-task team meeting with the work team so that all are familiar with what roof work is to be done, the fall protection (plan) requirements and fall



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safety procedures, and what is to happen if there is the need to perform a fall rescue.

6. Has the roof access ground area been safely barricaded off?

7. Did the supervisor check that all the safety harnesses are correctly donned (worm and coupled up) by all the intended roof workers?

8. Has all the equipment (hand and power tools, ropes, etc) to be used on the roof been inspected and the method to safely raise and lower such equipment to and from height been decided and planned?

9. Has the ladder been correctly erected (i.e. Know the 1:4 ratio and to 1m above to landing) and is physically held as the first climber climbs, using a double safety harness lanyard attachment process to avoid falling? Know about the 3-points of contact when climbing.

10. Did the first climber securely lash (rope tie) the ladder to a building structural member or install a safety anchor into a steel member for ladder lashing purposes? KNOW if the ladder lashing is not secure then the physical ladder support holding must continue to ensure the ladder safety and stability.

11. Did the first climber/supervisor visually assess and inspect the roof integrity and load capacity condition before and as climbing onto the roof landing area? KNOW that rusted, bent or damaged roof sheets, sheets on wide spaced purlin roof support members, lighting panels, Asbestos/ACM, polycarbonate or similar roof sheets, etc are fall risk hazards, needing site-specific fall risk safety methods to be implemented and discussed with the roof work team members. Roof work team to know what the safety work procedures are to safely manage working near these fall risk hazards.

12. Were any existing safety anchors (with or without safety lifelines) already installed inspect their condition to restrain the anticipated fall risk incident load? KNOW that if uncertain the safety anchor points must be load tested to at least a 6kN load.

13. Was the job-task fall protection plan requirements implemented? Know that a Fall Restraint or Fall Arrest prevention methodology could be used, where the knowledge of the two fall prevention methods is known and can be applied.

14. All roof workers to ensure that where safety anchors (and safety lifelines) are installed their safety harness lanyards must be properly attached to limit a fall risk. KNOW that the potential fall distance ( Fall Factors 0, 1 and 2) varies in relation to the attachment level where the harness attachment is done ( i.e. attachment above head, at the waist or at foot level ).

15. Where no safety anchors are installed, safety

anchors need to be installed in accordance with the Fall Protection Plan requirements. KNOW how to safely install a bolted or cemented safety anchor point.

16. Ensure either temporary or permanent safety lifelines are correctly attached to the installed safety anchors to provide safe access to the work roof work areas. KNOW the difference between the temporary and permanent safety lifeline design and installation methods. Know that Reticulating Safety Lifelines could be used to provide a safe fall prevention access to a roof area but know about the pendulum fall risk and the safety measures necessary when using reticulating safety lifelines.

17. At this point the actual roof work is performed as per the job-task requirement (e.g. scrape off rust and paint blisters, prepare the metal surface for repainting, repaint the roof, etc),

18. Once the job-task work is completed then detail the roof area withdrawal job-task steps back to ground level. KNOW that some of these withdrawal steps are previous mention access steps performed in reverse.

At this point, the above partial worked example should have provided a clear insight as to what a step-based job-task safety assessment involves and how the DO (job-task steps) and KNOW (OHS understanding) aspects feed directly into developing & documenting a Job-Task Safety Working Procedure for both training and compliance monitoring purposes (e.g. Continuous Risk Assessment and/or for Planned Job Observation activities).

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# Monkeypox – is it a national health emergency?

Monkeypox has spread to over 70 countries with 57,000 cases and at least 22 deaths. The World Health Organization has now declared it a global health emergency.

On August 4, 2022 when the White House declared it a public health emergency over 6600 cases had been reported in the United States, up from under 5000 the previous week.

Monkeypox is a virus-like smallpox. Those who catch the virus usually experience fever-like symptoms, followed by red lesions on the body that can raise and develop puss. Those at highest risk for monkeypox appear to be gay and bisexual men. There are between 1.6 and 1.7 million Americans in this high-risk group, according to Health and Human Services Secretary Xavier Becerra.

The Jynneos vaccine being distributed to protect against monkeypox can prevent severe symptoms and is primarily recommended for those with the greatest risk of catching the virus. By August, 600,000 doses had already been distributed across USA. An antiviral drug — known as TPOXX — is also available to treat severe cases.

In 2003 there was an outbreak in the US, the first time it had been seen outside Africa. Patients caught the disease from close contact with prairie dogs that had been infected by small mammals imported into the country. A total of 81 cases were reported, but none resulted in deaths.

## WHAT IS MONKEYPOX?

Monkeypox a little-known disease is now being investigated in European countries including the UK, as well as in the US, Canada, and Australia.

In the UK more than 2,600 cases had been confirmed by the end of August. Although infections are usually mild and the risk to the general population low, the UK government bought more than 100,000 smallpox vaccine dose. Monkeypox is caused by a similar virus to smallpox, therefore it is believed these vaccines will help.

## MONKEYPOX IN AFRICA

Monkeypox occurs mostly in remote parts of central and west African countries, near tropical rainforests. In those regions, there have been more



Dr. Bill Pomfret brings an unrivaled perspective on risk, regulation and liability from over 50 years of experience as a safety consultant working for leading companies around the world. He also spent nearly a decade in the North Sea exploration and production as a safety manager. Dr Bill is a passionate advocate for safety training.

than 1,500 cases since the start of the year.

Two main strains of the virus - west African and central African - are known to exist, and it's the milder one from west Africa which is now circulating into other regions of the world.

The unusually high numbers of people infected with monkeypox outside of Africa with no travel links to the region, means the virus is spreading.

The virus was first identified in a captive monkey and since 1970 there have been sporadic outbreaks reported across 10 African countries.

In 2017, Nigeria experienced the largest known outbreak with 172 suspected cases and 75% men between the ages 21 to 40.

## WHAT ARE THE SYMPTOMS?

Initial symptoms include fever, headaches, swellings, back pain, aching muscles. Once the fever breaks a rash can develop, often beginning on the face, then spreading to other parts of the body, most commonly the palms of the hands and soles of the feet. The rash, which can be extremely itchy or painful, changes and goes through different stages before finally forming a scab, which later falls off. The lesions can cause scarring.

The infection usually clears up on its own and lasts between 14 and 21 days.

## HOW DO YOU CATCH IT?

Monkeypox can be spread when someone is in close contact with an infected person. The virus can enter the body through broken skin, the respiratory tract or through the eyes, nose, or mouth. Although it has not previously been described as a sexually transmitted infection, it can be passed on this way.

While there is currently no available evidence that monkeypox can be spread in sexual fluids, people confirmed to have the virus are advised to abstain from sex while infected and use condoms for eight weeks after infection as a precaution.

It can also be spread by contact with infected animals such as monkeys, rats and squirrels, or by virus-contaminated objects, such as bedding and clothing.

## HOW DANGEROUS IS IT?

Most cases of the virus are mild, sometimes resembling chickenpox, and clear up on their own within a few weeks. However it can be more severe, with reports of death in west Africa.

## SHOULD THE PUBLIC BE CONCERNED?

The World Health Organization recommends protection teams contact people who've come into close contact with confirmed cases and are at high risk. They are advising anyone else who has been in close contact with someone infected by monkeypox to isolate at home for up to 21 days.



# My interesting audit experience in South Africa

Discussing Monkeypox reminds me about another experience I had in South Africa.

It was in 1995, I was invited to South Africa by the Managing Director of the National Occupational Safety Association (NOSA). I had agreed to stay eight weeks and was to be the keynote speaker at their annual conference. In addition, I was to work with NOSA senior consultants, teaching them how I conduct audits, (taking a full week or more, and not the 6 or 7 hours that NOSA took at the time, NOSA conducted an audit in one day which I said was impossible as it would take me five to ten days.

I let them show me their modus operandi, after which I did a couple of audits using the same system but evaluating and verifying every element.

At 6 am on Monday morning their regional manager Philip and I set off to audit one of the largest Anglo-American Platinum mines in the world and everything went well for five days. Then I made a request that no one had ever made before, I asked to visit the worker accommodation camps.

Arriving at the camp I saw several women sitting on a wall. I asked Philip what they are doing there, "serving the men" he replied.

At this time the HIV-Aids virus was spreading like a pandemic across the African continent, so I asked to be accompanied by a doctor and nurse.

I interviewed several workers, with the assistance of an interpreter. I asked when they last had sex. This was a no-no question in South Africa as it was not considered relevant in an occupational health and safety audit.

I then asked to speak to the doctor or nurse and related the conversations I'd had with some of the miners. We established that several of the men had been with a local prostitute, while others had been with other men. I suggested they order some small books (safety passports) and have every prostitute take an annual blood test for the HIV virus. I then asked the doctor to provide condoms to all the miners, free of charge.

I submitted an audit report which included the following recommendations.

All local prostitutes should be medically checked monthly by the company and in addition, condoms should be provided free of charge to all employees. NOSA Board of Directors were somewhat shocked at my findings and my recommended solutions.

During my keynote NOSHCON presentation, the following week, I alluded to my recommendations giving full explanations and the rationale behind my thinking. It caused a great deal of discussion, and Bunny suggested I should have discussed it with him first.

Over the following week it seemed like every TV channel, newspaper and magazine carried the story, not only in South Africa, but in Canada and the UK. NOSA then organised twelve independent smaller two-day conferences in every major city in the Republic of South Africa and Namibia.

The topic of my recommendations were mentioned, even though it was not on our addenda.

It took another three years, and a World Health Organization report recommending the same two things before employers implemented my recommendations.

## DR BILL'S BILL

In 1996, while visiting NOSA to conduct a Certified Accredited Auditors course, a South African politician came to my hotel to tell me he wanted to present a private members bill before parliament, he called it Dr. Bills Bill.

We had dinner, and discussed the wording, I suggested it should not only be for miners, but all workers. Employers are required to provide safety footwear, gloves, eye protection etc, so why not condoms?

I emphasised that far more people died from Aids, than from accidents and workplace health exposures.

## MY SOUTH AFRICAN SURPRISE AWARD

Fast forward a few years: My phone rang, I recognised the accent as being South African. The lady told me she worked in the South African Embassy in Ottawa, the South African Ambassador had asked her to call, and ask what I was being awarded for. What award?

This was the first I heard of it, so I called Bunny Mattheysen, he laughed and said it was for my services to the South African Aids Prevention effort. I was shocked to be invited back to the South African Parliament where I was presented with a beautiful plaque from FW de-Klerk.

Bunny and I remained good friends until his passing.

Dr Bill Pomfret can be contacted on Email: [pomfretb@spi5star.com](mailto:pomfretb@spi5star.com)

HIV-Aids was spreading like a pandemic across the African continent

HIV-AIDS at the time was not considered relevant in an occupational health and safety audit.



## The tragedy of 9/11 continues 21 years later

The anniversary of the World Trade Centre bombing never gets easier for us at the Asbestos Disease Awareness Organization (ADAO).

Twenty one years ago, nearly 3,000 innocent lives were taken in the 9/11 terror attacks. To this day, families grieve the loved ones lost, but as we think about that horrible tragedy, we must also honour those people who continue to suffer the lasting effects of these attacks.

Many of our heroic first responders who selflessly showed up at Ground Zero are now suffering from fatal and chronic illnesses and cancers caused by asbestos and other toxins that were released into the air when the buildings collapsed. New York first responders rushed to help save lives and protect their city, not knowing that they were exposing themselves to diseases that have 10-50 year latency periods.

“On September 11th, I, like every person in New York City, watched in shock and horror as our nation was attacked,” said Dr Jacqueline Moline, Director of the Northwell Queens WTC Clinical Center, during a Congressional panel in 2019. “Shortly after the towers collapsed, I, along with all physicians in New York City, was called to the hospital as part of the all-hands-on deck coverage. Tragically, there was little we could do that day. However, based on our knowledge of the potential for health effects related to asbestos and the other 150 toxicants individuals were exposed on 9/11, we knew that there was potential for disease – in the short term, and the long term. We knew the air wasn’t safe to breathe, but our immediate concern was for those with acute health effects, since we knew that other diseases would take years to develop.”

Twenty years later, we see respiratory diseases in the first responders – conditions that started after 9/11 and have persisted. We are seeing more and more patients with cancer. Our concern remains

that as the years pass, we move into the more common latency period for cancers to develop, and expect that cancers, including those caused by asbestos will increase.

When the towers came down, the dust that spread was laced with toxic substances, including ground glass, lead, gypsum, calcite, and asbestos – hundreds of tons of asbestos.

For more than a century, asbestos has been known to cause painful diseases and death, and there is no safe level of exposure.

Exposure to the fiber can cause mesothelioma, lung, gastrointestinal, laryngeal, and ovarian cancers, and non-malignant lung and respiratory diseases.

Though it has been known as a carcinogen since the early 20th century, asbestos was widely used in the construction of the World Trade Center, including in the application of since-banned fire-proofing asbestos spray.

Recent data from the United States International Trade Commission (ITC) indicates that U.S. Industry has imported more than 114 metric tons of raw chrysotile asbestos in the first three months of 2022. A sum greater than the total annual asbestos imports from 2021. The Institute for Health Metrics and Evaluation (IHME), an independent global health research center at the University of Washington, reported that from 1991 to 2019, 1,114,520 Americans died from asbestos-caused diseases. And yet although banned in countries like South Africa it still remains legal and lethal in the US, despite the incredible human cost.

Reaching the 21st year mark of the destruction of the World Trade Center, let one of the lessons learned be that we should never use asbestos in buildings – or for any use – again, as its toxic legacy continues not only for those involved in the construction of the towers, but for those exposed during its collapse.

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# SAIOH President's Message

Hennie Van Der Westhuizen, SAIOH President



As part of SAIOH's service to our members, we provide feedback on the latest developments within SAIOH, in the following paragraphs. SAIOH exists due to and for its members and is reliant on its

members to continue to ethically serve this noble profession. Therefore, we invite your inputs and feedback on any matters communicated herewith.

## National council feedback

*Hennie van der Westhuizen: SAIOH president, e-mail: [president@saioh.co.za](mailto:president@saioh.co.za)*

*Deon Jansen van Vuuren: SAIOH general manager, e-mail: [deon.jvvuuren@gmail.com](mailto:deon.jvvuuren@gmail.com)*

*Nico Potgieter: Co-opted member, email: [njpotgieter101@gmail.com](mailto:njpotgieter101@gmail.com)*

### Strategic plan

The current SAIOH strategy (5-year plan) is steered by Jaco Pieterse. The strategy is discussed, and progress thereof is evaluated at each monthly SAIOH Management Board meeting, and at the

quarterly Council meetings. The revised 5-year strategy will be circulated to all SAIOH members and launched at the AGM on 27 October 2022.

### Ethics

As previously mentioned, SAIOH entered into an agreement with well-known legal advisors, NGO Law, to represent the Institute when required.

The first task, i.e. to develop a memorandum of incorporation (Mol) to replace our current Constitution were received and the final comments are in preparation. This will be circulated to all SAIOH members and approved at the AGM, on 27 October 2022.

Our legal advisor's next task will be to review the SAIOH Ethics Policy and Procedure(s), thus enabling the Ethics Committee, to start its work in earnest. The Ethics Plan forms an important part of the SAIOH Strategy.

**Please note:** From January 2023, all SAIOH certified members will be required to provide proof that they have completed an acceptable occupational hygiene ethics training course. A one-year phase-in period was allowed during 2022.

A link of the Ethics Webinar recording as presented by Terry McDonald of the BOHS, during the 2021 Annual Virtual Conference was sent to all attendees of the 2021 Webinar.

A multiple-choice assessment/test was developed, based on this Webinar. This will soon be forwarded to all the participants and members who purchased the recording during 2022. It will be in a format similar to the Survey Monkeys SAIOH uses. There will be a time limit of 30 minutes, and only the members qualified will receive a passcode and access to complete the test. Every-one will have three chances, at weekly intervals, the system will automatically mark the paper and notify the candidate of his/her result. The required pass-rate is 60%.

There will be another in person and/or on-line (hybrid) Ethics PDC at the 2022 annual conference in Gauteng, on 26 October 2022.

### SAIOH Branch activities

Virtual meetings and workshops present numerous opportunities to SAIOH members. All SAIOH members are automatically invited and may attend any SAIOH branch meeting (or event), regardless of their branch affiliations. We encourage all our members to support their branches, and to participate in branch activities and earn CPD points. Members can submit topics for discussion to the various branch chairs for consideration for future webinars / meetings, and/or workshops.

The Western Cape branch hosted two (2) in-person meetings. The first one was on Friday, 10 June 2022. Rinus Kriel did a very interesting presentation on Ototoxicity. Some 37 OHPs attended. The second one was held on Friday, 16 September 2022, at the Blue Peter Hotel in Bloubergstrand (of all places). There was a very informative presentation on Teamwork between Occupational Hygiene practitioners and Occupational Health Medical practitioners during



Hazardous Chemical surveys. Some 45 OHPs attended.

The KwaZulu Natal branch held their second virtual meeting on Thursday, 23 June 2022. Four KZN Branch members presented on the new Hazardous Chemical Agent Regulations. Some 51 persons attended.

The Gauteng branches held two successful virtual meetings. The first one was on Friday, 24 June 2022. Sean Chester did an excellent presentation on Toxicology (Human biology and target organs). Some 53 persons attended.

The second one on Friday, 16 September 2022. Dr N. Ndaba did an excellent presentation on Biological Exposure Indices (BEI). Some 70 OHPs attended.

The Botswana Branch held a virtual meeting on 14 July 2022. A new Branch Committee was elected with Patrick Baleseng the new Chairperson. There were two presentations, i.e. Mine Ventilation during COVID-19, and The health effects experienced by women working in Open Cast Mines. Some 30 OHPs attended.

SAIOH would like to revive stagnant branches, starting with the Mpumalanga and Namibian branches. Members who would like to assist with, or contribute ideas towards this initiative are requested to contact Moses Mokone (SAIOH Branch Co-ordinator) at [Mokonemoses2@gmail.com](mailto:Mokonemoses2@gmail.com)

### IOHA and OHTA feedback

The Occupational Hygiene Training Association (OHTA) and IOHA continue to publish their individual Newsletters. SAIOH e-mails the links to all its members and posts them on the SAIOH website: <https://www.saioh.co.za> upon receiving them. They are also published in the OHS Journal.

Please note: OHTA has a new website: <https://www.ohtatraining.org>.

SAIOH's representative (Garth Hunter) who sits on the International Occupational Hygiene Association (IOHA) Board and its National Accreditation Recognition Committee (NARC), continues to be very active. This gives the SAIOH and the PCC valuable feedback from the IOHA and IOHA NARC meetings.

### SAIOH technical committee feedback

The SAIOH Technical Committee's research on welding fumes, i.e. the measurement and the analyses there-of, is ongoing. We anticipate completing this and putting out a SAIOH technical and position paper in the near future.

Another technical committee of elected experts, in conjunction with the DoEL, organised an initial workshop on the correct use of the WBGT formulae as per the Environmental Regulations for Workplaces, on Thursday, 28 July 2022.

A SAIOH position paper was generated and used by the DoEL to put out a resolution regarding the use of the WBGT heat stress equations. Both the SAIOH position paper and the DoEL resolution

were circulated to our members, stakeholders and was posted on the SAIOH website.

This Committee will continue doing research on heat stress. The focus is two-fold, i.e. to develop a technical paper and to enable SAIOH to give proper comments on the soon to be released new Physical Agents Regulations (the old Env. Regs. for Workplaces).

The intent of the Technical Committee is to continue setting up sub-committees to address topical OH Stressors. In this regard, the Council Technical co-ordinator is also currently busy with a position paper on Real-time monitoring.

### New SAIOH Website and Online Payment Platform

SAIOH engaged website developers to completely overhaul the current website - specially to allow integration with our current Member Management System (MySAIOH).

The SAIOH administration teams are progressing well with the implementation and population of the new website.

SAIOH has also started the process of implementing an on-line credit card payment system on a well-known international platform, like

PayU, to make electronic payments easier for members.

As soon as this is finalised, SAIOH will notify all members with a guideline on how to use it.

A special thank you goes out to Kate Smart for her work in this regard.



Annual SAIOH scientific conference



The 2022 SAIOH Annual Scientific conference is scheduled for 26 - 28 October 2022, to be held at the Birchwood Hotel and Conference Centre in Gauteng.

The Conference will be a hybrid event, i.e. face-to-face and via live streaming, and will be hosted by the Gauteng branch(es).

As previously mentioned, the theme will be centred around Control, i.e. “Occupational Hygiene controlling the future”.

SAIOH has already forwarded a comprehensive Conference notification flyer/Mailchimp, with

registration, sponsorship, exhibitor invite details and links. This was followed by a second reminder, including photos and biographies of the confirmed international speakers.

A call for abstracts on the Conference theme: “Occupational Hygiene controlling the future” was circulated. There was a lot of interest, and we received quite a few abstracts from SAIOH members.

Also, SAIOH already has a number of sponsorships for the conference, for which we are truly grateful.

Communications

SAIOH publishes its newsletter and Presidents’ page in two electronic mediums, namely Occupational Health Southern Africa, and the African OS&H magazine (A-OS&H). These publications are issued every two months, and the links are sent to all members via Mailchimp and posted on our website. Four issues of these two publications have already been sent to all SAIOH members this year.

SAIOH communicates daily with its stakeholders, via e-mails, phone calls, virtual meetings, important news, technical information, legislation changes, new Standards, webinars, etc.

Some recent interactions have included the following:

- SAIOH hosted a virtual OHSA Editorial Board meeting on 10 June 2022.
- WHWB held several OH related Webinars during the past 3 months;

- International Labour Organisation (ILO) held a virtual Information session on Monday, 11 July 2022;
- OH AIA Association held a virtual meeting on Friday, 15 July 2022;
- Virtual presentation on SAIOH and the certification system for University of Pretoria 3rd and 4th year students in Occupational Hygiene, on Thursday, 11 August 2022
- SAIOH, DoEL and OH AIA Ass. liaison meeting in person at our Broadacres offices, and on-line, on Thursday, 18 August 2022
- SAIOH was requested by the Department of Employment and Labour (DoEL) to supply them with names of specialised OHPs to sit on the DoEL Technical Committees for Hazardous Biological Agents (HBAs) and Ergonomics. Thanks to all the SAIOH members that put up their hands for this.



From the Professional Certification Committee (PCC)

Lee Doolan: SAIOH PCC administrator, e-mail: [lee@saioh.co.za](mailto:lee@saioh.co.za)  
Deon Jansen van Vuuren: SAIOH General Manager, e-mail: [deon.jvuvuren@gmail.com](mailto:deon.jvuvuren@gmail.com)  
Corlia Peens: PCC chairperson, e-mail: [corlia.peens@sasol.com](mailto:corlia.peens@sasol.com)  
Nico Potgieter: Co-opted member, email: [njpotgieter101@gmail.com](mailto:njpotgieter101@gmail.com)

Certification assessments

A summary of results from assessments, as at August 2022, is provided in Table 1 below:

Table 1. Results for (written) and oral/final assessments (up to 18 Aug. 2022)

| CERTIFICATION CATEGORY | Total Assessed<br>n  | Passed<br>n          | Failed<br>n        | Pass Rate<br>%         |
|------------------------|----------------------|----------------------|--------------------|------------------------|
| OH assistant           | (88)<br>88           | (79)<br>79           | (9)<br>9           | (89.9)<br>89.9         |
| OH technologist        | (35)<br>28           | (22)<br>20           | (13)<br>8          | (62.9)<br>71.4         |
| Occupational hygienist | (37)<br>20           | (11)<br>13           | (26)<br>7          | (29.7)<br>65.0         |
| <b>TOTAL</b>           | <b>(160)<br/>136</b> | <b>(112)<br/>112</b> | <b>(48)<br/>24</b> | <b>(70.0)<br/>82.4</b> |

The third and final round of PCC Written Assessments took place on Friday 23 September, with Oral Assessments scheduled to take place around Friday, 21 October 2022.

Oral Assessment Improvements

The PCC technical teams continue to work on revising the PCC oral assessment format and questions, in line with the occupational hygiene self-assessment tool. Two PCC technical teams are working in parallel, 1. updating the SAIOH self-assessment tool, revising the PCC oral assessment format, and 2. developing questions and required answers. The first Sub-committee (chaired by Garth

Hunter) has been meeting virtually every 2 weeks, and the second sub-committee (to be chaired by Nico Potgieter) will be starting in earnest soon, with 8 volunteers.

Improvements in the assessment format are to ensure that the growing field of occupational hygiene is covered and that the assessment format and tools continue to remain relevant and current.

Occupational hygiene skills forum (OHSF)

The SAIOH Occupational Hygiene Skills Forum (OHSF) was initiated to co-ordinate all aspects related to the recognition of occupational hygiene training materials (e.g. the Asbestos training courses, OH training providers and institutions, and the development and management of assessment and examination systems, where required.

Another function of the OHSF is to evaluate applications from tertiary institutions for recognition of their occupational hygiene-related qualifications. The OHSF is progressing well with these accreditations.

A recently developed matrix is used to evaluate the occupational hygiene (OH) qualifications content (in line with the 50% OH subject requirement).

Northwest University and the Tshwane

University of Technology have four-year bachelor’s degrees that are recognised by the OHSF as meeting the qualification criteria at the Registered occupational Hygienist (ROH) level. The OHSF is currently hard at work, evaluating the university of the Witwatersrand’s and CPUT’s programmes.

All tertiary institutions that offer OH qualifications are encouraged to contact the PCC administrator for information regarding application for recognition ([lee@saioh.co.za](mailto:lee@saioh.co.za)).

Details of recognised training providers and recognised qualifications will soon be available on the SAIOH website (<https://www.saioh.co.za>). This will make it easier for students and certification candidates to select suitable occupational hygiene training programmes that meet SAIOH and international requirements.



## Avoid heat stress during summer: Guidelines to keeping buildings cooler

**SABS**

Summer months in South Africa can be hot and uncomfortable, putting workers under the danger of suffering from heatstress, especially during loadshedding when aircondition units do not work.

Under these circumstances, the following guidelines from the South African National Standards may be helpful, for keeping buildings cool.

“The way a building is heated and cooled can be influenced by many characteristics such as the climatic conditions, geographical location, proximity to natural shade such as trees, location of the building to water sources, humidity factors,

ventilation, construction materials used in the building, the amount of sun that the building is exposed to, are a few examples.

“There are several national standards that provide technical specifications for ensuring energy efficiency which includes elements of heating and cooling in buildings. In addition to the guidelines, South Africans are encouraged to hydrate and to be out of the sun during 11h00 and 15h00 when the sun is at its hottest,” says Jodi Scholtz, Lead Administrator of the South African Bureau of Standards.

Guidelines adapted from **SANS 10400XA: Energy Usage in Buildings** and **SANS 13742: Thermal performance of buildings – calculation of internal temperatures of a room in summer without mechanical cooling – simplified methods.**

Increase the efficiency of cooling indoor spaces by fixing roofs, cracks or gaps in windows, doors or any space in which heat can be transferred in, or cool air can be let out

The heat transfer from metal roofs can be minimised through the correct installation and insulated materials used

A light coloured roof reflects more heat than a dark coloured roof and will keep buildings cooler

Roof lights and windows should be sealed to prevent air leakage or heat transfer

Increase the shade to block out the heat from the sun by using reflective materials or blinds, shutters, door and window seals, curtains - on windows or doors that face the sun

Ventilate indoor spaces by opening the windows or doors on the side/s of the building that is in shade, however if the heat from outside is higher than that inside, it is advisable to not let the heat transfer in

If some parts of the building are cooler than others during the day and if you are able, try to insulate and/or inhabit that part of the building during the hottest parts of the day. This will be useful for buildings that do not have air conditioning

Rooms that have a lot of carpets or furniture, have a low heat capacity and may be hotter than other rooms

Rooms closer to the ground may be cooler than those closer to the buildings ceiling

Maximise natural ventilation when it is cooler in the evenings and early mornings

Chimneys or flues can be closed with a damper or flap, which will help to keep the heat out



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