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OS&H



Lessons learned from the gas tanker explosion

Work station design and ergonomics

Building workplaces where workers feel safe to speak up

Health and safety training for inmates in correctional facilities

EHS - The importance of incident reporting

Occupational health and safety is a waste of organisational resources

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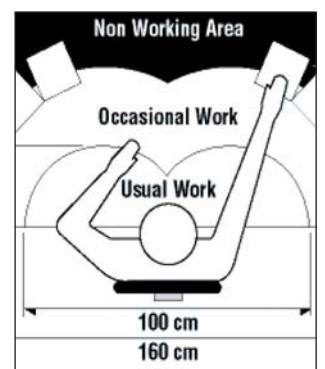
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Editor's Comment

BOKSBURG TANKER EXPLOSION

South Africans were shocked after a tanker exploded in Boksburg on 24 December 2022, killing 41 people. The photos of devastation, death and fiery flames flooded social media.

Leighton Bennett gives us an incident risk assessment of assumed questions and lessons that should be considered during the investigation of this incident. He also writes about the sequence of events that led to the explosion, the lessons that can be learnt and whether the BLEVE could have been avoided. He questions whether the response of the emergency services were adequate.

WORKSTATION DESIGN AND ERGONOMICS

Some argue that ergonomics is not given enough prominence in the workplace. Ergonomics - the study of workplace design minimises hazards that can lead to workplace musculoskeletal disorders (WMSD). An ergonomics programme, which includes workplace design aims to minimise employee exposure to these hazards. Such a programme that identifies, prevents, and controls ergonomic hazards in accordance with all applicable rules and regulations must be implemented in all workplaces. This article explains it all.

Keeping with this theme, Claire Deacon lists various invaluable tools that are available online which will help assess ergonomic risks in the workplace.

WORKERS MUST FEEL SAFE TO SPEAK UP

Han Wenqi tells us that employees must be encouraged to speak up when safety is compromised. Only one person speaking up, he explains can make a difference, prevent an accident, an injury, or even a death. The reasons employees may not speak out include fear of punishment or intimidation. And a safe working environment often depends on psychological safety.

OS&H A WASTE OF ORGANISATIONAL RESOURCES

Following his extensive experience in the health and safety industry, Tibor Szana tells us that he is well aware of the myriad of reasons why incidents take place. The real reasons however he emphasises are almost never reflected, with blame often being incorrectly directed. A half hearted attempt in health and safety in the workplace, he explains, is as good as no attempt. He concludes that to succeed in health and safety in the workplace, an occupational and safety programme must be properly implemented as intended by the Occupational Health and Safety Act. And if properly implemented, it will not be a waste of organisational resources.

OTHER ARTICLES OF INTEREST IN THIS ISSUE INCLUDE

Read Ehi Iden's heart warming story about occupational health and safety training at a correctional facility in Nigeria. The enthusiasm of the inmates to learn, the dedication to their new career and the difference it made to the prison.

Bill Pomfret explains that incident management reporting is a part of any EHS manager's job and with visibility and accountability the benefits go beyond compliance. Processes for submitting properly drawn-up incident reports must be part of every organisation.

We congratulate ALCO-Safe on its milestone achievement of selling 100,000 pieces of testing equipment.



Lessons learnt from the gas tanker explosion

On 24 December 2022, news spread with horror throughout South Africa about the tanker explosion in Boksburg, eventually leading to over 40 deaths.

In South Africa, we have various types of vehicles transporting hazardous materials daily. Most people have no idea of the risks related to the types of dangerous and hazardous goods being transported on our roads, what could happen should an accident event occur, and even how they are transported.

Hazardous gasses are transported in pressurised LPG tankers, carbon dioxide tankers, oxygen, chlorine and acetylene tankers. While others may be transported in a liquid form in pressurised tanks or cylinders on trucks and even bakkies.

Then we have the large tankers carrying flammable liquids such as petrol, paraffin, solvents, diesel and jet fuels, etc. in unpressurised tanks.

There are also trucks carrying solid and powdered materials like ammonium nitrate and explosives. Corrosive acids and alkalis also have to be transported. Any of these tankers or vehicles can and have been involved in unfortunate incidents in the past.

WHAT HAPPENED

Formal incident investigations are still taking place into the tragedy which hopefully will provide the actual incident causes going forward, but for now I have stitched together the press and media reports for an assumed gas explosion incident scenario assessment.

The incident background involves a gas tanker reported to be travelling from Richards Bay to Botswana in a contracted haulage carrier company's Hazchem (hazardous chemical risks labelled) designated tanker vehicle with non-company employee driver who was reported as a suitably trained, licensed and professional permitted driver with reported some 7 years of driving



Leighton Bennett (Pr.CHSA)
Benrisk Consulting Vice
Chairperson of the Safety
First Association, and a
practising statutory and
SAQA professionally
registered OHS
Practitioner.

experience, apparently obtained from a third-party Employment Agency.

At this stage we are unaware of the hazardous goods travel route and had the route been formally risk assessed and approved for use. Secondly, we are still uninformed to what extent the tanker driver was informed and instructed on the assessed and approved travel route, which should have at least one overnight rest stop due to the travel distance involved.

It is assumed the travel route was not along the N3 from KZN, but from Richards Bay via Mpumalanga, which is likely why the tanker was passing through the Boksburg area. I was recently in the East Rand area and got lost as the road signage is poor to non-existent. That being the case, the employment agency driver could have easily got lost and taken a wrong turning, ending with the tanker being caught under a low height capacity bridge with poor warning signposts.

A pre-incident bridge photo that has been published shows a small and poorly visible warning sign displayed on the bridge parapet railing. The bridge's concrete beam also shows damage where numerous previous vehicles would have impacted with it. Furthermore, the published photographs of the bridge site display a steep road profile decline entry into the bridge, which means the long tanker has its back wheels up the slope adding to the tanker's height on entering under the bridge.

Another published photograph of the tanker wedged under the bridge shows possible evidence of fire flames, so the fire ignition may have been caused as the tanker got stuck under the bridge. Apparently, the driver realising there was a gas leak and a serious incident risk immediately called for emergency help.

He was also said to be involved in deploying barrier tape and warning the spectators to evacuate the area as gas was escaping. But without any



heeding his warning, they became victims. Such actions suggest the driver was risk trained and so took the appropriate incident prevention actions.

On arrival of the emergency services (fire brigade and police), they automatically become the incident site custodians to manage the site and the risks. This would involve managing the gas leak and fighting the fire when it occurs, as well as managing and stopping road access to the site, and due to the gas risk enforcing the evacuation of the area of all the bystanders, etc. But, it appears that no enforced bystander or other evacuation was implemented.

WHY DID THE GAS TANKER CATCH FIRE AND EXPLODE?

Safety things to note:

1. LPG is stored as a liquid under pressure in pressure tanks, tanker cylinders and in the domestic and other gas cylinders used by us all. When the gas pressure is released the LPG liquid rapidly vapourises into a gas that occupies about a 270 times larger gas volume than a 1 litre of LPG's liquid volume. It is believed that the driver knowing the risk therefore called for the emergency services help to manage the incident.

Note: The Emergency Management Services adopt the commanding and managing responsibility of any incident site on their arrival.

2. LPG is heavier than air so it will sink and accumulate into the lower lying areas under the bridge, and when the gas vapour is at a 2% to 9.5% mixture in air it only needs a nearby spark, a spectator cigarette or something at some 450°C to ignite it.

LPG being a heavy gas would raise oxygen out from under the low bridge area, giving an oxygen deficient atmosphere such that nearby vehicles were not able to be started, as was reported by taxi driver/s who lost their vehicles in the explosion. And for this same reason, the driver was hospitalised as he was reported to suffer from an oxygen deficiency exposure.

3. On ignition the accumulated leaking gas, from an unknown source, possible from a hot exhaust, electric spark or cigarette, etc., the leaked LP Gas will flash back to the leaking tank, heating the tank (as the flames and heat, about 1 980°C, was confined against the tank against the bridge's concrete deck base), where pressurised LP liquid in the tank is heated, and with reducing gas leak pressure, the LPG liquid rapidly changes to LP Gas which will over pressure the metal-weakened fire-heated tank until the tank ruptures causing a fire related BLEVE (Boiling Liquid Expanding Vapour Explosion). This then generates a massive high heat and energy fire ball of several hundred meters in diameter, due to the tanker volume of LPG involved (Note, steel melts at about 1600°C).

Considering this assumed incident sequence of events, now leaves us with questions from which lessons can be learnt.

INCIDENT LESSONS THAT CAN BE LEARNT

Lesson one:

Are the authorities and the public relatively unaware of the risks related to the transportation of hazardous materials through their town and community areas? In this tragic case, it was Liquid Petroleum Gas (LPG).

What are the dangerous and hazardous goods that are transported daily in your area? Are they being transported through your community high-risk areas? Have specific approved high-risk transportation routes been established and their use enforced? Are these vehicles suitably approved and permitted to transport such hazardous goods?

Lesson two:

Was there an adequate hazardous good transportation route and driver knowledge and capacity assessments done? Currently, we are unaware if there was any transportation route risk assessment performed by the transport contractor.

Was the route selected a normal transportation route or was it changed due to a holiday season quiet route from Richards Bay to the Reef, so to avoid the busy N3 traffic routes via Durban?

It seems possible that the route selected involved the driver travelling through Mpumalanga ending in Boksburg, where I recently got lost travelling from the N17 towards the N12 as the road route signage is poor.

Was this route the normal tanker route or an adapted one so as not to subject the festive season traffic on the N3 to a hazardous load risk?

Had the authorities perhaps placed a limitation on the heavy transport haulers using the N3 during this festive season period, and thereby forcing the transport contractor to use other less familiar and possible non-risk assessed routes?

There are many lessons to be learnt within this second lesson learning point.

Lesson three:

Did the driver get lost, take a wrong turning and get his tanker wedged under a low level clearance height bridge with warnings poorly marked?

Press photos show the tanker wedged under the bridge, with no obvious fire ignition showing, although it is obvious that some valve on the tanker top was damaged and so it was leaking LPGas into the atmosphere.

The knee jerk response is/was to blame the driver for the deaths (over 40). Yes, he wedged the tanker. No, he did not deliberately or intentionally start the fire. He apparently acted responsibly by high-lighting the gas risk and so implementing "keep clear" precautions until the emergency services arrived.

He was not responsible for the site after the emergency services (fire brigade and police) arrived and started managing the site. He had no authority to order a site evacuation.



However, the general feeling is everything that happened is his fault. This lesson suggests there are more root causes to this incident than just putting the blame on the tanker driver.

Lesson four:

Was the fire-fighting adequate? LPG is an E class fire which is normally extinguished by shutting off the gas supply or by firefighting using dry powder, or carbon dioxide, or foam into the gas stream to extinguish the gas fire.

In this incident, water hoses were used in an attempt to keep the tanker's tank cool, but this would not extinguish the gas fire.

Unfortunately, the gas leak fire was against the bridge base, so the flames and fire heat were in contact with the metal tank surface now being heated, thereby softening the metal until the tank under pressure ruptured, releasing the gas liquid to cause a BLEVE and its huge fire ball and explosion which destroyed lives and property.

The lesson learned here is that fire-fighting must always consider the material burning and the environment impacting on extinguishing a fire.

Due to the gas leak fire location in this scenario, there was a slim chance of extinguishing the fire whereas a tank rupture and explosion was a likely outcome. Therefore a full area evacuation was required but was not ordered and/or effectively implemented, resulting in damage and fatal injuries from the BLEVE, which caused an explosive shock wave and intense fire balls impacting everything in at least a 100m diameter area.

The explosion shock blast caused the roof and ceilings of the nearby Tambo Memorial Hospital to be blown off with some walls collapsing. The bridge, railway lines and nearby vehicles were destroyed. Surrounding houses were damaged. People in close proximity were either burned or killed.

Lesson five:

Did the bridge display adequate and obvious warning signs indicating its low clearance and clearance height dimensions? Media pictures show a poorly visible bridge warning sign which many drivers had obviously not seen because the bridge's

concrete beam can be seen as damaged multiple times from vehicle impacts. That suggests the warning signage was totally inadequate and should have been upgraded to suitable visible signage by the municipal authorities. With the height warning signage being in a poor state, the driver could easily have misjudged the height clearance for his tanker truck, which is evident from photos of the truck under the bridge.

Knowing that the signage was inadequate, why did the local council (traffic department) not improve the low bridge warning signage with clear visible warnings on the approach road?

Will the bridge be rebuilt as per the destroyed one, another low-level clearance bridge? More than likely, because of the railway lines alignment issues. If so, more bridge vehicle collision contacts can be expected. An over-the-rails design bridge is required to eliminate this low bridge hazard, but at a significant cost.

Lesson six:

Are the local authorities and emergency services up to speed to handle such incidents? The media has been asking such questions for a while now, as it is known that suitably trained and experienced staff shortages and equipment supply and maintenance funding issues exist and are known concerns in nearly every South African municipality and town council.

Was fire-fighting foam available for use at this incident site? We also ask, when will the destroyed fire water tanker be replaced following this incident?

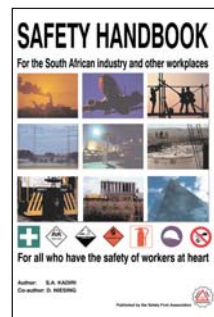
CONCLUSION

This assumed incident risk assessment highlights that many factors, like evidence, forensics, witness and response statements, etc, need to be considered, by the hopefully experienced incident investigators, during the formal incident investigation and its issued report.

Let us hope that some points from this incident risk assessment of assumed questions and lessons are being considered during the investigations and implemented going forward in memory of those who tragically died.



Workstation design and ergonomics



Extracted from the
Safety First Association
SAFETY HANDBOOK

www.safety1st.co.za

DEFINITION OF WORKSTATION

A workstation is the place a worker occupies when performing a job. It may be occupied all the time or it may be one of several places where work is done.

Some examples of workstations are work stands or worktables for machine operation, assembly or inspection, a work table where a computer is operated, a control console etc.

A well-designed workstation is important for preventing diseases related to poor working conditions, as well as for ensuring that work is productive.

Every workstation should be designed with both the worker and the task in mind so that work can be performed comfortably, smoothly and efficiently. If the workstation is properly designed, the worker should be able to maintain a correct and comfortable body posture. An uncomfortable work posture can cause a variety of problems such as: back injury; development or aggravation of RSIs; circulatory problems in the legs.

Work height vs work surface

It is important to understand these differences when designing workstations.

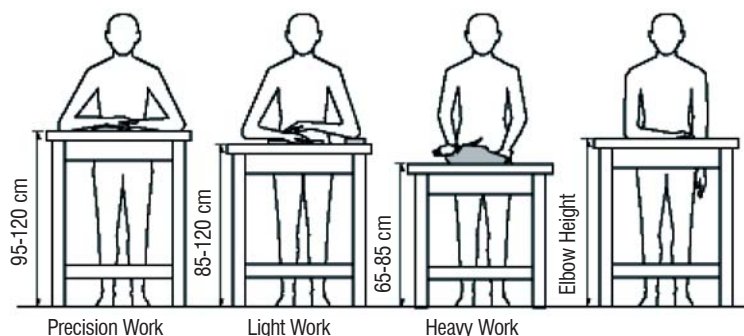
For tasks with extensive vision requirements such as precision grinding or using a microscope, the work height should be increased.

Work height is not the same as the work surface height. The work height is the height of the interface between the operator (generally his/her hands) and the work. The work surface height is the height of the table/bench that the work is sitting on.

Raising the work height to improve posture (i.e. to minimise stress to the neck/shoulders/back) applies whether an employee is standing or sitting. A cushion/rest should be used to protect the elbow from the hard work surface.

THE WORKSTATION DESIGN

Designing an ergonomic workstation can be difficult, but is essential.



Ergonomics is specific to individuals. Even the smallest ergonomic detail brings several variables. A comfortable, ergonomically sound workstation for one person may be uncomfortable for another and must accommodate every individual to maximise both comfort and productivity. An unorganised workstation is a hindrance to safety and productivity.

In a well-designed workplace, the worker has the opportunity to choose from among a variety of well-balanced working positions and to change between them frequently.

Design considerations

- Working tables and benches should be adjustable. Being able to adjust the working height is particularly important to match the workstation to the worker's individual body size and to the worker's particular task. Adjustability ensures that the worker can carry out work in well-balanced body positions.
- If the workstation cannot be adjusted, platforms to raise the shorter worker or pedestals on top of workstations for the tall worker should be considered.
- There should be enough room to move around and to change body position.



- Built-in foot rails or portable footrests should be provided which allow the worker to shift body weight from one leg to the other (see above).
- Elbow supports for precision work help reduce tension in the upper arms and neck.
- Controls and tools should be positioned so that the worker can reach them easily and without twisting or bending.
- Seat consideration is also important and should always be provided even with a job that requires standing only, allowing the worker to sit occasionally. The seat must place the worker at a height that suits the type of work being done.

Seats at the workplace expand the variety of possible body positions and give the worker more flexibility.

Always remember the following:

- There must be adequate room so that people and components can move about freely without obstruction.
- There must also be enough space for any handling equipment that might be used, such as forklifts or other lifting equipment.
- There must be adequate lighting to avoid eyestrain.
- Whether at a sitting workstation or standing workstation, you must have the proper posture to avoid sustaining injury.

Different task requirements

Workplace design should fit the variety of workers' shapes and sizes and provide support for the completion of different tasks.

Different tasks require different work surface heights.

- Precision work**: writing, electronic assembly, drawing and reading.
The work surface should be higher (5 cm above elbow height) so that the elbows can rest on it. This will also bring the work closer to your eyes.
- Light work**: assembly line or mechanical jobs.
The work surface should be about 5-10 cm below elbow height.
- Heavy work**: Demanding downward forces.
The work should be from 20-40 cm below elbow height.

COMMON TYPES OF WORKSTATION DESIGNS

There are 4 common types of workstations.

1. Standing workstations

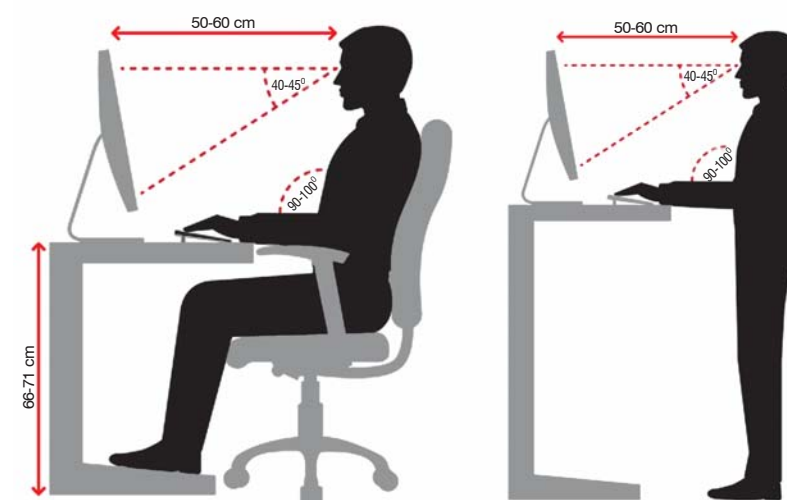
Standing is a natural human posture and in itself possesses no particular health hazard. However, working in a standing position on a regular basis can cause sore feet, swelling of the legs, varicose

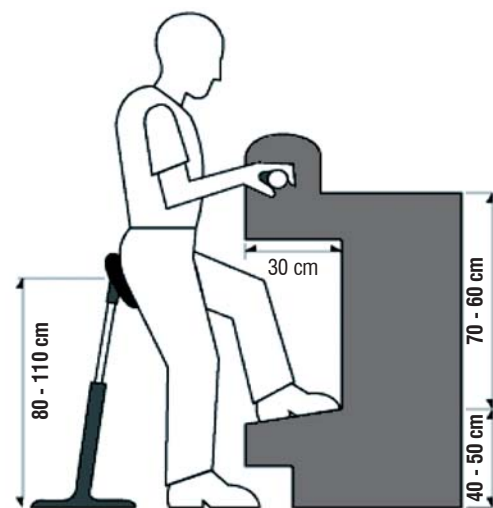
veins, general muscular fatigue, lower back pain, stiffness in the neck and shoulders, and other health problems.

Tasks that require more mobility or an increased amount of force are often done standing. Examples are manual material handling and heavy grinding. Standing workstations are also the best choice when the worker needs to frequently reach for objects. In these situations, the body weight is used to obtain the force needed for perform the task. Usually, the maximum amount of force can be exerted when the components are just above elbows. For this reason, adjustable platforms at standing workstations allow the maximum amount of force to be exerted without straining.

Standing for extended periods of time places static load on the back muscles, which can contribute to a back injury. To minimise the risk of developing a WMSD in the back when standing, follow these guidelines

- Keep the back/torso erect with the natural curve of the spine intact.
- Stand on a rubber anti-fatigue mat for cushioning, not on hard floor surfaces. Footrests or foot bars can also be used to change positions.
- Change working positions frequently so that working in one position is of a reasonably short duration.
- Avoid extreme bending, stretching and twisting.
- Pace work appropriately.
- Always face the object of work.
- Keep body close to the work.
- Adjust the workplace to get enough space to change working position. Use a foot rail or portable footrest to shift body weight from both to one or the other leg.
- Allow workers suitable rest periods to relax; exercises may also help.
- Tilt the work surface instead of bending continuously. This reduces static load on the back and upper body. Where feasible provide the worker with a tilted workstation.
- Locate objects within easy arm reach to minimise leaning forward and awkward reaching (e.g. reaching over your head or behind your back)
- Adjust the work to the appropriate height whenever possible. Generally, work should be done at approximately elbow height. The optimum work height, for standing or sitting, is based on the elbow height.
- If the work surface is not adjustable, provide a pedestal to raise the work surface for taller workers. For shorter workers, provide a platform to raise their working height.
- The job should be designed to allow the worker to keep arms low and elbows close to the body.



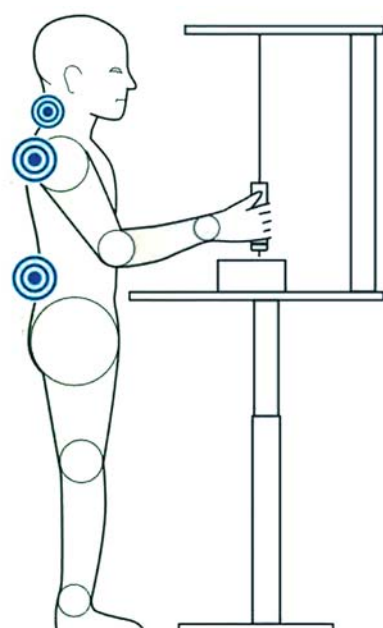


When possible, the worker should alternate between standing and sitting. Use a sit-lean stand (see above) as an alternative to a chair stool.

2. Sitting workstations.

For work on small, intricate objects (precision work), a sitting workstation is most effective. This is because the sitting position is more stable and allows the assembler to work more precisely. However, sitting can limit reach as well as the ability to exert force.

- All materials needed to do the job must be within comfortable reach ensuring that the worker does not need to strain to get them.
- The maximum (occasional) work area is the area within comfortable reach of the extended arm. The normal (usual) work area is within the limits of a comfortable sweeping movement of the arm, with the elbow bent at a right angle or less.
- Any potential restraint must also be considered such as that caused by clothing, age, gender (women have greater flexibility than men), and any disabilities.
- Sit up straight to avoid possible injuries.
- It is important to get up and walk around during breaks to stretch muscles.
- The worker should also be provided with a footrest.
- The most important component in a sitting workstation is the chair. An adjustable chair is often necessary so that its height can be adjusted to a comfort level. This must be done at the beginning of the shift.
- Make sure there is significant legroom.
- Sit with head and upper body upright or slightly forward to avoid awkward twisting.
- Chairs that are too low will disrupt blood circulation in lower legs, causing



swelling, put pressure on internal organs and create too much pressure on buttocks and causes discomfort.

- Consider using arm slings (see above). This reduces tension in the shoulder-neck area.

3. Workstation for Precision Work

Provide the worker with a height-adjustable workstation

1. For a fixed-height workbench
 - Provide work platforms to accommodate shorter workers.
 - Raise the work surface for taller workers.
2. A height-adjustable workstation
 - Provide sufficient leg clearance to allow the worker to get close to the work object, thereby reducing the need to bend the torso.
 - Provide a footrest as foot support that will improve body balance and minimise the static load on the worker's back.

4. Workstation for Assembly Work

In assembly work, static load, awkward postures and forceful movements are major risk factors for WMSD. Prolonged standing and the fatigue resulting from it additionally contribute to WMSD (See picture on the left).

- Use jigs and vices to hold the work object steady at the right height and position for optimum comfort.
- Use tool balancers to reduce the effort of holding and operating the tool.
- If possible use the lightest tool that can get the job done properly, preferably one weighing less than 1 kg.
- Anti-fatigue matting reduces lower back and leg discomfort and minimises fatigue.



Ergonomics tools to use at work

What to do to get going to assess your ergonomic risks at work can be very challenging. However there are many tools to get you going. Compliance can appear to be quite daunting and does have the effect of thinking you can't do it.

This article aims to give you some pointers on where to start.

Ergonomics is not made up of one area of work, but a range of aspects that come together to form a picture of all the areas to which a person is exposed. As with medical surveillance the information required for ergonomics is not looked at in isolation. Such information should include:

- Occupational hygiene monitoring results (noise, dust, lighting, ventilation etc.);
- Understanding the PPE that is worn for the various exposures;
- Understanding stress levels, overtime, shifts, level of decision making, and
- Analysing accidents, occupational diseases and absenteeism levels and claims.

Understanding the physical/chemical and occupational exposures that are put into an occupational risk exposure profile (OREP) provides a picture of 'hotspots' to focus on.

A baseline risk assessment taking all of the above, identifies initial potential or problem areas. The focus should then be where to go next and what detail is required.

Your ergonomic survey should integrate with your management system.

I have summarised the tools to be used that are available free of charge on various websites:

Rapid Entire Body Assessment (REBA)

This tool assesses posture, forceful exertions, movements, repetition, and integration that a job requires.

A score is then given for legs, back, torso, neck, shoulders, elbows, forearms, and wrists.

Once the data is collected for each body region and ergonomic risk factor, a single score is generated to determine overall MSD risk.

Rapid Upper Limb Assessment (RULA)

Section A of the form is used for the upper extremities, while Section B is for the neck and trunk.

Once each body region has been scored against the ergonomic risk factors, a single score is generated that represents the overall risk.

WISHA lifting Calculator

Created by the Washington State Department of Labor and Industries - based on NIOSH research that identified lifting as a primary cause of back injuries. (Figure 1)



Claire Deacon
PhD (Constr. Mgt),

The WISHA Lifting Calculator should be used as a preliminary screening tool to identify lifting tasks with MSD repercussions.

For further analysis use the NIOSH Lifting Equation.

NIOSH Lifting Equation

The NIOSH Lifting Equation focuses on the Recommended Weight Limit (RWL) and Lifting Index (LI) to determine safe boundaries for manual lifting tasks.

The RWL establishes the maximum acceptable weight that healthy employees could lift throughout an eight-hour shift without increasing their risk of lower-back MSDs.

On the other hand, the LI estimates the physical stress and MSD risk of the lifting tasks that are being evaluated.

However remember we don't have RWLs except for children.

CONCLUSION

In most cases some of the tools can be done by someone who does not need to have an extensive knowledge.

The challenge would be the interpretation and what to do to address the issues.

Certain industries are more challenging as they are transient and therefore to assess the exposure rates is not an easy one.

Construction in general fits one of the challenging industries as projects are anything from a few days to a number of years.

Contractors and part time service providers are to be included and need also to be assessed for exposure.

In conclusion all the health and safety disciplines work together in determining overall exposure and the optimum ways to manage and reduce risks to those exposed.



Above shoulder	65	40	30
Waist to shoulder	70	50	40
Knee to waist	90	55	40
Below knee	70	60	35
	0" Near	7" Mid	12" Extended

Figure 1. Lifting Calculator

Occupational Health and Safety is a waste of organisational resources

I have worked in the occupational health and safety (OHS) field for about 32 years. The majority of this time was spent in Gauteng, first as an inspector for several years and then in management.

My time was spent between Johannesburg until 2006 and thereafter in the Pretoria national office of the Department of Employment and Labour in OHS.

REGULATIONS, STANDARDS AND THE LAW

Over the years health and safety in South Africa was dominated by the Regulations that were published from time to time.

Standards were published by the South African Bureau of Standards (SABS) who published what we know as the South African National Standards (SANS). These Standards may be incorporated into the Regulations. However, there appears to be a change with the SABS no longer wanting to pursue the relationship to the same extent that it once did.

In the main, this means that the Department of Employment and Labour will need to ensure that Regulations are published as a Regulation and not as a Standard.

Annually, countries, sovereign entities, those who are signatories to the various Conventions with the ILO (International Labour Organisation) get to celebrate/commemorate workers - those who have died as a result of their workplace activities and those who continue to work at a workplace each day.

The ILO, now just over a 100 years old (circa 1919) continues to provide guidance to signatory countries on various aspects of all labour laws affecting workers. Countries are then expected to use conventions and other instruments to guide them on the development of their own national sovereign laws.

OH&S - COMMON SENSE OR NOT

I have long pondered this question of whether or not we have complicated our lives at the workplace with the addition of occupational health and safety. After all, surely as we grew up we all learnt lessons that there are good things such as riding your bike or riding a car or climbing a mountain and none of us will do anything to unnecessarily endanger our lives. Or will we?

We all learnt from a young age that there are things you could do that are considered “bad”. Things such as: do not touch a hot stove plate. Do



Tibor Szana
Chief Inspector:
Occupational Health and
Safety (Retired.)

not walk in front of moving motor vehicles on a busy road or do not jump from high levels, etc. After all, people are rational human beings and past lessons are sufficient for moving forward in a manner allowing them to use their “common-sense”. Or is the old adage true that says “sense” is not so “common” for everyone.

Some countries have gone as far as prescribing each aspect of what is required to be done in health and safety, while others have put down what is deemed to be the minimum standard. Once again, is all that really necessary? After all, legislation on occupational health and safety is as old as time (Hammurabi and others) and the more formal legislation is now almost 200 years old.

BURDEN OF PAPERWORK

I have watched countless videos over the last couple of years where workers work unsafely or in an unhealthy manner, as I am sure many of you have. In fact, videos and pictures are frequently circulated online by various groups or individuals.

There is sufficient evidence online to show there are a variety of reasons why accidents/incidents take place. I am not trying to oversimplify an issue that is quite serious. However, the complaints from employers, employees, consultants and others is that there is a phenomenal amount of paperwork required to be done in health and safety as required by legislation, and that takes away from the time that could have been spent doing more relevant and critical issues on site, the physical aspect of inspections/audits.

Of course what one cannot dispense with is the burden of health and safety on SMMEs with limited resources, versus the burden on bigger employers with a reasonable access or greater access to resources that may be required to implement and operate a well functioning occupational health and safety system, as required by Section 8 of the OHSA.

PASSING THE BLAME

We all know from various sources (overseas) that statistics show there is a higher chance that new employees (at least first 3-5 years) and older employees (55+) are more likely going to be injured at the workplace.

Now at this juncture, I would like to remind you that after a lifelong experience in the health and safety industry, I am well aware of the myriad of reasons why incidents take place.

A half hearted
attempt is as
good as no
attempt

The reliance on
adhoc visits by consultants
to do audits and accident
investigations amongst others
does not amount to a
sustainable health and
safety programme.

It should be noted however that, the real reasons are ‘almost’ never ever always reflected. In fact, as long as the ‘blame’ is at the door of the injured person, all is well.

I would like to emphasise that unless you are going to properly attend to your responsibilities as required by OHSA, don’t bother, a half hearted attempt is as good as no attempt.

Employers who impose OHS on any employee may as well expect nothing to happen that is substantive. The

key reason being that such persons do not have the passion for OHS that is required to ensure its success.

OHSA is built on structures and systems that the employer is required to implement and maintain.

The OHSA is now at least 30 years old. Some requirements of some Sections however are not new and did not start in 1993. The OHSA was originally published in 1918 and was built on from there in the non-mining sector. In the mining sector it commenced sooner than 1918.

DUTIES OF THE EMPLOYER

The employer has certain duties that he/she is required to uphold in terms of the OHSA, failure to comply would render any employer guilty and subject such employer and or Chief Executive Officer (CEO) to a fine and or prison sentence with a clear criminal record against such person’s record.

The employer is required to provide and maintain a working environment that is safe and without risk to the health of his employees.

Further to the aforementioned, the employer’s duties include in particular:

- The provision and maintenance of systems of work, plant and machinery that are safe and without risks to health;
- Take steps to eliminate or mitigate any hazard or potential hazard, before reverting to PPE (application of hierarchy of controls);
- Make arrangements for the safety and absence of risks to health in connection with articles or substances;
- Establish what hazards to the health or safety of persons are attached to any work and further establish what precautionary measures should be taken and provide the necessary means to apply them;
- Provide such information, instructions, training and supervision to ensure health and safety;

- Ensure the required precautionary measures prescribed, have been taken;
- Take all necessary measures to ensure that the requirements of this Act are complied with;
- Enforce such measures as may be necessary in the interest of health and safety;
- Ensure work is performed under general supervision of a person trained to understand hazards associated with it and who has the authority to implement required precautionary measures;
- Cause all employees to be informed regarding the scope of their authority.

How do you as an employer understand and implement the aforementioned. Too often the management of OHS is left to juniors within the company. The employer or any other senior manager at best then feigns an interest in OHS, and in the case of the formal sector, employers (big companies) show a “keen interest” in their ‘Integrated Annual Reports’ in OHS while the reality on the ground is quite different from that recorded.

The health and safety representatives where required and the health and safety committees where required, are probably the most under utilised structures put in place by the OHSA.

There are numerous reasons why these two critical structures fail, not least of which can be pinned to the type and quality of training received. This talks to poor reports, poor audits lack of confidence of colleagues in their OHS representatives and OHS committees. The reliance on adhoc visits by consultants to do audits and accident investigations amongst others does not amount to a sustainable health and safety programme.

CONCLUSION

So you want to succeed at health and safety at your workplace? Reboot and start from the beginning as if it is day one of a new business.

Ensure that all your systems are in place and if you need to do more than the current legislation requires to ensure success, then do so.

Occupational health and safety does not need to be a waste of organisational resources if the occupational health and safety programme is properly structured and implemented as intended by the Occupational Health and Safety Act.



EHS - The importance of incident reporting

WHAT IS AN INCIDENT REPORT?

At every workplace, there will be unplanned and undesirable occurrences. The facts and details of these events should be, and in some cases must be, documented in incident reports.

For the EHS professionals, incident reports usually cover workplace injuries and health and safety issues but they can also include damage to property and equipment, security lapses, environmental spills and releases, as well as near misses, (Incidents) which have the potential to cause, but do not actually result in, an interruption to operations.

The reporting process begins with fact finding and ends with recommendations for preventing future incidents. You should complete a report for any incident involving worker safety, even incidents that don't result in an injury or illness, as soon as possible after the incident occurs.

GOOD INCIDENT REPORTING

Benefits of good incident reporting and a good management programme:

- Provides a record of everything that happened
- Helps get to the root cause of risks, failures, and other hazards that may have led to the incident so that corrective and preventive actions can be put into place.
- Helps prevent future issues and lead to improved safety practices
- Protects organisations from financial and reputational damage
- Provides employees with confidence that the company is looking out for their wellbeing.
- Can be used to identify problems within an organisation's safety processes and procedures.
- The data can be useful for trending and analysis and help safety leaders and their teams collaborate and put effective controls into place.
- Accurate incident reports can simplify internal and external reporting and streamline the sharing of information with insurance providers and human resources platforms.



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.

REASON FOR PROPER INCIDENT REPORTS

Besides the benefits of documenting incidents, in many cases they also have to be recorded and reported in order to comply with the various regulatory agency requirements. By capturing the details of all incidents, compliance obligations based on the severity of incidents and injuries will be met.

Reporting incidents accurately not only keeps you in compliance but the data you collect, and share helps understand a sense of the hazards that are common in the work environment and help all employers and employees avoid them.

Not understanding these requirements and not responding accordingly could result in fines and penalties and expose your organisation to legal risk.

INJURIES, ILLNESSES AND NEAR MISSES

The Occupational Safety and Health Administration (OSHA) requires many employers with more than 10 employees to keep a record of serious work-related injuries and illnesses.

Certain low-risk industries are exempted from this. For example, minor injuries requiring first aid only do not need to be recorded.

However when an employee suffers a work-related hospitalisation, amputation, loss of an eye, or is killed on the job, OHS must be notified. Fatalities must be reported within eight hours, while an inpatient hospitalisation, amputation, or loss of an eye must be reported within 24 hours.

There are no regulatory reporting requirements for near-miss events, but some management system standards may require reporting them as evidence of the organisation's commitment to preventing incidents.

ENCOURAGING INCIDENT REPORTING

It's crucial to get employees involved in safety by reporting incidents and near misses.

Some companies encourage this with incentive programmes, others put punitive measures into place for non-reporting, while others allow for anonymous reporting or embedding reporting

expectations into their corporate mission and vision. One thing universally agreed on is the need for employee training. As part of any incident reporting programme, employees must understand how to submit reports via the various methods so that they can confidently do so when an incident does occur.

An obvious way to encourage incident reporting is to make the process simple. While paper-based reporting processes are still in use by some, leading organisations view them as inefficient and have shifted to the use of software tools, for capturing the facts of incidents.

Providing a public portal that allows any employee, even those without a user account, to report incidents can also encourage incident reporting. Many safety managers and site leaders now provide a kiosk or post QR codes throughout the facility that can be scanned with mobile devices to initiate a report. The use of software also provides instant feedback to the reporter with an incident ID number or email record.

WHAT DETAILS SHOULD YOU CAPTURE IN THE INITIAL REPORT?

An incident report needs to include all the essential information about the event. The need for sufficient details in the initial report must be weighed against the potential reporting reluctance that requires a high level of detail. Finding a balance is important to success so it's beneficial to discuss what is essential.

As a start, all reports should have the following:

- Date, time, and specific location
- Names, job titles, and department of employees involved and their supervisor(s)
- Event description - What events led up to the incident? What was the primary cause, secondary cause, and any supporting conditions? (e.g., slippery floor, inadequate lighting, noise, etc.)
- Witness comments
- What immediate actions were taken?

- **For injuries and illnesses:** Type of injury, body parts involved, and extent of injuries
- **For environmental incidents:** What chemicals/materials were involved, in what quantity and for what duration?
- **For property damage or motor vehicle accidents:** What equipment, materials, etc. were involved?

The incident should be described in sufficient detail that anyone reading it can clearly picture what happened. Photos of the scene and diagrams will help clarify the physical characteristics and timeline of the incident.

Based on these details, site and safety leaders should be able to start their investigation.

INVESTIGATION AND CORRECTIVE ACTIONS

After the initial incident details are documented, the next step is to find out what happened so that preventive measures reducing the likelihood of it happening again can be put in place.

In its guide Incident (Accident) Investigations, a Guide for Employers OSHA provides a four-step approach to root cause investigations.

Step 1. Preserve and Document the Scene

Step 2. Collect Information

Step 3. Determine Root Causes

Step 4. Implement Corrective Actions

Both OSHA and EPA recommend that employers use an investigative technique called "Root Cause Analysis" or RCA. This follows the principle that the root causes of an incident can be traced back to the failure of the programmes managing safety and health in the workplace.

OSHA and EPA also encourage this approach for employers subject to incident investigation requirements under the process safety management (PSM) or risk management programme (RMP) standards. Both requiring that employers initiate an incident investigation within 48 hours.

Using a Root Cause Analysis will identify all root causes, as there are often more than one.

Tools for conducting RCAs include:

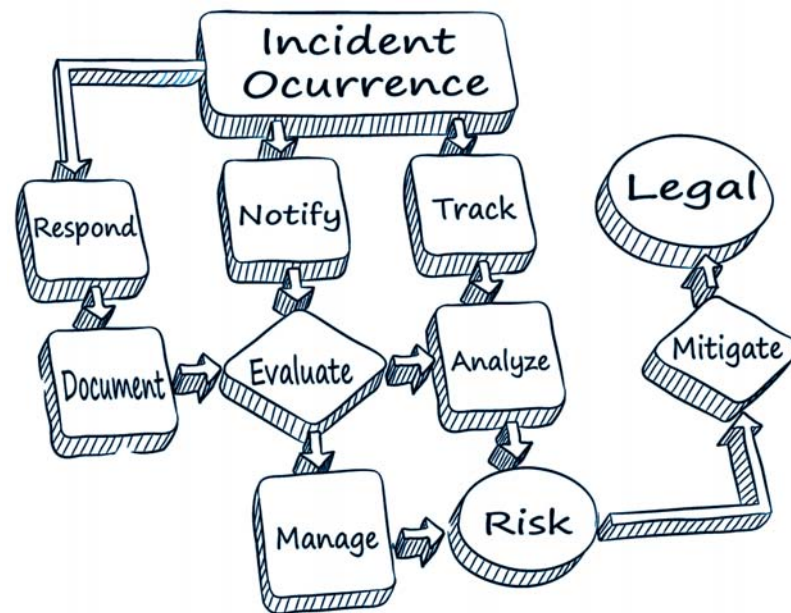
- Brainstorming
- Checklists
- Logic/event trees
- Timelines
- Sequence diagrams
- Causal factor determination

Regardless of the tools used, employers should be able to answer the important questions of what happened, how it happened, why it happened, and what needs to be corrected.

Once root causes are identified, corrective actions can be initiated including engineering controls, process changes, or personal protective equipment (PPE).

The CDC's National Institute for Occupational Safety and Health (NIOSH) lists a hierarchy of controls that you can use to determine how to





implement feasible and effective control solutions.

Most effective are:

- Elimination (i.e. physically removing the hazard)
- Substitution (i.e. replacing the hazard).

Less effective are:

- Engineering controls (i.e., isolating people from the hazard)
- Administrative controls (i.e., changing the way people work)
- Protection controls (i.e. protecting the worker with PPE).

Recommendations for corrective actions might include immediate actions as well as long-term actions such as:

- Employee training on safe work practices
- Preventive maintenance activities that keep equipment in good operating condition
- Evaluation of job procedures with a recommendation for changes
- Conducting a job hazard analysis to evaluate the task for any other hazards and then train employees in these hazards
- Engineering changes that make the task safer or administrative changes that might include changing the way the task is performed.

Documenting the investigation process and corrective actions is important for business continuity and demonstrating compliance.

Organisations that utilise software for these processes benefit from inherent functionality of user and time-stamped audit logs that show who did what and when, automated email alerts and notifications that ensure accountability for closing out corrective actions, and the ability to analyse and explore trends in the incident data.

BENEFITS OF DIGITAL MIGRATION

Organisations who migrated to digital processes for managing this data soon realised the benefits. Even with simple tools like spreadsheets, EHS and business leaders could now look at incident data for all their locations in one place and begin to extract Business Intelligence (BI) that helped to inform decision making. Such insights quickly led to increased visibility into EHS issues and have become the cornerstone of leading EHS programmes.

Commercial software, typically includes dashboards for common safety metrics such as Total Recordable Incident Rate (TRIR), which tracks all illnesses or injuries resulting from an incident or exposure while an employee was on the job, and Days Away, Restricted, or Transfers (DART), which measures the total average of cases in which employees were unable to perform their job duties because of a workplace injury or incident? Commercial software's capabilities usually go far beyond those of spreadsheets for visualising data, such as the ability to correlate injuries on body map diagrams to other data points in order to better understand the trends leading to such injuries.

One company, for instance, includes a patented feature called Parametric Filtering that allows safety leaders to explore data using interactive dashboards and filters. Such analysis is not only useful for identifying trends, it also helps to identify subtle correlations between data points that might go unnoticed with typical reporting tools.

This type of data exploration allows EHS leaders to leverage their knowledge of the site, processes, and personnel, to identify areas of risk and proactively put controls in place.

CONCLUSION

Incident management is a major part of any EHS manager's job. Understanding the requirements is important, but the benefits go beyond compliance. Successful programmes begin by establishing processes for submitting incidents, defining what facts are needed as part of the initial report, and training staff on those processes.

Socialising these programmes as part of the organisation's mission statement can help get buy-in from workers on the shop floor and the executives in the boardroom.

Organisations that utilise software tools create visibility and accountability throughout the incident process. These organisations also benefit from the inherent tracking and analysis capabilities of such systems helping them gain a holistic understanding of their incident programme s, proactively identify areas of risk, and promote a cycle of continuous improvement.

Do you want to keep your workplace safe?

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SAFETY HANDBOOK

For the South African industry and other workplaces



For all who have the safety of workers at heart

Author: S.A. KADIRI
Co-author: D. NIESING

Published by the Safety First Association



CONSTRUCTION SAFETY - H&S WORKPLACE REGULATIONS

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HYGIENE - HAND TOOLS SELECTION - SKIN CARE

WORKPLACE ACCIDENTS - - WORKSTATION DESIGN

Africa Occupational Safety & Health Conference 2022

The Conference that took place at Emperors Palace was held during December and deemed a success by participants.

Conference attendees made new friends and also made new connections in business as well in all aspects of health and safety.

Different speakers gave interesting speeches with slide shows that were impressive, and the main message that was adopted during the 3 days was the aim to "ZERO HARM". However, there was no new information regarding new technologies or application of new technologies in the occupational health and safety system.

Brent Proctor, CEO Campus Risk Solutions opened the conference as the first speaker discussing the state of health and safety technology in South Africa.

Dilley Naidoo, Director Rifle-Shot Performance Holdings introduced the audience to Employee Control of Work which covered minimising harm as well as injuries and death in the workplace. He also covered the use of health and safety technology in risk and harm reduction the workplace.

Dr. Sanjay Munnoo advised participants on FEM (Federated Employers Mutual Assurance Company). This covered statistics on injuries on duty, payments made to victims and their families and what can be done to ease the process and the strive to zero harm.

Covid -19 was given a lot of attention. John Botha, Global Business Consulting; Neil Franklin, Group Safety, Health, Environmental Management AECL and Professor Wim Delva, Founder & Managing Director of Wimmy all covered Covid-19 and the responsibility of the employer towards creating a safe work environment including symptoms, screening, social distancing, sanitisation and the rights of employees with respect to Covid -19 in the workplace. They also discussed how we should move forward after the disastrous effects on business and the economy after Covid-19 and the implications of the after-effects.

Professor Delva basically concentrated on statistics and the effectiveness of testing for Covid-19.

My personal three highlights of the conference were :

1. The discussion from Joep Joubert of Ukuthobela on the behaviour of workers' response towards new technology. Why they resist change especially when it comes to OHS. He also covered how to manage these changes and how to implement them in the workplace.

2. The presentation by Master Drive on advanced driving skills with regard to health and safety was also interesting. Eugene explained how business can



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benefit by having their drivers trained in advanced driving skills, which will lead to safer working conditions. Better driving skills will not only assist employees know how to avoid accidents, but also know when to avoid certain roads and how to keep safe at all times. Attendees were thrilled when Master Drive handed out free driving skills vouchers.

3. Last but not least was the coverage by Nokubonga Ngacmu-Tukulula from Ergonomics Society of South Africa. The society does a tremendous job by assisting all groups of society with ergonomics training and understanding. Many aspects regarding ergonomics remain unclear and the society continues with its education endeavours.

We have a many short comings regarding occupational health and safety. Much of this is either because companies do not have the money to invest in the latest technology that is available, or due to a lack of knowledge.

Resistance to change in the status quo, from management as well as employees also hinders advancement.

In order to move forward and to be able to reach Zero Harm, we need to train, inform and support the employer and employees.

Overall, the conference was informative and enjoyable. However, I found some of the presentations disappointing, and some with outdated information. The food was exceptionally good and the venue was perfect. Our hosts were friendly and accommodating at all times.

On behalf of Safety-First Association, we thank and congratulate Bussynet Advanced Trading on a job well done.

I am sure that the Conference for 2023 will be something to look forward to, so watch out for the notification in our magazine for the conference dates.

ALCO-Safe achieves milestone

Substance abuse is a major problem in most countries. While it is extremely challenging for governments to tackle alcohol and drug abuse on its own, the private sector has largely stepped up and taken responsibility for ensuring their employees are safe in the workplace, while addressing the creation of a culture of responsible consumption at the same time.

As part of robust company policies on drug and alcohol, testing for alcohol and drug consumption plays an important role in achieving safety in the workplace.

ALCO-Safe, a company that has been distributing alcohol and drug testing equipment for close on 50 years recently reached a significant milestone. Since its establishment it has sold 100,000 pieces of testing equipment.

ALCO-Safe has advocated tirelessly against South Africa's ingrained culture of excessive consumption. This has resulted in a steady uptake in industries enforcing alcohol and drug policies and educating their workforce on the dangers of over-consumption to build a safer South Africa for all.

THE EVOLUTION OF WORKPLACE ALCOHOL TESTING

Now that it is an occupational health and safety requirement for all workplaces (particularly in high-risk industries such as mining) companies take the enforcement of their alcohol and drug policies seriously.

Employers now have a duty to ensure that they provide a safe working environment, which includes not allowing intoxicated workers to enter or remain in the workplace.

The development of contactless high-speed breathalysers in the early 2000s made it possible to enforce compulsory testing before people entered the workplace, effectively providing access control by conducting six to seven tests in under a minute, with the only consumables being batteries.

A single testing unit was capable of performing 50,000 tests before requiring recalibration, and has made mass workplace testing more feasible and cost-effective.

Current instruments have advanced to be capable of performing 14 tests in a minute and only require recalibration once every 12 months.

In South Africa, the private sector conducts far more breath alcohol tests in the workplace than the law enforcement sector does in a roadside setting. In this respect, government still has a lot of work to do to reduce drunk driving.

More testing equipment needs to be issued to law enforcement, as well as the training on how to conduct testing in a legally compliant, efficient manner.



By Rhys Evans,
Managing Director of
ALCO-Safe

SUGGESTIONS FOR GOVERNMENT: HARDEN FOCUS ON DRUNK DRIVING

Roadside enforcement of South Africa's drunk driving laws could be better funded out from the sin tax portion of the national budget.

It is also feasible to make it compulsory for alcohol manufacturers and distributors to pay a tax on their production and sale that goes specifically toward programmes aimed at reducing drunk driving. This could be a fund that is created, to avoid money being paid directly to government.

Alcohol-related brands could also be compelled to purchase testing equipment for donation to law enforcement in their region of operation, and then provide proof of having done so. In this way, a percentage of profit goes to reducing the well-documented knock-on effect of alcohol sales.

RAMP UP EFFORTS WITH LAW ENFORCEMENT

More training needs to be conducted for law enforcement agencies, so that they understand the procedure required in order to ensure the evidence produced is sufficient to stand in court and result in successful prosecution for drunk driving offenders.

Additionally, alcohol branded 'drink responsibly' campaigns have proven ineffective, so these budgets should instead be redirected to programmes that assist police officers to enforce the rules of the road.

Offender programmes that work on the basis of suspension of punishment in exchange for going through an educational, rehabilitation programme could be an effective deterrent for younger individuals. This, combined with compulsory regular testing can ensure they are sticking to the conditions of their probation.

Drunk driving is estimated to cost the South African economy R18.2 billion annually. This does not take into account all the other detrimental effects and costs to society associated with the consumption of alcohol.

CONCLUSION

Although the private sector is doing their part to ensure that they provide safe workplaces, these efforts need to extend to looping in and boosting law enforcement efforts to ensure that South African roads are safer for all.



Building workplaces where workers feel safe to speak up

Psychological safety is a shared belief held by member of a team, that the team is safe for interpersonal risk taking (Amy Edmondson, Professor of Organisational Behavioural Science, Harvard Business School).

Low levels of psychological safety can create a culture of silence. They can also create a culture within an environment in which speaking up is belittled and warnings go unheeded. This is especially true when speaking up entails drawing attention to unpleasant outcomes, as is the case for experienced HSE personnel in their prediction of a potential occurrence of an accident. It's easy for others not to listen or believe.

OVERCOMING PSYCHOLOGICAL HAZARDS

Psychological health and safety is the application of risk management framework to mitigate psychosocial hazards in the workplace.

A single person with a clarity of conscience and a willingness to speak up can make a difference. Contributing to the greater good is a deep and fundamental human need.

When a leader, even a mid-level or lower level leader, skillfully brings a voice and a vision, others will follow and surprising things can happen - even culture change on a large scale.

Psychological safety is correlated to occupational health and safety aspects, but it's focus could be differentiated from managing and mitigating the risk of injury to psychological well-being, and it can be segmented into different psychosocial aspects.

EMPLOYER'S DUTY

Improving the psychological safety in a workplace setting involves implementing risk control measures to avert foreseeable potential injury, ill-health or harm to an employee's psychological health - all a duty of care, responsibility and obligation of an employer.

The Code Of Practices for Workplace Safety and Health Risk Management stipulate requirements for Employers to identify, mitigate risk and implement effective control measures for psychosocial and well-being hazards.

Caring for employees by allocating an avenue for empowering and allowing them to voice their concerns out loud without fear and reprisal is needed to prevent miscommunication that could



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lead to drastic consequences of an incident.

To check for trends of psychosocial hazards in the workplace, a psychological safety plan should be implemented. This should include informal and formal communication notice boards, regular dialogues and employee assistance programme to mitigate and address grievances and stress issues.

ENCOURAGE AND SUPPORT EMPLOYEES

Vulnerability can pose problem if punished and will encourage self-preservation, loss avoidance and minimum compliance.

On the other hand, rewarded vulnerability encourages discretionary effort, meaningful contribution and value creation.

For example: You ask a question in good faith about an unsafe condition you had observed, but your boss quickly retorts in front of a group, "What kind of a question is that, you should know the answer by now, on how to make safe the work condition" and he then quickly moves on.

An Organisation of Conscience (OOC) is an organisation with ethical practices to save lives, built in its DNA.

Such OOC shall continuously implement an effective psychological safety plan, with a multi-faceted team comprising of workplace safety and health (WSH), operations, human resources and contracts. They must ensure all inputs are being coordinated and validated by a management representative for the necessary resources to support the smooth validation and pilot-run.

CONCLUSION

Top management must foster a safe operations culture where safety considerations are embedded into all aspects.

Multi-tier of WSH oversight in the whole supply chain must be implemented to plan and deploy, to cross-check and to ensure effectiveness of compliance.

The interest of business shall be closely knitted into greater alignment with WSH.

Employers shall carefully consider the stipulated requirements inside the ISO 45003:2021 Occupational health and safety management - Psychological health and safety at work - Guidelines for managing psychosocial risks.

PPE for women in construction

Notorious for workplace accidents and injuries on the job, construction is a risky business. Between working at heights, operating heavy machinery and hard physical labour, there is a lot of room for things to go wrong.

While personal protective equipment (PPE) is designed to counter many of the hazards involved in construction, most safety wear is generally designed to fit and protect the male physique.

As more women enter the construction, mining and engineering fields there is a growing need to reassess PPE by acknowledging the differences between the male and female anatomy and to provide safety wear specifically designed to cater for these differences. The right PPE will not only protect female workers from injury but can save their lives too.

SAFETY FIRST, FOR MEN AND WOMEN

Employers have a duty to ensure a safe working environment. Part of this obligation includes a duty to ensure that PPE provided is fit for purpose, delivering a level of protection that matches the risk at hand. Accordingly, procurement managers and safety officers have a duty to provide PPE that meets the needs of each and every member of their workforce.

Ordering men's PPE in smaller sizes, or so-called 'unisex' PPE is not enough to fulfil this duty. This can only be done by providing PPE that properly caters to the female form so that women enjoy the same benefits as men - the highest level of protection against health and safety risks, without the need to compromise on comfort.

PHYSIOLOGICAL IMPACT

One of the most effective ways to make previously male-dominated industries more inclusive with immediate effect is to provide the correct PPE for women.

Unisex PPE does not suitably fit female workers. This is not a case of preference in comfort or fit, but rather a safety hazard. In fact, it is such a huge safety concern that it can be said issuing women with PPE that does not fit correctly is on the same level as not providing any PPE at all.

EXPERIENCING RISK DIFFERENTLY

Where there is a fall risk, such as working at heights, this danger is not the same for men and



Desiree Hlubi,
Brand Manager
Sisi Safety Wear

women. Unlike men, the risk of injury for women does not end when the fall is arrested. The polyester webbing typical to men's fall arrest harnesses can cause secondary injury to the female wearer when placed below the bust area. This is because it can ride up and over the bust with great force at the end of a fall.

As such, it is necessary for women working at heights to wear PPE specifically designed for the female bust where the polyester chest strap webbing is replaced with an elasticated webbing that stretches in the event of a fall. This relieves the pressure on the bust area, reducing the risk of secondary injury.

Of further importance for female safety is PPE fit. An adjustable chest strap makes provision for well-endowed women to position the strap in a way to provide comfort and avoid strain. In this way, fall arrest PPE specifically designed for the physical needs of women can play a major role in enhancing confidence and improving productivity.

Another example of physiological inadequacy is visible in safety footwear. Given the differences between the male and female foot, wearing men's safety footwear isn't just ineffective for women, it's also a safety hazard.

The sizing won't be correct and the foot will slide and move from side-to-side which can cause long term damage through calf and hip injuries.

ADDRESSING GENDER EQUALITY IN PPE

The limited availability of personal protective equipment (PPE) for women is a critical workplace health and safety issue that must be urgently addressed by safety and procurement officers. It should not be treated as an additional administrative burden, but rather as a necessary step to ensure that every member of the workforce is provided with suitable, fit-for-purpose protective gear.

From a procurement perspective, there is simply no excuse to continue overlooking the PPE needs of women in the workplace. Where it is not freely available, women in the workforce should know that they have the right to request the procurement of PPE that is designed to tick all the right boxes for their specific physique, ensuring their safety without compromising on comfort and fit.

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Health and safety training for inmates in correctional facilities

The world will not change when good men and women sit in their comfort hoping that someone amongst them will get things done. We will only build a better world when a few good men rise up to ACT.

One of our most fulfilling moments during 2022 was the completion of the training programme we ran for inmates at a correctional facility. It was a great joy and we felt honoured to have been involved.

Freedom can only be appreciated when you visit correctional facilities, this is a blind spot that most of us do not even think of. We appeal to everyone living freely, once in a while, pay a visit to the incarcerated.

This great programme was pulled off by OSHversity Training and Development Company and CELSIR.

I was on my way to work one morning when I heard Joke Aladesanmi, an Executive Director on Celsir on radio talking about the great work CELSIR was doing in correctional centres. It was inspiring. I immediately felt that health and safety awareness training would help inmates look after the centre



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

safely. Not only that, I realised that with such training they may get inspired to take up a career in health and safety afterwards.

This is how the idea was borne and we have now completed the three weeks training.

Already, one inmate who is soon to be discharged is leaving with a high interest in health and safety. We have arranged for him to be admitted into an entry level qualification once he comes out.

THE TRAINING PROGRAMME

The first week of training covered the Basics of Health and Safety Management.

The second week focused on Basic First Aid and CPR.

The final week centred on Hazard Identification, Control and Risk Assessment. This was a brilliant session to end the programme, as a transition from Basic First Aid and CPR covered the previous week.

We started with about 84 participants although only 42 of them completed the programme. They were each issued certificate of completion on "Foundation to Health and Safety Management".

My greatest satisfaction and joy was seeing them

display their certificates in excitement. This is what life is all about.

GRATITUDE TO ALL PARTICIPANTS

Thanks to team CELSIR and members of OSHversity Training and Development Company team for the sacrifices and for funding for this great work. Also thanks to Yetunde Faloye Adeola, Engr. Khalid Agboola and Alfred Eguabor who volunteered for this project. We are grateful to everyone who participated and assisted.

At the end of the programme about seven participants were decorated as Health and Safety Response Marshals. They were left with a mandate to lead and coordinate all health and safety activities within the centre, in association with the centre officials who were also trained alongside them.

This event was the most successful and satisfying way to end 2022.

At the end of programme, we were encouraged with inspiring comments and others who called to commend the programme.

We were also inspired by the good work that the management and officials of Kirikiri Medium Correctional Centre do daily.

The centre also asked us to help build a block with two class rooms to compliment the existing two class rooms to enable the inmates have a decent environment within which to learn. Unfortunately we don't have the funds, but would



encourage others to assist so that together we can achieve this.

Currently, a number of inmates from this centre are writing external examinations towards furtherance of their education. They are working incredibly hard, taking the work seriously and passing their examinations with ease.

Helping to build more class rooms for them would be a great way to go forward with this programme.



SAIOH President's Message

Naadiya Mundy: SAIOH President, e-mail: president@saioh.co.za



As part of our 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.

As I enter my first year as the incoming president of SAIOH from January 2023, this sense of nervousness is just but temporary; as with any new job, comes great support. In my term on National Council, I have grown to appreciate and recognise the outstanding contributions made by all the past presidents, especially, Hennie van der Westhuizen. Besides Hennie's professional support and enthusiasm in the growth of occupational hygiene, he often added a special touch with his interactions. The best way that I can describe him is comparing him to a succulent plant, in that he offers immense richness to any conversation, affording mental nourishment to all. Gratefully, Hennie will remain as immediate past president, so his support and guidance will not be absent.

As per the SAIOH constitution, my tenure will continue through to 2024, as will those of my fellow Council members (details are in the next section).

I look forward to serving with them; as a team, we accept the responsibilities assigned to us and will discharge our duties with humility and dedication for the growth of our profession.

We look forward to an exciting year. The hybrid scientific conference planned for October this year (in Cape Town), paired with the International Occupational Hygiene Association's (IOHA) meeting, is a key event. Regional workshops/seminars driven through our branches also promise to be of immense value. More information on these events will be disseminated through the course of the year.

As I face this responsibility, I look forward to serving you, and appreciate the vote of confidence in electing me to this leadership role. I reiterate my commitment to being impartial, objective and facilitating processes for the growth of our profession and the protection of the health of our workers and communities.

SAIOH Council 2023/2024

SAIOH Council members for the 2023/2024 tenure.

Name	Portfolio position
Ms Naadiya Mundy	President
Dr Hennie van der Westhuizen	Immediate Past President
Ms Karen du Preez	Vice President
Ms Corlia Peens	PCC Chair
Dr Ivan Niranjan	PCC Vice Chair
Mr Deon Jansen van Vuuren	General manager
Mr Norman Khoza	Co-opted member (regional organiser Africa)
Prof. Cas Badenhorst	Co-opted member (ethics and general)
Mr Jaco Pieterse	Co-opted member (strategic planning)
Mr Moses Mokone	Council member (branches and regional organiser Southern Africa)
Mr Wessel van Wyk	Council member(technical)
Mr Tebogo Mpshe	Council member (marketing)
Mr Oscar Rikhotso	Co-opted member (ethics)
Ms Kate Smart	Chief administrative officer
Ms Lee Doolan	PCC administrator



National council feedback

Naadiya Mundy: SAIOH president, e-mail: president@saioh.co.za
Deon Jansen van Vuuren: SAIOH general manager, e-mail: deon.jvvuuren@gmail.com
Nico Potgieter: Co-opted member, email: nipotgieter101@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. Several objectives/targets have been met. All Portfolio objectives were received in January 2023.

The next five-year strategy plan was finalised

at a special strategy meeting in February 2023, it will now be circulated to all SAIOH members and launched at a special meeting in 2023.

Ethics

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

The first task was to develop a Memorandum of Incorporation (Moi) to replace our current Constitution. We have received the second draft from NGO Law and are finalising our comments. This needs to be circulated to all SAIOH members and approved at the previously mentioned special meeting.

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. The recording of the Ethics webinar presented

by Terry McDonald of BOHS during the 2021 Annual Virtual Conference was sent to all attendees and those who purchased the recording.

During the 2022 conference, Terry McDonald presented a hybrid Professional Development Course (PDC) on Ethics in the occupational hygiene environment. A multiple-choice assessment/test (MCQ) was developed, based on the 2021 webinar. This is in a Survey Monkey format that SAIOH uses. There is a time limit of 30 minutes, and only members who qualified (attended the course) will receive a passcode and access to the test. Everyone will have three opportunities to complete the test at weekly intervals, with the system automatically marking the paper and notifying the candidate of their result. The required pass rate is 60%.

A similar MCQ for the 2022 Ethics PDC is currently being developed, and the same rules will apply. During 2023, further ethics sessions will be offered at the branch workshops, and at the 2023 annual conference.

SAIOH Branch activities

The Western Cape branch hosted their fourth in-person meeting on Friday 18 November 2022, combining it with a lawn bowls social event afterwards. A presentation was given on dermal exposures, by Lynicka Paulse of ESKOM, Koeberg. Forty-three occupational hygiene practitioners (OHPs) attended the meeting.

The Gauteng branch held their fourth successful virtual meeting on Thursday 1 December 2022. Peter-John (Jakes) Jacobs gave a highly informative presentation on real-time occupational hygiene sampling, providing actionable data when needed most. Fifty two persons attended.

The KZN branch held a specialist workshop on occupational hygiene statistics: the Expostats course in a webinar format. Prof Jerome Lavoue (University of Montreal in Canada), who was instrumental in developing the software, was the online lecturer. The workshop took place on Thursday 1 December 2022. Unfortunately, only 33 persons attended.

A few online meetings and some e-mail correspondence took place between the SAIOH administration, the SAIOH regional organisers for Africa (Norman Khoza) and southern Africa (Moses Mokone), and the newly registered Botswana

Occupational Hygiene Association (BOHA) - previously the SAIOH Botswana branch. The discussions revolved around aid from SAIOH with BOHA's development as a national occupational hygiene association. Further meetings are envisaged for 2023. **Breaking news:** BOHA requested info from SAIOH on the requirements to pitch, to present the 2024 SAIOH Annual Conference in Botswana.

The newly formed Mpumalanga branch of SAIOH held their first meeting in person on Friday, 03 February 2023, at Anglo Coal's Thungela Resources Training Centre, Emalahleni. A very practical and insightful demonstration was held by Dräger SA, re differences between FFP2 respirators ("Mr Dusty"). This was followed by an eye-opening presentation on the newly amended DoEL Noise Induced Hearing Loss regulations, given by Jaco Pieterse. Some 32 persons attended in person. Nominations were received for the new MP Branch committee. SAIOH applauds the revival of this dormant branch and wishes to thank Christa de Roubaix and Liezel Strydom for organising this meeting. A warm welcome to the new SAIOH Mpumalanga branch and its members.



IOHA and OHTA feedback

The Occupational Hygiene Training Association (OHTA) and IOHA continue to publish their newsletters. Links are e-mailed to all SAIOH members and published on the SAIOH website: <https://www.saioh.co.za>. Please note OHTA's new website: <https://www.ohtatraining.org>.

Garth Hunter, SAIOH's representative on the International Occupational Hygiene Association

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 during 2023.

Our second technical committee started developing technical procedures and a SAIOH position paper on heat stress management. The follow-up meeting, assisted by Mr Schu Schutte, took place on 7 December 2022. This Committee will continue doing research on heat stress. Its focus is to develop a technical paper. It also enabled SAIOH to provide comprehensive and relevant comments on the recently released Physical Agents

(IOHA) Board and its National Accreditation Recognition Committee (NARC), explained the proposed fee structure for the IOHA NARC certification schemes. IOHA is also investigating a new capitation fee structure. The IOHA newsletter: Global Exposure Manager (GEM), was published in the November/December 2022 issue of Occupational Health Southern Africa journal.

Regulations (the old Environmental Regulations for Workplaces). The next meeting is scheduled for early 2023.

Breaking news: The Gauteng branch agreed to host a paid workshop on Heat stress in May 2023. Watch this space.

SAIOH gave detailed comments on the newly released DoEL Noise Induced Hearing Loss (NIHL), and Physical Agent Regulations on 21 January 2023.

The Council Technical co-ordinator is, furthermore, busy finalising a position paper on real-time monitoring. As soon as this get the green light from the SAIOH PCC Exco, it will be circulated to all SAIOH members and Stakeholders.

Annual SAIOH scientific conference

The 2022 SAIOH annual scientific conference took place at the Birchwood Hotel and Conference Centre in Gauteng from 26 - 28 October 2022. The Conference was an extremely successful hybrid event, i.e., face-to-face and via live streaming, hosted by the Gauteng branch. The conference, titled: '*Occupational Hygiene controlling the future*,' was well received.

SAIOH received a large financial donation from one of its stakeholders, Biograde Laboratory. Apex Environmental pledged sponsorship to pay all the fees for a worthy registered occupational hygiene assistant (ROHA) to attend OHTA's core-modules, and to write the Occupational Hygiene Training Association (OHTA) exams upto the International Certificate in Occupational Hygiene (ICertOH) qualification - a real-life changing opportunity! Huge thanks go to Willem Wepener and Sean Chester (and his team), respectively.

SAIOH developed a dedicated web-page for the Conference on the website, and a comprehensive conference notification flyer/Mailchimp with registration, sponsorship, exhibitor invitation details and links at the time, to ease administration and registration. The conference technical sub-committee finalised the 2022 SAIOH conference programme, which was circulated before the start of the conference. It is believed that the substantial number of last-minute registrations was due to the quality of the programme.

An abstract book was produced and sent to all

online attendees, as well as printed and placed in the conference bags for those who attended physically. The abstract book contained a message from the SAIOH President (Dr Hennie van der Westhuizen) and the 2022 Conference Organising Committee Chair (Ms Lené Niemand, the Gauteng Branch Chair), the logos of all the sponsors / exhibitors, the final conference programme, all the abstracts, and the bio sketches of the presenters.

The five PDCs were a huge success: 78 people attended the PDCs in person, and 45 attended the two on-line (ethics and ventilation PDCs) - 123 in total. It is envisaged that, in future, more PDCs will be presented, all of which will be live streamed.

The conference sessions were attended by 142 persons per day, with 66 persons on-line - a total of 416 over the 1½ -day conference. The hybrid model is deemed a success and will continue to be explored and improved. In total, almost 540 persons attended the PDCs and conference.

SAIOH took the decision to present awards for the preceding COVID years, i.e. 2019, 2020 and 2021. A total of 27 awards were presented. A new award was introduced for the best branch of the year. The Western Cape and Gauteng were the winners for 2021 and 2022, respectively. Every award included a framed certificate and a monetary prize.

The SAIOH 2022 Annual General meeting (AGM) took place at the conference during the afternoon of 27 October 2022. All reports were presented, and financial statements were discussed. One hundred

and sixty-three persons attended the AGM in person, and 74 attended online. This forms a key part of SAIOH's Strategic Portfolio #06 - 'good corporate governance.'

The 2023 Conference will again be a hybrid event. It will be hosted by the Western Cape branch in Cape Town. It will coincide with the International

New SAIOH Website

SAIOH engaged website developers to overhaul the current website - specifically to allow integration with the Member Management System (MySAIOH). The framework, with the necessary integration, was delivered. The SAIOH

Occupational Hygiene Associations' 2023 fall Board meetings, which SAIOH will host, just before the SAIOH conference in Cape Town, enabling SAIOH to source a host of international speakers from these meetings. The Conference Organising Committee already had their first meeting. We will keep our members up to date on this.

administration teams are progressing with the implementation and population of the new website. Special assistance will be brought in soon to speed up its finalisation.

Communications

SAIOH published its newsletter and Presidents' page in two electronic media formats, namely *Occupational Health Southern Africa*, and *African OS&H* magazines. These publications are issued every two months (with the most current issues of the journal and magazine published in February 2023). The links will again be sent to all members via our Mailchimp system and posted on the SAIOH website. Six issues of these two publications were sent out to all SAIOH members in 2022. Ms Jabu Mhlophe (Department of Employment and Labour (DoEL)) published a report on the new Hazardous Biological Agents (HBAs) in the Sep/Oct 2022 issue of Occupational Health Southern Africa.

The OHTA - Global Link newsletter was published again in September 2022, with a video insert of Naadiya Mundy. Well done, Naadiya. The newsletter was posted on the SAIOH website and sent to all our members by Mailchimp.

SAIOH communicates daily with its stakeholders via e-mails, phone calls, and virtual meetings, about important news, technical information, legislation changes, new Standards, occupational hygiene job opportunities, occupational hygiene products and services, courses, and webinars on occupational hygiene, health, occupational and environmental safety, etc.

Several online events and webinars were recently hosted by our stakeholders and attended by SAIOH management, members, and staff:

- The Occupational Hygiene Approved Inspection Authorities (OH AIA) Association held a virtual meeting on Friday 2 December 2022. Tatjana Radojevic-Rogowski from SASOL facilitated a workshop on the latest released DoEL Noise Induced Hearing Loss (NIHL) Regulations, and the Physical Agents Regulations (PAR) (previously Environmental Regulations for Workplaces). The aim of this workshop was to collate comments from the OH AIA Ass and its AIAs on these Regulations. Twenty-three persons attended.
- A presentation about collaboration in occupational hygiene was given at the 2022

SAIOH conference by Jaco van Rensburg, Director of the OH AIA Association. The OH AIA also had a stall at the conference.

- Workplace Health Without Borders (WHWB) held their AGM on 21 November, and a webinar on control banding and risk assessments, coordinated by Dr David Zalk, on 29 November 2022.
- SAIOH circulated the DoEL amendments to the HBA regulations, and the Diving Regulations, dated 31 October 2022, to all its members in November 2022.
- On two separate dates (30 November and 1 December 2022), the DoEL virtually launched the newly published NIHL Regulations (attended by 59 OHPs) and the PAR Regulations (attended by 47 OHPs), respectively. Both webinars were hosted by SAIOH on its Zoom platform.
- On 17 November 2022, Deon Jansen van Vuuren, the SAIOH General Manager, presented SAIOH and the PCC Certification system to 4th year Tshwane University of Technology (TUT) Environmental Health students; 40 students attended in person and five joined online. The PCC administrators received 35 applications from TUT to sit the ROHA (student) assessments.
- SAIOH circulated the Mine Medical Professionals Association's (MMPA) Congress invitation, programme, and registration details. The Congress took place, in person, at Emperors Palace on 2 and 3 December 2022.
- SAIOH circulated the Indoor Air Quality Association of Australia's (IAQAA) webinar on the importance of indoor air flow in air quality assessments, presented on 16 December 2022.
- In 2023 SAIOH partnered with several new international webinars, these will be reported in the next issue of this magazine.

Breaking news: The American Industrial Hygiene Association (AIHA) invited SAIOH to be one of their International Partners in their exciting HCA CARE programme. Watch this space.



From the Professional Certification Committee (PCC)

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

Resolutions

Two resolutions were confirmed, following debates and discussions:

1. There will no longer be a limitation on the time that a ROHA can remain in the SAIOH certification system; and
2. The PCC will recognise the BTech degree in Environmental Health as meeting the PCC's qualification requirements at the ROH level (written into the Quality Management System (QMS) as an exception rule).

The necessary Mailchimps were sent to all the members, and edits were made to the QMS in this regard in November 2022.

The PCC Executive Committee held a meeting on 6 December 2022 to address the discrepancies between the websites of the South African Qualifications Authority (SAQA) and SAIOH, on the qualification requirements for all three designations/certification levels. The updated document was sent to SAQA on 7 December 2022.

Table 1. Summary of SAIOH PCC certification assessment results for 2021 YTD (31 December 2022)

Certification Categories	Written assessment				Oral assessment			
	Assessed n	Passed n	Failed n	Pass Rate %	Assessed n	Passed n	Failed n	Pass Rate %
OH Assistant	166	151	15	91.0	166	151	15	91.0
OH Technologist	61	32	29	52.5	49	36	13	73.5
Occ. Hygienist	51	21	30	41.2	29	19	10	65.5
TOTAL	278	204	74	73.4	244	206	38	84.4

Oral Assessment Improvements

The PCC technical teams continue to revise the PCC oral assessment format and questions in line with the occupational hygiene self-assessment tool.

Two PCC technical teams are working in parallel. The first is updating the SAIOH self-assessment tool and revising the PCC oral assessment format.

The second is developing questions and the required answers. Improvements in the assessment format are to ensure that the growing field of occupational hygiene is covered and that the assessment format and tools still are 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, and occupational hygiene training providers and institutions) and the development and management of assessment and examination systems, where needed.

The OHSF was instrumental in co-ordinating the development of a bulk asbestos sampling and analyses training course.

Julie Hills, Celia Keet and Karen du Preez spent a lot of time and energy in developing the necessary course training materials.

The OHSF also takes part in the W201 MCQ Consortium, comprising WHWB, the AIHA, SAIOH and the AIOH. The Consortium met again on 1 December 2022.

This working committee is developing and

verifying MCQs, which will be on a database that will be accessible to all assessment paper developers to use in the OHTA W201 papers and, in SAIOH's case, also for the ROHA papers.

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. It has developed a matrix to evaluate the occupational hygiene content in line with the 50% occupational hygiene subject requirement.

North-West University's and TUT's four-year Bachelor's degrees were recognised by the OHSF as meeting the qualification criteria at the Registered Occupational Hygienist (ROH) level. The OHSF organised a virtual meeting with the University of the Witwatersrand School of Public Health and had several e-mail exchanges on the MSc Med in



Exposure Science degree. The OHSF evaluated the University of the Witwatersrand's Recognised Training Provider application and regrettably informed Wits SPOH that the content did not meet the required occupational hygiene criterion. However further discussions are envisaged.

The OHSF is currently evaluating the Cape Peninsula University of Technology's (CPUT) OH programme.

All tertiary institutions that offer occupational

hygiene qualifications are encouraged to contact the PCC administrator for information regarding application for recognition (lee@saioh.co.za).

Details of recognised training providers and recognised qualifications will 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.



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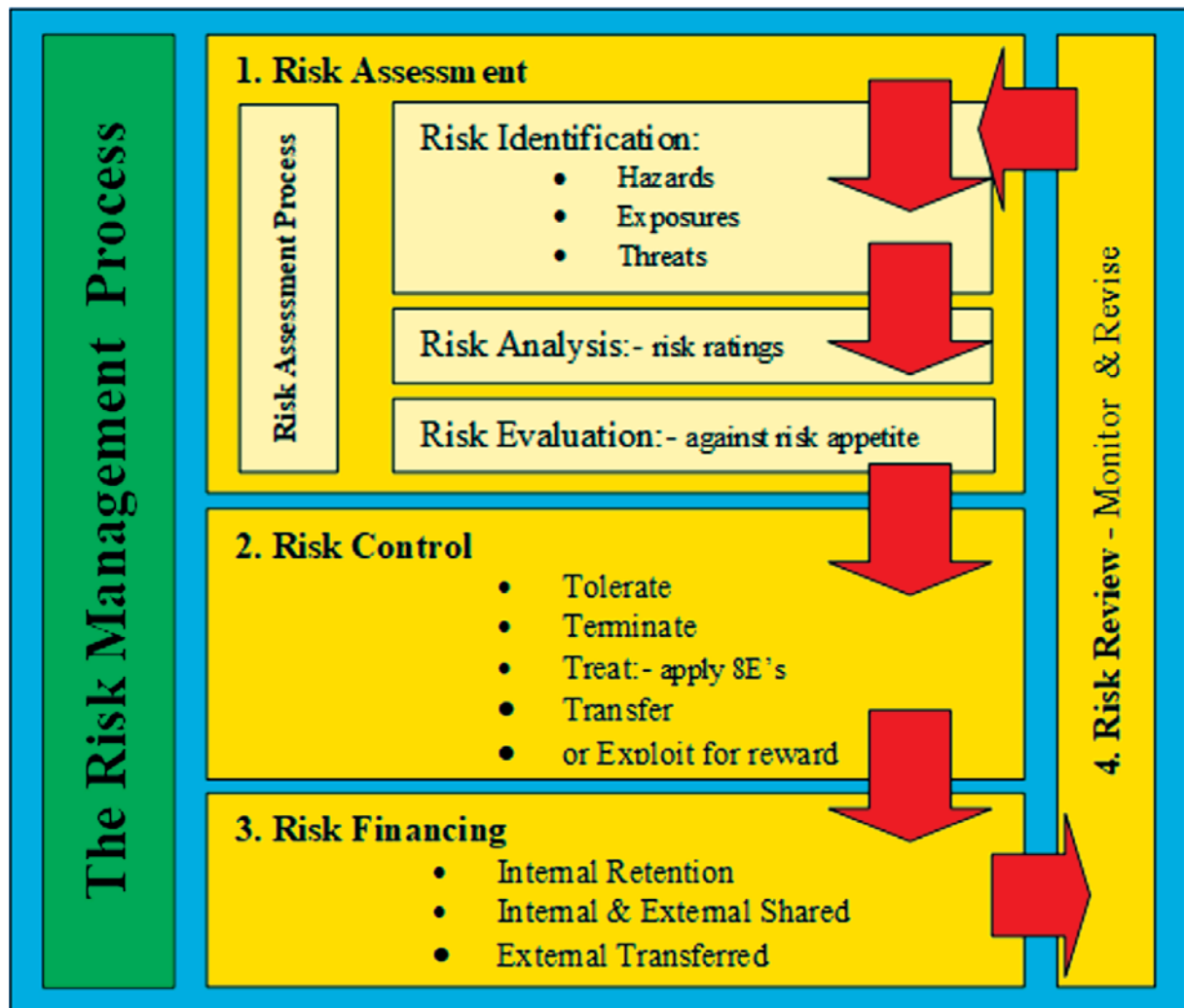
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The 2018 SANS/ISO 31000 Risk Management Standard presents the Risk Management Process which incorporates a 3-stage Risk Assessment method, of Risk Identification, Risk Analysis and Risk Evaluation, which should be performed within the Plan-Do stages of the Plan-Do-Check-Act Management Systems programmes for managing quality, environmental, OHS, risk, etc.

Benrisk Consulting provides a 1-day course on Risk Assessment where both the “PEPMELF” Baseline Risk Assessment and Job-Task Steps Risk Assessment methods are presented.

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This Benrisk Consulting course is presented by the Author of the “PEPMELF” Risk Assessment methodology that was originally published in 2006, with the 2nd edition published in 2022.