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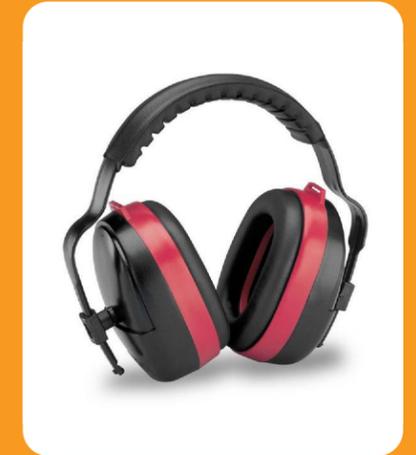
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COVER STORY

Impacts of Fall on family member

by *Abbi Taylor*

Safety is and always will be a problem until we all make it personal to us which my dad (Jason Anker) always tries to drill into everyone he meets when delivering his presentation. We need to start working as safe as we can, not because we are told to but because we choose to. Those precious '5 seconds' my dad always talks about during his presentations are vital and can be the difference between having an accident and going home safe, it is all that was between my dad and his life in a wheelchair.

So many times, I have sat and listened to my dad's talk and the discussions during when guys share the reasons they take shortcuts or don't do things safely e.g. pressure to get the job done on time, money pressure to complete the job, pressure from home, but the only thing that should matter is you going home to your loved ones. Not one excuse or reason is enough for anyone to risk their safety.

I have now been working alongside my dad for 7 years and I have not looked back once. I first came to work for P2BS to help dad out with his workload, but I soon understood what this was all about and the passion to stop this happening to others just came naturally.

The thing I enjoy the most is seeing my dad Jason, and some of our other speakers including Matt Hazelton out there sharing their stories which are so very personal and emotional but their drive to do it which I find so inspiring. I love seeing them grow in confidence and the feedback we receive from the clients themselves but also the workers who have sat in and have made changes in their behavior to help them work more safely directly after seeing the live presentations.

I was 3 years old when my dad has his accident and I am now 30 years old and that choice he made that day because he didn't dare speak up is still affecting me and my family today.

Growing up it was not something that was ever really spoken about and that did make things difficult as it was always there.

When I was in secondary school becoming a teenager having new friends, social life, etc dad's anxiety worsened and we would argue a lot which in the end resulted in me moving in with my mum even though I didn't want to. I had lived with dad my whole life, but it was just too difficult to live with him.

Things did start to get better when dad started to deal with things, and we got our relationship back on track.

It's been 5 years now since I got married and it was an amazing day, but it still had its moments. To us walking me down the aisle was fine, we were happy (even though he did keep running over my dress), but we understood why it was sad for everyone else. In the evening we had Scottish Caleigh dancing but because of dad's wheelchair and the high tempo dancing it was he had to sit at the side and watch all our family and friends do that and that did upset me as he wasn't part of that moment.

When I do go on-site with my dad and share my story as soon as I mention my daughter's name, I usually end up crying. Once she was born it suddenly made us realize that it had gone full circle and now she is being affected by something her grandad did all those years ago and she will miss out on certain things as we did as kids. The ripple effect is spoken of a lot when we speak about accidents, but we never knew that this would still be going on 27 years later after my dad's accident.

I think I always end up getting upset because obviously, it is so personal to me, but I can't stress hard enough to the guys how important it is to take safety seriously and put it first above anything else same with your health and wellbeing. At the end of the day, it is all that matters.

You would think with time it would get easier, but it just continues. Just those normal moments, it is not always the big ones, a good example is when Elle runs to her grandad for a hug and he cannot pick her up. My dad missed out on so much with me and my brother growing up due to his disability and now he is having to relive that all over again as a grandad which is difficult sometimes for us all.



Looking back now dad's problem was not the wheelchair but how he dealt with it.

I am lucky that my dad has found such resilience and enjoys the good that he has in his life rather than focusing on what he cannot do or has not got which is utterly inspiring to me.

I have so much admiration for my dad and how strong he is but I still want to make it my mission alongside him to make people fully understand the implications a wrong decision can have and make sure it won't happen to anyone else.

In 2018 Jason woods invited Dad out to speak at the IPAF Middle East Convention in Dubai. He had also arranged an itinerary for Dad while he was out there, including meetings with both the Dubai and Abu Dhabi H&S organizations, presenting on a live construction site and the highlight of his visit was to one of the Al Naboodah work camps, to watch a live worker engagement theatre workshop. My Dad was also excited to present to the management teams of the prestigious Expo 2020 project and on top of a fantastic week, Dad was awarded

an award at the IPAF event for his contribution to safe working at height. Dad made a return visit to the UAE in 2019 presenting at the HSE Series Middle East event in Abu Dhabi where he also did a presentation in a hangar for Etihad.

Before the Covid-19 pandemic hit we had our usual busy diary which was fully booked for the majority of 2020 with some initial dates in for 2021 and this all changed drastically.

During the first few months of lockdown, we were unable to do anything, but we began to work on our idea of the virtual subscription model. Even though the rules were in place it was still a big concern for us that construction, rail, housing works were all still going ahead, but health, Safety, and Well-being were probably not being made a top priority with a lot of companies reducing their safety teams within the businesses.

This 'Virtually Speaking' platform allows P2BS the opportunity to speak around the world with its global reach with the idea of holding live site visits when restrictions have been lifted. Virtual presentations will never be as impactful as a LIVE room presentation, fact. However, there are benefits to the Virtual talks that start to balance out the flexibility to show repeat recorded broadcasts at convenient times, the ability

to capture different shift patterns. We have also noticed that we seem to get more questions at the end of sessions and maybe this is that people feel more confident to type in a question that raising a hand with other people sat next to them.

There is also one other major benefit and that is the environment. The virtual talks reduce the need to travel to an event, accommodation, refreshments, the actual time lost on production can be minimized.

We offer a full service of Live/Virtual and live site visits where we can follow all the social distancing requirements for full workforce engagement.

Abbi Taylor
abbi@p2bs.org

Abbi is the MD of Proud2bSafe but also acts as Jason's assistant as well as dealing with all sales and booking queries for the Proud2bSafe team. "I love my job and I love what the company stands for, I was just 3 years old when my dad had his accident at work, and it is now 20 plus years after his accident and it is still affecting me and my family today. I aim to stop this from happening to any other families".

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FALL PROTECTION

Working at Height for WSH

by Dr. Karen McDonnell

Although the UK is one of the safest places to work in the world, with consistently one of the lowest rates of fatal injury across the European Union, I am often saddened and disappointed whenever I read the [annual injury statistics](#).

That's because people are still having what I call "old" accidents, which still happen in the modern-day workplace despite decades of advancement in occupational safety.

Falls from height are one of these types of "old" accidents. They consistently account for the most deaths to British workers, and on top of this, the cost of people falling from a height over the past five years is estimated at around £800million, with many people needing lifelong care.

Outside of the workplace, falls are also one of the biggest causes of accidents resulting in death or a trip to a hospital emergency department.

It's an issue that is so prevalent, that it has even been recognized by the UK Parliament.

Last year, a group of politicians and industry leaders (called the All-Party Parliamentary Group on Working at Height) launched a report called *Staying Alive: Preventing Serious Fatalities while Working at Height*. After extensive research and stakeholder consultation, it made four recommendations and highlighted two opportunities for further consultation:

- To enhance the reporting of incidents (specifically under the UK Reporting of Injuries, Diseases, and Dangerous Occurrences Regulations) without placing additional burdens on industry
- To appoint a confidential reporting body for all near-misses and accidents that do not qualify for reporting under the Regulations

- To extend safety campaigns to industries outside of the construction sector
- To extend a system like Scotland's Fatal Accident Inquiry process to the whole of the UK
- Create a digital technology strategy, including tax relief, to enable SMEs and sole traders to invest in new technology
- To conduct a major review of work-at-height culture, including an investigation into the suitability of legal financial penalties.

The work of the All-Party Parliamentary Group continues. At the last meeting of the group in September, the discussion focused on working at height and preventing falls in rural locations. The Vice-Chairperson, Member of Parliament Chris Stephens, explained that although there is a common assumption that falls from height exclusively occur in the construction sector, in fact, agriculture, forestry and fishing have the highest rates of workplace death across the UK, with falls from height accounting for 15 percent of the total number in these sectors.

Here at RoSPA, we have been working on tackling falls from height with The Ladder Association, which is the membership body for those businesses that require elements of working at height in the UK.

Last year we partnered up to launch the [Get a Grip](#) national ladder safety campaign, promoting the safe use of ladders both at work and at home. The control measures for fall prevention are universal, whether you're at work or home, and wherever you are in the world.

We wanted to use the campaign to tell stories to deliver the vital safety messages; while statistics and safety information work to highlight the issues, nothing changes attitudes and behavior like emotion and personal experiences.

Quite often, as a safety training and education organization, we interact with larger companies that are willing and able to implement proper policies and practices, however, we recognized that we needed to start reaching those sole traders or small to medium enterprises with a handful of staff – where time is money, and corners might be cut.

The Get a Grip campaign aims to do exactly that.



Jason Anker, a friend of RoSPA and someone we work very closely with on this issue, is passionate about telling his own story to ensure that he prevents falls from height. In 1993, when he was 24-years-old, he fell 10ft from a ladder while working on a roof, fracturing his back and becoming paralyzed from the waist down. Jason now works as a motivational and behavioral change speaker, giving talks to companies about his experience.

However, for the Get a Grip campaign we went one step beyond [Jason's story](#), instead of telling that of his daughter, [Abbi](#), and the impact his fall had on her and her family's life.

Utilizing an emotional video, Abbi speaks of her experience growing up with a paralyzed father (he had his fall when she was aged just three), and how in later life he was not able to walk her down the aisle or dance with her at her wedding, and today cannot pick up and play with his granddaughter. In a blog, she also

recalls how he couldn't do the things a normal dad could do, like take her swimming, play soccer or teach them to ride a bicycle.

While we've been promoting the video and blogs to key stakeholders, her story was also reproduced on a pocket-sized, downloadable leaflet.

Great strides are being taken in tackling this issue head-on in workplaces, but the great thing about the Get a Grip campaign is that personal stories will always get to those hard-to-reach places mentioned above, and beyond that, will make people think about what they are doing in their day-to-day home lives too.

The vast majority of falls and other unintentional injuries occur in the home or leisure environments, away from the workplace, so as employers we need to ensure we are engendering in our staff behavior which they will carry over the threshold into the outside world. While we can be guilty of leaving good health and safety practice behind when we clock out every day, stories such as those from Abbi and Jason will literally "hit home"; they won't be forgotten in a hurry, meaning we will be thinking about them whether we're welding at 30ft or hanging festive decorations at the top of an 8ft ladder.

When we recognize that our people are at the heart of organizational sustainability, we need to ensure that our health and safety messages are carried by them wherever they are, so we can address the huge burden – not to mention impact on the bottom line – that home-based unintentional injury can create.

Stories help us to put people first. They are what lies behind the statistics, the reason for our policies, and most importantly they help people to understand and react.

I would urge all health and safety managers dealing with working at height issues (and even those who aren't) to take a look at Abbi's story. You can find out all about her and her campaign on [The Ladder Association website](http://TheLadderAssociation.com), or her blog at www.rospa.com/abbi. OSH managers can also read Jason's story at www.rospa.com/jason.

For those wanting to see the All-Party Parliamentary Group's recommendations for solving the problem of falls from height in the workplace, and to track its progress, see www.workingatheight.info.

Dr. Karen McDonnell
RoSPA's OSH Policy Adviser

Dr. Karen McDonnell
CFIOSH, OHS Policy Adviser, RoSPA

Karen influences and motivates others to think about a 'whole person whole life' approach to accident prevention. This year, as many businesses returned to work, she stressed the importance of remembering all the risks inherent in construction amidst all the focus on making sure workplaces were COVID-secure. She has also brought attention to driver safety, supporting increased sentences for dangerous driving. Karen is Head of RoSPA Scotland and an IOSH Past President, developing as a professional.



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SEASEAL Storm Surge Barrier

by Sigurd Melin

Many coastal cities suffer from flooding when winds, low air pressure, and tide coincide, and the problem will escalate in the future due to rising sea levels. Therefore, storm surge barriers have been constructed to protect some cities, like London, Saint Petersburg, Rotterdam, and Venice. Many other cities around the globe consider following in the years to come, but the extremely high costs are a major deterrent.

Building a protective barrier across the harbor entrance is a very costly project, but it is the gates that are the biggest technical challenge and cost the most. The free opening needs to be wide and deep enough to allow for commercial navigation. This requires giant mechanic constructions with moving parts the size of a hydroelectric power plant. Machinery needs to be 100% reliable.

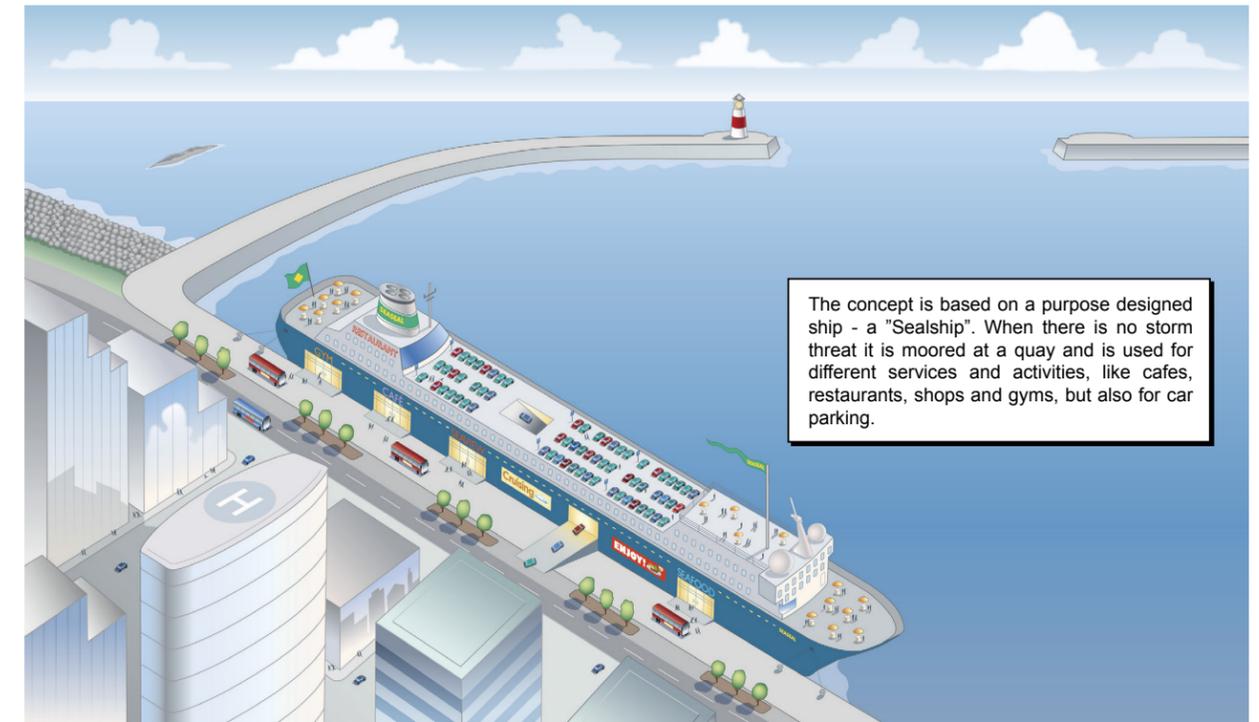
Swedish inventor Sigurd Melin, the developer of the "NOAQ Boxwall" free-standing flood barrier, had noted that many coastal cities were discussing the problem, but also that they hesitated to go on due to the huge costs. Recently the US Corps of Engineers presented a plan to protect the Houston area in Texas with this type of storm surge barrier. The cost? 26 billion USD.

Sigurd came up with an idea to instead use a purpose constructed ship as a sluice gate. Such a solution make use of well-known (shipbuilding) technology, it allows for openings that are both wide and deep, and it eliminates the need for costly large scale mechanics. And it only requires one moving part - the ship itself.

The geometry of the ship's hull would match that of the opening between the piers in the harbor entrance. When a storm is approaching the ship should be positioned in front of the opening and submerged onto a sill by taking in water, either in certain ballast tanks or directly in the hull. When the storm had passed the ship should be pumped dry and return to its ordinary quay berth.

But it is more to this. An important feature of the concept is that the ship is designed for other purposes when not serving as a sluice gate, i.e. during the 360+ days a year when there are no dangerous storms in sight. Moored alongside a quay in the city center it provides valuable space for commercial activities, like restaurants, shops, gyms, etc. It may also serve as a floating multistory parking garage. Hereby the "sluice gate" will more or less pay for itself, which means a substantially lower total cost for the project, compared to the traditional solution with stationary gates having one function only.

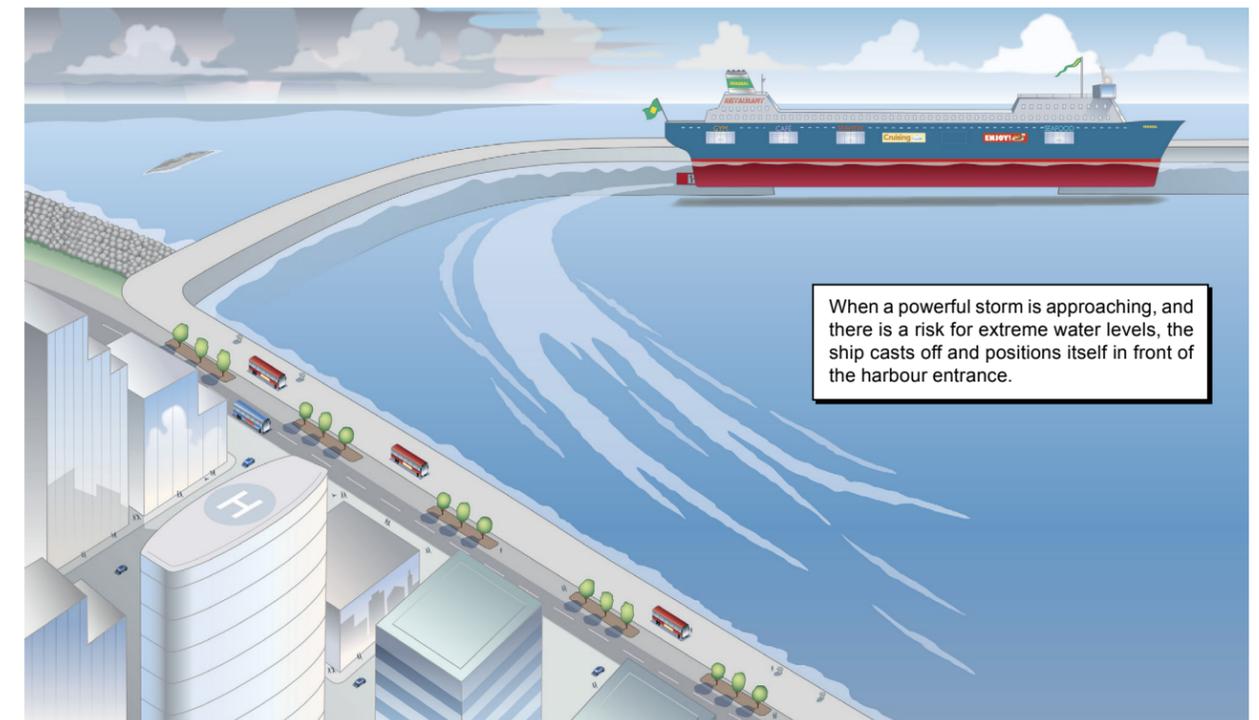
This is how the SEASEAL works - 1



The concept is based on a purpose designed ship - a "Sealship". When there is no storm threat it is moored at a quay and is used for different services and activities, like cafes, restaurants, shops and gyms, but also for car parking.

© Sigurd Melin 2017 Graphic form: Leif Abjörnsson

This is how the SEASEAL works - 2



When a powerful storm is approaching, and there is a risk for extreme water levels, the ship casts off and positions itself in front of the harbour entrance.

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This is how the SEASEAL works - 3



© Sigurd Melin 2017 Graphic form: Leif Åbjörnsson

After having patented the idea Sigurd and his wife founded a new company, Seaseal Port Protection AB, to commercialize the idea. They started by approaching the Swedish port of Uddevalla, which had recurrent problems with flooding from the sea. The city adopted the idea and carried out a prestudy, which is now being discussed.

“Although the shipyard of Uddevalla once built the world’s biggest supertanker, it is still a small city, which means a Seaseal solution here will not be too big and expensive. It may very well serve as a pilot project for larger cities, like

Copenhagen, Boston, New York, Houston, etc”, says Sigurd Melin.

“Even if we can restrict global warming to some few percent, sea levels will continue to rise for centuries, which means that all coastal cities, sooner or later, need to protect themselves. Or surrender. Investing in a traditional mechanical storm surge barrier may save the city, but it may instead end up in another misery – bankruptcy. We are convinced that Seaseal offers a solution where you can save money while saving the city”.

About Sigurd Melin

Sigurd Melin is CEO and Board Chairman of Swedish company NOAQ Flood Protection AB. He is also the inventor of the main products of the company, the mobile self-anchoring flood barriers NOAQ Tubewall and NOAQ Boxwall. He holds a Master of Science in Engineering, Degree Programme in Surveying, from the Royal Institute of Technology in Stockholm, and run for many years his own cartographic firm, Terra Firma. In recent years he has devoted himself to developing ideas for the protection against disasters, like the “Seaseal” concept for protecting coastal cities against storm surges and “Seaward”, a local autonomous tsunami alarm system.



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SAFETY LEADERSHIP

Health and safety: a career across borders

by NEBOSH

Topic: Overview of NEBOSH qualifications emphasizing the importance of international qualification and what it can lead to as an individual especially in the developing regions.

Hello and welcome to the first of four NEBOSH columns for World of Health & Safety Asia. It is a privilege to be invited to contribute to a publication that shares the same values and vision as our organisation; saving lives.

As we write this column amidst the COVID-19 pandemic, never more so has the focus for business been on the health, safety and wellbeing of employees – and the health and safety professionals who look after them. Despite the high levels of responsibility, this career path can be very rewarding and is growing in popularity; industries change but risk will always remain and employers will always need skilled people who can manage it.

Life as a health and safety professional is incredibly varied. You can be involved in a huge range of tasks, work with all kinds of people, earn a good wage, work in nearly any industry and country and have progression

opportunities all the way up to Board level. Most rewarding of all is the impact you can have on people's lives, keeping them safe from injury and illness. What's more you don't need a university degree to get started – organisations really value hands-on experience and practical, relevant qualifications like those offered by NEBOSH.

For many people, achieving a NEBOSH International General Certificate in Occupational Health and Safety – NEBOSH's most popular qualification – provides an introduction to the health and safety profession, how diverse it is and the practical skills they will need in the workplace. And, because it's so widely recognised by employers, the certificate gives successful learners the credibility they need to stand out from the crowd and set them on the path of a successful career.



Umer Changaiz's story

Originally from Pakistan, Umer Changaiz's safety career has taken him to many countries. Currently QHSE Supervisor in Saudi Arabia for SNC-Lavalin, a global engineering company, Umer has previously worked in safety positions in Abu Dhabi and the United Arab Emirates.

Umer's safety career started when he was working for a geotechnical company in Pakistan and volunteered for additional responsibilities. He was given some basic training and additional responsibilities such as site monitoring and PPE enforcement.

Umer says *"This is when I became motivated to become a full-time health and safety professional - I really enjoyed working to protect other people from harm and ill-health. I wanted to learn more and decided to study internationally recognised qualifications such as the NEBOSH General Certificate."*

Since then Umer has gained the NEBOSH International Certificate in Fire Safety and Risk Management and the NEBOSH International Diploma in Occupational Health and Safety which have helped him to continue developing as a professional.

Like Umer, the NEBOSH General Certificate is just the beginning for many aspiring health and safety professionals. It gives them the know-how, skills and confidence to create a solid foundation for continued professional growth and many people go on to gain higher level qualifications (such as NEBOSH Diploma) and more senior positions.

This was the case for Vanraj Dave, EHS Specialist South East Asia & India for Solenis LLC, who grew up in the Gujarat region of India. He says *"A friend told me about NEBOSH and said it was a recognised gateway to the profession. After this advice I took the NEBOSH International General Certificate before going on to the International Diploma in Occupational Health and Safety."*



"My NEBOSH studies broadened my approach in ways I could never have imagined. It gave me the skills and confidence to influence top management and leaders by seeing and presenting the bigger picture whilst having the professional credentials to support my case."

Importance of recognition

In NEBOSH's experience, many people from the Asia region self-fund some or all of their studies. If you're investing in education, it's really important to thoroughly research qualifications before signing up. Ensure the course or qualification:

- Is right for your current level of knowledge, experience and language skills.
- Is recognised by industry – research the employers and industries you'd like to work in and look at the qualifications and skills they ask for in job vacancies.
- Is delivered by skilled and experienced tutors. Even if you are studying online, a skilled tutor will develop effective learning materials.



Here at NEBOSH we have used our expertise to develop a range of qualifications for people at all stages of their career, that are delivered by a network of high-quality Learning Partners. They are also highly regarded by many international organisations, including Sendan in Saudi Arabia, as Muhammed Raheel Khan, Head of HSE, explains: *"I hold the NEBOSH International General Certificate (IGC) myself*

and know how much it had helped improve my own knowledge and competence. We decided to set ourselves the goal of making the IGC the minimum standard for all Sendan safety staff and rolled out a programme of training to make this a reality. Moreover we made holding the IGC (or equivalent) mandatory when hiring new members of our safety team."

"We believe that the IGC programme, along with other initiatives, played a major role in raising the overall organisational safety competency and has resulted in enhancement of safety culture. Our recordable injury rate has fallen significantly, and this has resulted in considerable direct and indirect savings such as lower insurance premiums, minimum work stoppages and improved employee morale."

Begin your safety career

For people interested in a health and safety career, NEBOSH has published *Do Something Great: Your Health and Safety Career* a special, free guide that features advice from 24 of the world's top health and safety thought leaders. These include international experts Dr Abdulrahman Jawahery, President of Gulf Petrochemical Industries Co (GPIC), Shermin Shali, HSEQ Manager in the United Arab Emirates, and Amitabh Bhattacharya, Lead HSE Specialist for Baker Hughes in India.

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FALL PROTECTION

JSP Full Body Harnesses

by Daryl Johnson

There are many different types of height safety equipment on the market, which can mean choosing a harness and connecting device quickly becomes confusing. The following provides some guidance on what to think about when selecting PFPE.

Full Body Harnesses

Full-body harnesses are designed to work with both fall arrest and restraint devices and must conform, as a minimum, to the EN361 standard. With a wide range available on the market, varying in appearance and price point, choice of harness style is ultimately determined by the level of comfort provided. Comfort factors are affected by materials and parts of the harness – such as webbing type, adjustment system, and type of buckles. However, the most important considerations when selecting a harness are the number of attachment points, user limit, and lifespan of



the product. Full body harness attachment points vary, ranging from 1-point to 5-point, which are generally positioned as below:

- 1-Point – one attachment point at the back of the harness
- 2-Point – attachment points on both the front and back of the harness
- 3- / 4-Point – front and back attachment points, and a work positioning belt
- 5-Point – front and back attachment points, a work positioning belt, and a lower front point for abseil/rope access



When selecting your harness it is important to think about where the lanyard will be positioned when you are working, and how it will connect to the harness – for example, if you will only be working with the lanyard positioned behind you then a 1-point harness will be sufficient, whereas if you will also need to work with the lanyard positioned to your front then you will instead need a harness with 2 or more attachment points.

Fall Arrest vs Restraint

When selecting your anchoring device, it is important to determine whether you can work in restraint, or if you will be working in fall arrest. Other key factors to consider are the required length of the device and, if working in fall arrest, the potential fall distance.

Restraint and fall arrest equipment provide fall protection in different ways:

- Restraint systems prevent a fall from occurring – the device works so you cannot go over the edge, removing the risk of a fall altogether.
- Fall arrest systems are used where the risk of a fall cannot be removed, and if a fall were to occur the equipment is activated to arrest the fall within a safe distance and reduce the dynamic energy to below 6kN.

Working in restraint is safer and should always be your first choice, providing the application of work allows it. Restraint lanyards can be

fixed or adjustable and are available in several lengths. I would suggest selecting adjustable restraint lanyards wherever possible – these are the more practical option, enabling you to work in multiple different work scenarios where the falling edge is at varying distances.

For fall arrest systems, the most commonly used device is the fall arrest lanyard (EN355) – this type of lanyard features a shock-absorbing pack, which ensures the force of the fall remains below a maximum limit deemed safe for the user. Shock absorption packs contain a length of webbing (usually around 1.75m) folded and stitched together. When a fall occurs, the resulting force on the lanyard deploys the pack and releases the length of webbing; the stitching is torn as the user falls, which disperses the force of the fall to below 6kN.

When calculating the length of lanyard appropriate for a certain job, the total length of the deployed lanyard must be accounted for – if the length of the lanyard, or ‘relaxed length’, is 2m, then the ‘extended length’ of the lanyard, once deployed, could be up to 3.75m. This means when added together with user height (2m), and the 1m free space required for all work at height, there should be at least 6.75m free space beneath the operative for the lanyard to work safely. The most common mistake made by users of fall arrest lanyards is failing to properly account for the length of the deployed shock absorption pack meaning, in the event of a fall, the user would reach the ground before the lanyard can safely arrest the fall.

Where it is not possible to work at a height of 6.75m or above, several alternative devices can be used, such as fall arrest blocks (EN360) and vertical rope and grab systems (tested to EN353-2). A fall arrest block works similarly to a vehicle seat belt – the user can move around freely, but sudden force caused by a slip or fall causes the device to instantly lock off, which will safely arrest the user within 1m. Rope and grab systems use the same principle in a vertical direction, allowing users to move up and down the rope, and in the event of a slip or fall the rope grab locks on the rope, again arresting the fall safely within 1m.

Anchorage / Connectors

Lanyards are available with a variety of connector options, and your selection should be based on the type of anchor point available and its position. In some cases, a karabiner

or scaffold hook alone may not be sufficient, and you may need to consider an additional anchorage sling or temporary horizontal lifeline.

Karabiners on the market offer a range of locking mechanisms, which can be manual or automatic. Unlocking mechanisms also vary – with screw gate (manual), double-action (auto), and triple action (auto) options. The choice of unlocking mechanism is based on user preference, though the triple action lock is considered safest as it takes three deliberate movements to unlock, meaning there is minimal chance of the karabiner unlocking unintentionally, and the mechanism also locks automatically. Karabiner materials are generally aluminum or steel. Material choice is determined by user preference – aluminum is a popular option due to its lightweight, however, steel can be stronger and more hard-wearing.

About Daryl

“I have been working in the UAE for JSP as the Regional Sales Manager – Middle East, for over 7 years. My main focus has been and will continue to be, educating the market to ensure people are using the correct PPE to carry out their respective roles safely, confidently, and comfortably. Height safety is such an important part of working on-site, and the worker must know what to use, how to use it, and when to use it. It is my role to help companies train their workers to be competent in these areas when working at height. I have visited numerous sites, working in cooperation with the site’s HSE managers, to go through the risk assessments and specify the correct products to be used for the various tasks. I am available to meet and discuss with anyone who has any questions about working at height or PPE in general.”

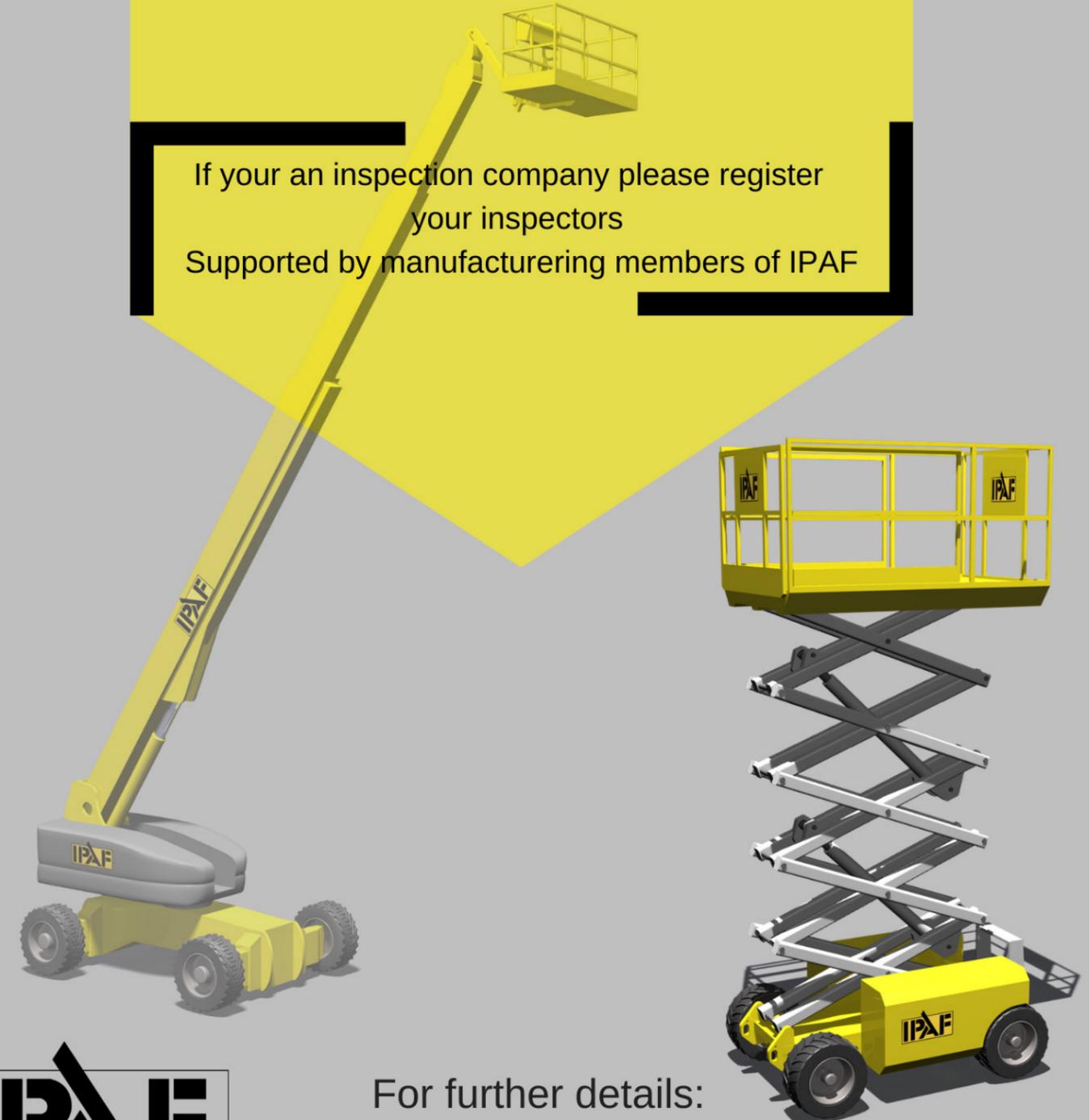
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Selecting The Proper Personal Tool Tether or Lanyard

by John Salentine, VP of Hammerhead Industries

Maximize productivity and reduce injuries, damage & lost work time.

A significant workplace safety issue has been attracting quite a bit of attention lately - Tools and other objects that are dropped when working at heights. Apart from the inconvenience of having to interrupt work to retrieve or replace a dropped tool, there is an extraordinarily serious risk of injury or damage. A one-pound tool falling just 30 feet will hit the ground in less than 2 seconds. It is a site safety issue. Even a common tape measure could kill someone. It happened just a few years ago at a construction site of a new 50-story tower. A tape measure was accidentally dropped and killed an unsuspecting deliveryman stepping from a vehicle at the foot of the building.

The chance of being struck by dropped tools and other dropped objects has proven to be a considerable risk. Equipment and machinery can also be severely damaged, sometimes beyond repair, from a falling tool. At greater risk than others, certain industries such as nuclear power generation, wind power, aerospace manufacturing, and oil and gas production are more prone to damage and injury. A relatively small wrench could cause severe damage to the fuselage or wings of an airplane as it bounces off the plane the whole way down.

Whether it's hitting something as expensive and sensitive as the skin of an airplane, or landing on a pump or bearing, a falling tool is going to create costly damage every time.

Preventative measures such as hard hats, netting, and toe boards are a mitigating practice for this risk, however, regardless of these solutions, they do not entirely prevent incidents. While at heights, active controls utilized to prevent falling tools and objects by tying them off or containing them with tethering systems is a rapidly growing proactive safety practice.

Many safety professionals may not be aware of the range of options available to them. But when tool tethers are ordered without specifications beyond the weight of the tool, chances are good that the tether will not be appropriate. And some factors may impact the safety of the worker using the tether or lanyard. An improperly mated tool and lanyard can inherently lead to reduced productivity and exposure to injury. When the tethering device limits mobility, recoils too fast, or exerts too much resistance upon extension, the backlash from workers is often the result causing fatigue, annoyance, and often non-compliance in the use of the lanyard.

Retractable Tethers for workers using small hand tools less than 3.5 pounds

Picture a worker using multiple small tools... the electrician using screwdrivers, pliers, amp meters... or a scaffold builder climbing up with a group of tools in his pouch... these tools and working conditions are poor choices for coil type tethers or lanyards. But they are ideal for a retractable tether that safely permits multiple tools to be attached to the worker with virtually no risk of entanglement or snagging. Tool and gear retractable tethering devices offer hundreds of combinations of mounting systems, line technology, and shock-absorbing capabilities. There are retractable tethers available in weight-specific configurations for tools that weigh 1 lb, 2 lbs, and 3.5 lbs with some offering a 360o rotating belt clip or attachment to a fall-protection harness.

These highly engineered retractable safety tethers that provide cost-effective security have found their way into new tethering applications... the safety vest for example. Hands-free and tucked away in a pocket and using small, light-weight retractable tethers, a technician's vest can safely hold and secure many small hand tools and equipment. Easily and securely mounted, these retractable cables keep valuable small gear safe and out of the way but always remain easily available for use.

For heavier tools, tethers should be anchored to a structure, not a person.

Tethering heavy tools (generally over 5 lbs.) to a person is also a significant safety concern. Safety engineers should instead consider using anchor tethers that transfer the shock load produced by a dropped tool from the worker to the structure. For very heavy tools (over 10 pounds), structure anchoring should be mandatory.

Vest-Mounted Tethers - Drop Safe Without Slowing You Down

- Our low-profile system is much less obtrusive and cumbersome than bulky coils or cables.
- Mounted in a pocket, it keeps your valuable small gear easily accessible but safe and out of the way.
- Threaded Stud securely attaches to garment with structure such as coversalls or vest.

Retractable Hard Hat Tether

- RT3-5002 Threaded Stud Mount \$18.00 / 10 pk-\$17.00 each
- Load Limit: 18 oz / .51 kg
- Extended Line Length: 12' / 3.66 m
- Retraction Force: 2.5 oz / 70 gm

Pencil/Pen Tether

- RT5-5005 Threaded Stud Mount \$18.00 / 10 pk-\$16.50 each
- Load Limit: 3 oz / 85 gm
- Extended Length: 30' / 9.14 m
- Retract. Force: 2.5 oz / 70 gm
- Pen/Retractable

Smart Phone Tether

- RT5-5420 Threaded Stud Mount \$20.00 / 10 pk-\$19.50 each
- Load Limit: 8 oz / 227 gm
- Extended Length: 20' / 6.09 m
- Retraction Force: 2.5 oz / 70 gm

Small Radio Tether

- RT4-5322 Threaded Stud Mount \$27.50 / 10 pk-\$25.50 each
- Load Limit: 13 oz / 36 kg
- Extended Length: 32' / 9.75 m
- Retraction Force: 6 oz / 170 gm

Tablet / Large Radio Tether

- RT3-5510 Threaded Stud Mount \$30.00 / 10 pk-\$28.00 each
- Load Limit: 24 oz / 680 gm
- Extended Length: 30' / 9.14 m
- Retraction Force: 12 oz / 340 gm

Tape Measure or Tool Tether

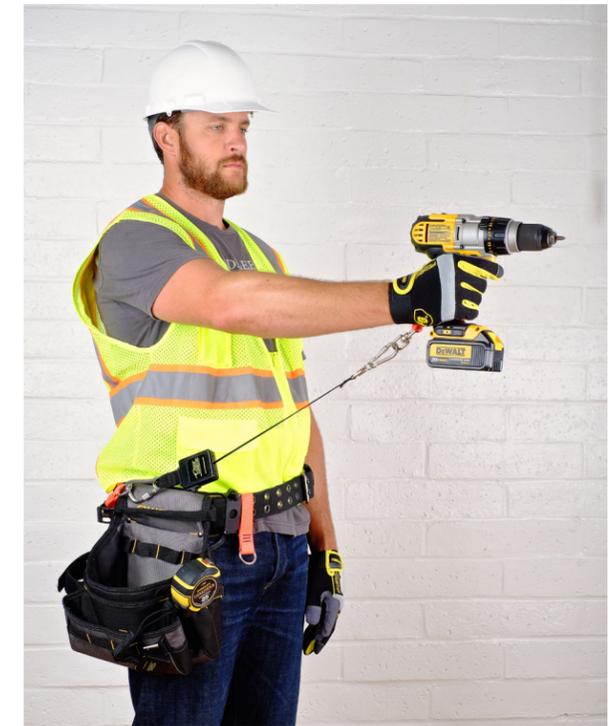
- RT4-5622 Threaded Stud Mount \$27.00 / 10 pk-\$25.00 each
- Load Limit: 20 oz / 56 kg
- Extended Length: 30' / 9.14 m
- Retraction Force: 6 oz / 170 gm

Security in Your Pockets

This Application needs a case with a built-in strong anchor point (do not use empty pockets here)

Great for Hand Tools

"Drop safety in your pocket."



Heavy-duty personal tool tether for 3.5 lb. tool

In addition to the obvious protection of transferring the shock load, the anchored tether also minimizes entanglement issues but because of the longer reach, other concerns need to be considered. The tether must have a higher stretch capability, otherwise, it will coil up or cause stress to the worker. It also needs to have higher break strength since the drop distance of the tool (as a result of the longer reach), will produce higher shock loads at the stop point. Gear Keeper tethers have solved that problem. A polyurethane coil is employed inside of the tubular webbing giving the worker an extremely long stretching ability, using virtually no force. The result is the creation of a large working radius with a shorter retracted length.

Tether's that are not ergonomically designed may cause muscles to tire quickly as the technician extends it to fully reach. Additionally, if the tethered tool is fairly light, the "shock-absorbing" elastic may cause the tool to "slingshot" back to the user too swiftly and may injure or unbalance the worker.



Anchor tether with a retracted length of 42" creating an 18-foot diameter working area.

Quick-Release fittings for multiple tools on one tether

Change the tool, not the tether. A single tool lanyard is sufficient when one specific tool is the only thing tethered, but what do you do when you have multiple tools to tether? It's a very common scenario in most industries. Here again, there are many options for worker safety in multi-tool tethering situations. Quick Connect tethers offer easy tool change-out and are available on a large selection of tethers.



Quick-release wrist tether for easy change out of tools.

Tool Tether Ratings

Tool tether ratings have not been established or standardized by either the tethering or the safety industry. Although the ANSI-121 guidelines set minimum requirements for manufacturing, there are no universal specifications governing tool tether applications as there are with fall protection devices. As such, the safety engineer, when specifying a tool lanyard, has no real basis for choosing proper tethers and arbitrarily determines tether selection based on the weight of the tool, i.e. "I need a tether for a 3 lb tool." Without additional specifications, the safety engineer maybe creating a potentially dangerous situation.

Although both the supplier and the buyer may have good intentions, this is a potentially hazardous situation for a couple of reasons. One, using a tether that is rated for a much heavier tool may not operate effectively because the stretch and the recoil are considerably out of scale for the lighter tool. An additional and more serious problem is when a worker, assuming a lanyard is rated for 15 lbs, thinks he can connect a 15 lb tool to his tool belt. He can't. That 15 lb tool, at a full drop length, will exceed 250 lbs of a shock load. More than enough to knock a worker off his perch. What if a personal fall protection device does not further protect that person?

I strongly advocate that safety engineers explore practical tool tethering solutions with reputable manufacturers. A lanyard that is rated for the weight of the tool is safe to use.

When a tool that weighs 5 to 10 lbs is attached to a person, an appropriate safety professional should always approve it. Above 10 lbs, the tool should always be secured to a proper structure.

Lastly, if anchored tethers are used, the anchor point should also be approved by a qualified safety professional. Many times, a lifeline rated for personal fall protection can also be used, but again the appropriate safety person should approve this as well.

Make the employee your partner in tethering

For your tool and instrument tethering safety program to be successful, a partnership must exist between the employee and the safety engineer. A properly tethered tool or instrument makes work more efficient. It simplifies every repair, maintenance, or manufacturing project by keeping the workers' tools handy and accessible. When tethers correctly complement the tool, worker, and application, you will have an advocate rather than an antagonist.

In conclusion

The safety engineer's goal incorrect tethering procedures is to make sure the tool, application, and recoil/retraction force are in balance. When the tool is extended for use, only minimal force should be necessary so as not to cause worker fatigue or in the reverse, cause a "kick" when retracted. The result of correct tethering is when the tool is stored, held, or used, the dangers of entanglement, fatigue, and annoyance are minimized and worker satisfaction and output are maximized. Tethering manufacturers, like those previously mentioned, focus on being solutions providers, working with customers who are trying to put together a tool tethering safety program that adequately protects their employees without inhibiting their work demands.

About the author

Mr. John Salentine is the co-founder and Vice President of Hammerhead Industries, manufacturer of the Gear Keeper Tethering Systems. The company looks forward to assisting safety engineers with their tethering needs and offers free "Tool Tethering Guides" and "Tethering Short Form Guide Posters." Additional information about tethering concerns can be found at <http://www.GearKeeperBlog.com> and www.GearKeeper.com. To find a dealer near you or for more information about any Gear Keeper product, contact Customer Service, Hammerhead Industries Inc, 5720 Nicolle Street, Ventura, CA 93003, or call (888) 588-9981. You may also visit www.gearkeeper.com.

TOOL TETHER SHORT FORM GUIDE

STEP 1 - DETERMINE TOOL TETHER TYPE BASED ON TOOL WEIGHT & HOW TOOL WILL BE USED.

A - Attached to Person
 B - Attached to Structure
 C - Retractable
 D - Wrist

Tools Under 2 lbs
 A - Personal: For single tool use; moves with you
 B - Personal with Anchor Strap: For single tool use; attached to a structure
 C - Retractable: Low profile, ideal for multiple tether use
 D - Wrist: For short drop lengths; low profile

Tools 2 lbs - 15 lbs
 A - Personal: Single tool use; moves with you
 B - Personal with Anchor Strap: For single tool use; attached to a structure
 B - Anchor Tether: Attached to a structure; provides 10 foot working radius

Tools up to 25 lbs
 B - Personal with Anchor Strap: For single tool use; attached to a structure
 B - Anchored Tether: Attached to a structure; provides 10 foot working radius

IMPORTANT
 When tethering any tool to a person or structure, always check with a qualified safety professional regarding shock loads to, the body, fall-protection devices, or structure anchor points.

STEP 2 - DETERMINE TOOL ATTACHMENT.

Single Tool
 When you don't need to easily remove a lanyard from a tool, affixed lanyard system is acceptable.

Multiple Tools
 When it's necessary to easily change-out tools from a tool tether, a Side Release Lanyard system or Carabiner clip are the best options.

STEP 3 - CHOOSE TOOL ATTACHMENT POINT FOR LANYARD OR CARABINER.

A - Tool has Lanyard Loop
 Lanyard to tool's Lanyard Loop.

B - Tool has Large Ends
 Tool must have ends large enough that will allow lanyard to be looped and cinched securely without slipping off.

C - Tool has Small End(s)
 Tool doesn't have large enough ends (looped lanyard would slide off) Attach a ring using a Band-It for lanyard or carabiner.

D - Tool Modification
 Tool doesn't have large enough end; lanyard or Band-It might slide off... Tool must be modified.

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"Tool Tether Short Form Guide"

FALL PROTECTION

Working at Heights - Prevent your fall

by Roger Verallo

Aluminium towers

There are many different types of aluminum mobile access towers available, made by a variety of manufacturers, however the supplier, and the end-user, for their safety, should ensure that the equipment is fit for purpose. Always check to see that the tower is certified and has approval to the accepted standard EN1004.

Tower erection. 3T and AGR

There are with two different, universally accepted erection methods for aluminium towers, the 3T, through the trapdoor, and the AGR, advance guard rail method. The 3T, through-the-trap' method allows the person erecting the tower to position themselves at minimum risk during the installation of guard rails to the next level. It involves the user taking up a working position in the trap door of the platform, from where they can add or remove the components which act as the guard rails on the level above the platform. It is designed to ensure that the operator does not stand on an unguarded platform at any time.

The AGR makes use of specially designed temporary guard rail units, which are locked in place from the level below and moved up

to the platform level. The temporary guard rail units provide collective fall prevention and are in place before the operator accesses the platform to fit the permanent guard rails. The progressive erection of guard rails from a protected area at a lower level ensures the operator is never exposed to the risk of falling from an unguarded platform.

No other method of erection should be used. Both the 3T and the AGR methods of erecting a mobile tower ensure that the user will always have the correct guard rail height. It is very important, and vital to the safety of the user that the correct guard rail height is achieved not only when the mobile tower is completely erected, but during the build of the tower. Failing to have the correct guard rail height is dangerous and can lead to falling from the tower causing injury or death.

Instruction manual

The most important document to have before starting to erect a mobile tower is the manufacturer's instruction manual, no one should start any tower build without this. Often users can be complacent and think that because they have built a tower many times, and they are experienced they do

not need to use the manual, however, the tower they are using could be from another manufacturer with a different process, or perhaps there has been a change in the tower requirements. All manufacturers have a legal obligation to produce an instruction manual for their equipment which explains the erection sequence, and all suppliers must provide an instruction manual. If the tower has been hired, then the hirer has to provide this information. This must be passed on to the person erecting the tower. Falls must be prevented where there is a risk that a fall could result in personal injury.

Harness and lanyard

Should you use a safety harness and lanyard as fall protection when working on a mobile tower?

Harnesses and lanyards should not be used when working on an aluminum tower, personal fall protection is not necessary. Providing, the correct erection procedures have been followed by using either the 3T or AGR method, if this has been done then all guardrails have been correctly installed and the tower has collective fall protection.

If a harness or lanyard is used then in the event of an arrested fall on a mobile tower you are likely to cause the tower to overturn increasing the risk of injury to yourself and also to others in the vicinity.

Toe boards

If the manufacturer's instruction manual has been followed correctly then toe boards will have been installed whenever necessary. Although toe boards can be seen by some users as an easily left out or insignificant item, it is most important that they are used, not to protect the user, but to prevent any tools falling from the tower causing injury to people passing or working on the ground.

Mixed parts

It is extremely important that when using an aluminum tower from one manufacturer that parts from another tower are not used unless the tower is the same make.

Mobile towers may look similar to each other; however, some towers have different dimensions, these may only be small differences but they do make the mixing of tower components very dangerous as the components will not fit together properly.

It is also of great importance not to mix components from another manufacturer even where the fit is the same. As an example manufacturer 1's tower is approved to EN 1004 which means it has had stringent testing and fit for purpose, manufacturer 2's tower can look the same, but it has been made cheaply using inferior product parts, and a poor manufacturing process. Using towers like this is dangerous and can lead to accidents.

About Roger, Euro Towers Managing Director

Roger now has over 30 years' experience in the Aluminum Tower Industry. He established Euro Towers in 1991 and before that he was the National Sales Manager for Zig Zag Scaffolding.

As Chairman of PASMA, Roger is committed to best practice and safety not only for Euro Towers but for the industry as a whole.

Eurotowers Ltd
For any questions, roger@eurotowers.co.uk

Youtube: <https://youtu.be/CZ3ajJ5cRQI>



SAFETY & HEALTH

Our Safety Needs

by *Jonathan Eades*

I was not born a safety practitioner it took time effort, hours of studying, and many years of gaining experience at grassroots levels. Safety is not my second career; it is my second vocation, as I believe my upbringing and experiences guided me to my current calling as a fulfillment of my childhood wishes of service. My first vocation was the armed forces; this indeed taught me many transferrable skills that are useful, indeed great assets to me second vocation, such a leadership, and discipline commitment ability to read situations and people.

During our formative years and development, we learn many other useful skills for our chosen career, in my case; I was brought up in a working-class environment, in a coal-mining village in Yorkshire, UK. At that time coal mining was the main industry, everyone worked and played together. Some of the bonds made were therefore everlasting bonds and trust between households and families, indeed most of my relatives all worked in the coal mining industry or lived in the same village in Yorkshire. Sadly, after the industrial downturn in the UK in the mid-eighties, many of the coal mines had to close, sadly many of the communities that relied on them faltered and many of the people that invested their working lives in the coalmines now found themselves unemployed. This destroyed our community as many dreams and hopes were now left shattered as now

individuals and organizations had a perceived lack of future and many basic needs would no longer be met. In doubt as the future looked.

You may be wondering what that has to do with safety management; well it is important to understand what motivates individuals, teams, and their colleagues safe. To enrich that understanding and gives them the drive and ambition to succeed it is helpful to understand Maslow's Hierarchy of needs.

Abraham Maslow is well renowned for proposing the Hierarchy of Needs Theory in 1943. This theory is a classical depiction of human motivation. This theory is based on the assumption that there is a hierarchy of five needs within each individual.

The urgency of these needs varies from person to person.



Maslow's Need Hierarchy Model

These five needs are as defined as follows:

- **Physiological needs** - These are the basic needs of air, water, food, clothing, and shelter. In other words, physiological needs are the needs for basic amenities of life.
- **Safety needs** - Safety needs include physical, environmental, and emotional safety and protection. For instance- Job security, financial security, protection from animals, family security, health security, etc.
- **Social needs** - Social needs include the need for love, affection, care, belongingness, and friendship.
- **Esteem needs** - Esteem needs are of two types: internal esteem needs (self-respect, confidence, competence, achievement, and freedom) and external esteem needs (recognition, power, status, attention, and admiration).
- **Self-actualization need** - This includes the urge to become what you are capable of becoming / what you have the potential to become. It includes the need for growth and self-contentment. It also includes a desire for gaining more knowledge, social- service, creativity, and being aesthetic. The self-actualization needs are never fully satiable. As an individual grows psychologically, opportunities keep cropping up to continue growing.

<https://www.managementstudyguide.com/maslows-hierarchy-needs-theory.htm>

Maslow based this study on observations and many critics use the argument that this is not relevant in today's society, however, I would like to explore the rationale and similarities of our current environment when faced with a global pandemic.

Our **Physiologic needs** do not differ and tend to align throughout every generation, the basic amenities of life are still required by the very fact that if we do not eat and drink then we cease to exist. The requirements for **safety needs** are also relevant, In today's world, there is great uncertainty around job and financial security, which is realized daily, as we open the newspapers or browse the web we can see the impact of unemployment and retrenchments. Many organizations and companies are cutting staff and narrowing their operation indeed, many countries and region's annual budgets are struggling to manage the effect of unexpected unemployment and retrenching of employees and citizens worldwide. **Social needs** are not being satisfied, we are restricted from socializing as we once could and many families remain separated during the pandemic, due to a risk of cross-contamination between families and high-risk individuals. **Self Esteem** needs are not a given and personnel has a limited ability for freedom, as many countries remain locked down, thus is providing isolation. This is affecting their own self-confidence as career goals, aspirations are no longer achievable for some and therefore the underlying strengths such as confidence and enhancing skills to deliver future competence are impacted. Finally, we are finding it increasingly difficult to achieve **self-actualization** in today's society as all the other influences we have just mentioned are having a greater impact on us achieving our goals our self-worth and determination is harder to maintain.

As a safety practitioner and leader, we need to analyze this, Maslow's Hierarchy of needs theory enables us to utilize these factors in motivating individuals or the collective group into performing work in a safe way. As leaders ensuring that, not only in safety we consider the group and individuals' needs and wishes in daily routines.

As for safety leaders, it is important to consider that we ensure the basic theory is attainable, so far as re-is reasonable practical. **Physiological needs**; We should ensure that the managers recognize costs of living standards and minimum wage threshold so that salaries are at the correct level and individuals can purchase basic requirements to live, besides, breaks and opportunities to eat should be considered. Allowing workers to interact with colleagues either virtually or where number allow should satisfy the requirements to fulfill their **social needs** too. **Social needs** can encompass team building sessions and social events to encourage belonging and the need to be part of the team.

Leaders should try to ensure that the **Safety needs** are considered which will take account of job security, safe work environment, and talent management to ensure we retain employees. Reassurance and understanding should be a key driver.

Rewards and recognition programs or specific rewards when employees reach or exceed work targets seek to fulfill the requirements of **self-esteem** in Maslow's theory. Delivery of a defined career path with stepped increases in rewards and future delivery can assist in delivering the needs of **self-actualization**, also recognizing individuals' or groups' strengths and ensuring they can grow within the organization can ensure individuals remain challenged in the current environment with continuous development.

Again as a Safety leader, it is important to understand what drives our workforce and in particular, how we can assist them in delivering these needs for themselves as individuals. This also benefits the team and organization, only then can we utilize those needs to ensure that they are better equipped to work safely in a safe environment, delivering our holistic goals of "Everyone goes home safe" thus also fulfilling some of our needs.

About Jonathan Eades Corporate VP of EHS for a global engineering company, Exyte

He served 22 years in the British Army, before changing careers and becoming a full-time safety practitioner. He attained his Master of Science Degree in Occupational Health and Safety from the University of Portsmouth UK in 2014 and has continued his lifelong learning journey, currently studying coaching skills and leadership lead engagements.

Jonathan started his safety career as an EHS advisor and has progressively worked his way through gaining experience at all levels of organizations.

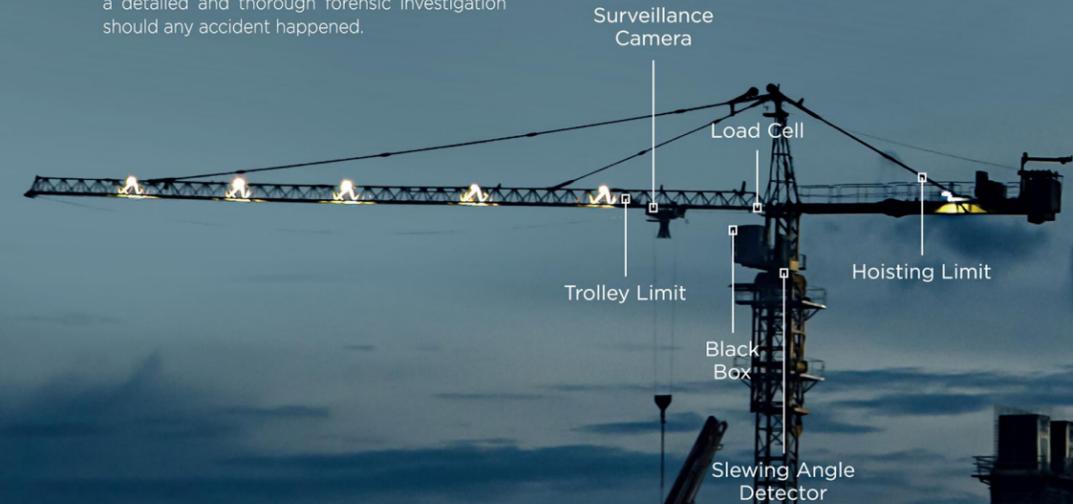
He is a committed safety professional, with main interests in understanding individuals and organizations' behavior as a key to incident reduction techniques. He also strongly believes that corrective actions should not be the written word, but positive behaviors and coaching are the correct formats to improve safety performance securing long-term cultural benefits both individually and within the organization.



HICHARM TSM TOWER CRANE SAFETY MONITORING SYSTEM

HiCharm TSM through digitization and Internet of Things aim to reduce the risk of accidents for crane/ lifting equipment and increase site security level by: -

- 1) Eliminating the operation of crane by an illegal/ incompetent crane operator;
- 2) Provide online monitoring and control of the crane operation by providing Real-Time data/ operational safety parameter;
- 3) Record and save keep the Real-Time Data in Cloud of the crane operating conditions allowing a detailed and thorough forensic investigation should any accident happened.



DIGITAL DATA, DIGITAL ACCESS AND CONNECTIVITY

Record and save keep the real-time data in cloud of the crane operation conditions.

HICHARM TECHNOLOGY SDN BHD (1316141-T)
No.3, Jalan Tago 5, Taman Perindustrian Tago
52200 Kuala Lumpur. MALAYSIA

HiCharm is compatible with these devices.



www.hicharmtech.com

HEARING PROTECTION

Enhancing Hearing

by Philip Tan

Know how your ear works and how to keep safe from permanent hearing damage at work

Being able to hear is an amazing gift that lets us enjoy beautiful sounds that accompany what we see, smell and touch. Losing our ability in any of these senses is emotionally painful but we can take simple steps to reduce the risk of this happening in areas that are within our power when at work or play.

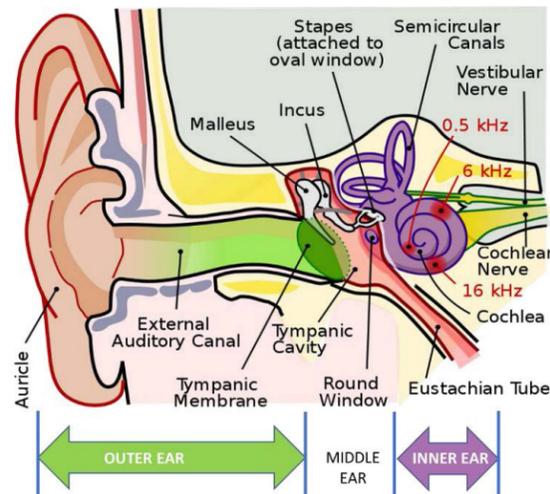
This article focuses on hearing protection and provides an overview of useful information and possible solutions in layman's terms that are simple and easy to understand.

1. THE SCIENCE OF HEARING

Our ear is divided in 3 parts :

- The outer **ear** consists of the pinna (also called the auricle), ear canal and eardrum.
- The middle **ear** is a small, air-filled space containing three tiny bones called the malleus, incus and stapes.

- The inner **ear** has both **hearing** and balance organs.



“Anatomy of Human Ear with Cochlear Frequency Mapping” by is licenced under the Creative Commons Attribution-Share Alike 2.5 Generic

Sounds captured by the outer ear passes through the ear canal to the middle ear. The middle ear acts as a mechanical amplifier to amplify the small movements created by sound waves on the Tympanic Membrane (aka Ear Drum) into larger movements at the Stapes into liquid waves inside the cochlea which is like a snail's shell.

Inside the cochlea are bunches of tiny sensitive hairs. The liquid waves travel into the cochlea stimulates these tiny hairs which then sends electrical signals to the brain. The brain discerns these signals as sounds. At the entrance to the cochlea are hairs that detect higher frequencies (16kHz) and towards the top, lower frequencies (0.5kHz).

Hearing loss is permanent!

High frequency hearing loss occurs first because energy of the liquid waves at the entrance into the cochlea is highest causing the hairs to fall off first. These hairs cannot regenerate and result in permanent loss of hearing at these frequencies. Understanding speech becomes challenging because of difficulties in hearing consonant letters F, H and S.

This underpins the importance of adequate hearing protection in work environments where sound pressure levels are high. Listening to loud music continuously is harmful when using in-ear canal headsets. High frequency hearing loss is also common with aging due to degeneration and exposure.

2. UNDERSTAND NOISE EXPOSURE LIMITS

In the work environment, it is useful to reduce prolonged noise exposure to avoid irreparable hearing damage. OSHA's recommendations provides an excellent guide on this.

OSHA guide on maximum exposure levels before hearing damage occurs	90dB SPL at 8 hours	95dB SPL at 4 hours	100dB SPL at 2 hours	105dB SPL at 1 hours
	110dB SPL at ½ hour	115dB SPL at 15 minutes	120dB SPL	Avoid or damage may occur

Companies that have work activities that expose individuals to loud noises continuously can conduct a noise audit to determine the level of noise exposure their workers face. With better insight, measures can be taken to keep their noise exposure at a safe level. These may include suitable PPE supplies for hearing protection and communication equipment, work procedures, training and policies that are easy to adopt and follow as needed.

Hearing protection PPE includes earmuffs and earplugs which are easily available. Selecting the correct NRR (Noise Reduction Rating) for these is important. As example, for noise levels of 105dB, a pair of 20dB NRR earplugs or earmuffs will reduce it down to a safe level of 85dB.

3. COORDINATING WORK IN NOISY ENVIRONMENTS

Keeping the noise out is easy with the correct ear plugs or earmuffs. However, what if you need to coordinate work with a team working on a site that is noisy or have poor visibility? Situations like this requires good communication and hearing protection!

4. ARE THERE SOLUTIONS AVAILABLE?

Yes and there are a number of solutions but each have their limitations.

VISUAL METHOD

This is the most common and easy method. Visual communication keeps your hearing protected and is good for dedicated communication between 2, at most 3 when well planned and executed. The team must be trained to recognize specific hand signals and constantly observe each other. A good example would be aircraft coming into the apron to park. Here the marshaller communicates with the pilot using hand signals with a pair of lighted wands.

The limitations of this method is the need for attention and good visibility. It is less suitable for use at night due to shadows from lightings. It is also not useful for work that requires ad hoc instructions.

WHISTLE METHOD

This is another common method for simple work coordination using a limited set of signals. It uses a whistle to get attention and workers must be within listening range which depends on the noise level in the area. Common signals such as STOP or GO can be easily communicated with short or long whistle blasts besides other distinctly different patterns. The people involved must be well versed in the whistle patterns and do not have hearing impairments. This method may be used with visual signals and workers can use their hearing protection as whistle blasts can be loud and distinctive. A limitation is not to have

other teams nearby using this method. While useful for basic coordination it cannot be used when special instructions need to be communicated.

PHONE & INTERNET METHOD

The ubiquitous smart phone with voice and data services seems a good choice with walkie talkie apps and wireless handheld PTT devices. This can be useful for work that are less critical as it relies on your phone company who cannot provide service quality assurance other than a "best effort" basis. Networks can get congested and signal quality varies with location. Team members may be using different service providers which introduces inter-network transmission delays. Most importantly, incoming calls can disrupt work communication unexpectedly during crucial moments and needs to be considered.

WALKIE TALKIE METHOD

This is widely used in many industries and is a good tool for communication. We can use handheld walkie talkies with earpieces placed inside our earmuffs to work safely in noisy areas. You activated your Push-To-Talk (PTT) to speak and your voice is transmitted together with the background noise through your microphone. Some team members may struggle to hear your message with this background noise and at times interference from other radios in the vicinity. After you finished speaking, one or two team members who did not hear you clearly requests you to repeat a certain part. This delay in trying to understand instructions fully can pose coordination, safety and other issues in time-sensitive situations. This scenario happens because most walkie talkies do not have noise filtering and are prone to interference from other groups using walkie talkies nearby.

Without noise filtering, you can hear noise directly into your ears suddenly from the person talking! Walkie talkies are not handsfree and could be an issue if you need to work safely using both hands. Two other areas to be aware of are:

- Walkie talkies operate on fixed common frequencies and different groups can interfere with each other
- Only one person can talk at a time – this affects timeliness in safety coordination when you need 2 or more safety spotters

SPECIALIZED COMMUNICATION METHOD

Using a [specialized work safety communication](#) that is affordable and provides hearing protection may be the solution of choice to overcome the limitations of the methods above.

PROTECTS HEARING



Besides hearing protection, some other professional features include

- Powerful Digital industrial noise filter for speech clarity and hearing protection.
- Hands-free operation without pushing any buttons.
- Simultaneous communication by ALL team members.
- All-weather operation.
- Instantaneous communication with minimum signal interference
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- Communicate within a worksite of up to 250m x 250m x 250m.
- Rugged, reliable, lightweight, and easy to operate.
- Multi-Team connectivity

This is the [Actio Pro system](#). It is the latest and most advanced safety communication system for businesses with employees who work in

noisy and challenging situations. This system can support a team of 6 with instantaneous 2-way, simultaneous communication without any cellular network or walkie talkies. Its digital noise filter delivers excellent voice clarity by filtering out surrounding noise to a safe level. This product can work anywhere in the world without the need for additional licensing.

Safety communication is important but is often not well evaluated against work safety requirements. We hope this article has provided some useful information about hearing safety and the possible ways to communicate in noisy environments using both simple and professional choices.

If you are interested to know more about Actio Pro work safety communication, [click here](#).

Philip Tan
Xtreme DSP Global Pte Ltd

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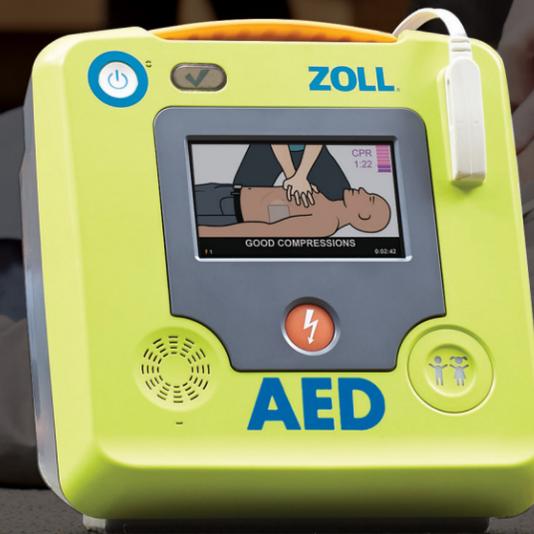
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¹[osha.gov/Publications/3185.html](https://www.osha.gov/Publications/3185.html)

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EYE PROTECTION

Common Work-related Eye Disorders

by Dr. Stephanie Young

Sight is one of, if not the most important, of the senses. The type of work-related eye problems one faces depends on what the occupation entails. This article will summarize the various eye conditions one can face at work, as well as common work-related injuries.

Screen Time Leads to Strain Time

Digital eye strain, fatigue, and dry eyes are common eye problems for workers who are routinely at a computer. Digital eye strain a.k.a Computer vision syndrome is a group of eye and vision-related problems that result from prolonged computer, tablet, e-reader, and cell phone use. With the increasing use of computers and electronic devices at workplaces, as well as work from home, digital eye strain is increasing in incidence.

Several factors contribute to digital eye strain, such as screen glare, poor lighting, poor posture while using the computer, viewing the computer at the wrong distance and angle, uncorrected vision problems, or a combination of these factors. On average, people tend to blink less when using a computer than when reading a printed text. This can cause dry eye, which can contribute to digital eye strain. Prolonged near work may also lead to an accommodative spasm. Symptoms of digital eye strain include headaches, blur vision, tired dry eyes, and neck or backache.

Using the 20-20-20 rule can help to reduce digital eye strain. The rule says that for every 20 minutes spent looking at a screen, a person should look at something 20 feet away for 20 seconds. Following the rule is a great way to remember to take frequent breaks.

Improving your work environment can also help your eyes. Some tips include:

- Adjust the brightness and contrast on the screen so that it feels comfortable
- Enlarge the text on your computer screen or digital device.
- Minimize glare from the light sources in your environment.
- Consider using a screen glare filter.
- Keep the screen clean and dust-free. Wipe it daily often with an anti-static cloth.
- Position your screen at arm's length (about 18-24 inches / 45-60cm) away from where you are sitting
- Position the monitor at eye level
- Remember to blink frequently.
- Fix your chair height so your feet can rest comfortably on the floor.

Dry Eyes in the Office

Office workers may be affected by dry eyes if they spend prolonged periods in front of the computer or air-conditioned rooms or work in very dry or dusty environments. They are also impacted by factors outside of the workplace, such as screen time at home. To treat dry eye, consider using a humidifier in the home or workplace. Lubricating eye drops, such as artificial tears may also help with dry eye symptoms.

Your eye doctor also might recommend the following:

- Treating allergies, if present
- Staying hydrated
- +/- Taking a prescription medicine to increase tear production

Work-Related Eye Injuries

There is a range of agents found in workplaces that can cause eye diseases, disorders, or injuries. While many of these agents are often also found in everyday living environments, exposure at dangerous levels is most likely to occur in the workplace. For this reason, these conditions are commonly referred to as work-related eye injuries or diseases.

Traditionally, work-related eye injuries have predominately affected individuals working outdoors or in the construction, manufacturing, and service industries.

Chemical eye burns: Both highly acidic (pH <4) and highly alkaline (pH >10) substances are toxic to the eye and cause chemical eye burns if they come into contact with the surface of the eye. Alkaline substances present the greatest risk. Such substances are most commonly found in the workplace, for example in laboratory chemicals or industrial cleaning products.

Injury by foreign bodies: The eye may sometimes be invaded by small foreign particles (e.g. dust from manufacturing activities or metal specks from grinding) which can cause irritation and inflammation. While foreign particles rarely cause lasting damage to the eyes, prompt removal of irritating particles is necessary to avoid infection, scarring, or permanent eye damage.

Blunt trauma injuries: Blunt trauma injuries (i.e. injuries which do not penetrate the skin and do not result in external bleeding) to the eye occur as a result of being struck by a heavy object. They can cause the eye to bleed internally. They may also result in fractures of the bony walls surrounding the eye (i.e. orbital fractures).

Penetrating trauma injuries: These are usually caused by sharp objects penetrating or piercing through the structure of your eye, which may happen at the workplace from hammering nails, filing metal, and working with tools. This is an ocular emergency that requires immediate attention. Penetrating injuries can cause corneal, conjunctival, and/or globe lacerations, vitreous hemorrhage, and retinal tears or detachments. Over time, scarring can also lead to cataracts and glaucoma. While not every penetrating injury can be prevented, wearing protective eyewear while working with hand and power tools can prevent many injuries.

Allergic conjunctivitis: Allergic conjunctivitis is common amongst workers in the food handling and agricultural sectors who are regularly exposed to particular spices, fruits, and vegetables.

Excessive exposure to ultraviolet radiation: Outdoor workers are often exposed to ultraviolet radiation (in the form of sunlight) in excessive quantities. There are numerous eye diseases and disorders associated with the eyes' exposure to ultraviolet radiation, including certain cancers of the eye and eyelids, cataract, and pterygium. Artificial sources of ultraviolet radiation are also found in a range of workplaces and can damage the eyes. These include welding arcs, germicidal lamps, and lasers.

Prevention counts

It has been estimated 90% of workplace-related injuries can be prevented. Protective measures which can be taken to prevent work-related eye injuries include:

- Providing protective eyewear: The type of eyewear required depends on the job being conducted. Safety goggles with full face protection are particularly important for welders, who may be exposed to high levels of UV radiation, as well as foreign substances that can invade the eye. In other industrial settings, the use of eye goggles is also required and these should have side shields to protect against the invasion of foreign particles and liquids. It should be noted that such eyewear may not protect against dust, particles, and vapors which can cause eye damage.
- Individuals who spend time working outdoors or driving should be provided with sunglasses and hats to protect their eyes from harmful UV radiation.
- Keeping eyewash accessible in the workplace: Initial treatment of many work-related eye injuries can prevent serious and long-term eye damage. The single most common approach to treatment is the irrigation of the eye with a saline eye wash (i.e. washing the eye out with a salty eyewash), to remove the foreign substance causing eye injury. In workplaces where workers are at risk of exposure to chemicals or small particles, eyewash solutions should be easily accessible so that eyes that have been invaded by foreign substances can be promptly irrigated and the likelihood of permanent eye damage reduced.
- Seek care from an eye doctor if there is any concern about an eye problem.



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Dr Stephanie Young is a Senior Consultant eye surgeon and Director of Ophthalmic Plastic & Reconstructive Surgery at Eagle Eye Centre. She has a special interest in ophthalmic plastic and reconstructive surgery of the eyelids, lacrimal system and orbit. She has a special interest in eyelid surgery for functional and cosmetic indications, and treats many patients with droopy eyelids, eyelid malpositions, double eye lid creation and more. She is also well-versed in General Ophthalmology and manages conditions such as dry eyes, tearing and cataracts, and performs screening for eye disorders like glaucoma and diabetic retinopathy.

Dr Young remains a Visiting Consultant at the Ophthalmology Department in National University Hospital (NUH). She was a past Assistant Professor with the Yong Loo Lin School of Medicine, National University of Singapore (NUS). She has obtained Fellowships from The Royal College of Ophthalmologists (London) and Academy of Medicine (Singapore), won the Gold Medal and Book Prize in Ophthalmology, and received a Distinction Award for Ophthalmology-related research for her Undergraduate Research Opportunities Program.

After completion of her Ophthalmology training at NUH and surgically intensive fellowship in Orbital, Oculofacial surgery and Ophthalmic oncology under Dr Gangadhar Sundar and Prof Shantha Amrith, she spent a year in Samsung Medical Center, in Seoul, South Korea, training with top Oculoplastic surgeons Prof Kim Yoon-Duck and Prof Woo Kyung In. During her time in Seoul, she gained significant exposure to functional and aesthetic eyelid surgery, endoscopic lacrimal surgery and complex orbital surgery.

Dr Young is active in Oculoplastic-related research and has published more than 40 papers on the subject in peer-reviewed journals and several book chapters. She has also won awards including: American Academy of Ophthalmology Achievement Award (2019), Asia-Pacific Academy of Ophthalmology Best Scientific Paper (2018, 2019), American Academy of Ophthalmology Best Poster Award (2014, 2015 & 2017) and the Wong Hock Boon Society Outstanding Mentor Award 2017.

She strongly believes in giving back actively to society and sits on the executive committee of the Singapore Women's Association, and is the chairperson of its Singapore Visioncare Programme which provides free eye screening events for the community. She has also been on several cataract and Oculoplastic trips to remote areas in need of eyecare in China, Myanmar and Cambodia.

[Click here for appointment booking at Eagle Eye Centre](#)



PPE PROTECTION

APG – in lieu of Acronym ‘PPE’ for a Safer Workplace

by *Dr. N. Venkataraman*

Introduction

PPE is essentially anything you can wear that will protect you against any hazardous conditions. PPE is important because it prepares you for any health and safety risks and gives you extra protection event of an accident or against the elements. Personal protective equipment (PPE)' refers to protective clothing, helmets, goggles, or other garment or equipment designed to protect the wearer's body from injury by blunt impacts electrical hazards, heat, chemicals, and infection, for job-related occupational safety and health purposes, and in sports, martial arts,

combat, etc. The terms "protective gear" and "protective clothing" are in many cases interchangeable" protective clothing" is applied to traditional categories of clothing, and "gear" is a more general term and preferably means uniquely protective categories, such as pads, guard's, shields, masks, and so on. Police use handcuffs, batons and handguns as PPE. The use of personal protective equipment is to reduce employee exposure to hazards when engineering and administrative controls are not feasible or effective to reduce these risks to acceptable levels. In today's COVID 19 times, face mask is considered as PPE.

Personal protective equipment, commonly referred to as "PPE"³, is equipment worn to minimize exposure to serious workplace injuries and illnesses. Personal protective equipment may include items such as gloves, safety glasses and shoes, earplugs or muffs, hard hats, respirators, or coveralls, vests and full body suits. Personal Protective Equipment² is any device or appliance used to protect parts of the wearer's body to prevent and/or to minimize the severity of hazard occurrences that may arise during the course of work. This includes appliances used for prevention of head, eye, face, hearing, respiratory, body, foot, hand and finger injuries. Other PPE include devices such as a fall arrest system or a flotation jacket which is able to prevent harm to all parts of the body when exposed to the hazard of falling from heights or immersed in water. PPE to be used shall conform to testing standards and appropriate the work at hand. Where possible, PPE should conform to Singapore Standards. Personal protective equipment (PPE) is barrier protection to be used by an individual to prevent disease transmission.

Fatalities and injuries among the nation's workers are substantially reduced with the use of personal protective equipment (PPE) and technologies. It is estimated that 20 million workers⁴ use PPE on a regular basis to protect them from job hazards. PPE protects 'workers from death and disabling injuries and illnesses as well as protecting from the specific threats of exposures to certain airborne biological particles, chemical agents, splashes, noise exposures, fall hazards, head hazards, and fires.

Need for relooking the acronym ppe

If you have workers handling sharp metal, you get them a standard cut-resistant glove. Pipefitters probably need an impact glove. But not every hazard or job fits into a neat category with easy-to-find PPE. In fact, some jobs

and even some workers need new products invented just for them. That's where appropriate PPE comes in.

Personal protective technologies (PPT) include respirators worn by construction workers and miners; protective clothing, respirators, and gloves worn by firefighters and mine rescue workers; and respirators and protective clothing worn by healthcare workers. An estimated 5 million workers are required to wear respirators in 1.3 million U.S. workplaces. Respirators are truly not classified as PPE but as PPT. There are several problems and issues concerning the practical applicability of the term PPE. Personal protective equipment can be uncomfortable to wear, Safety shoes, aprons, helmets and goggles worn by visitors are not really personal. Gears like helmets and goggles are not really equipment. There are many other examples to highlight that the acronym PPE itself is not suitable when used as hazard communication.

Manufacturers produce products in a standard range of sizes. That's economical, and it suits most people. But it leaves larger, smaller, and some workers with disabilities, out in the cold. Here comes the appropriate PPE usage.

Alternate to the acronym ppe

Let us look into each one of the letters in the acronym PPE.

- The letter 'P' as we are familiar for the word Personal should be replaced by either 'A' to mention as Appropriate or retain the letter 'P' but with the word 'Practical'.
- The letter 'P' as in Protective could be retained, as it provides a good communication of protection.
- The letter 'E' as in Equipment should be replaced by 'G' to reflect that the equipments are really guards, which protects from harm

Rationale for choosing apg

The acronym APG should be practical, easily understood by all walks of life and reflect the true intention, i.e - protection against hazards

The letter A chosen instead of 'P' means Appropriate. In real terms, we would like to make sure the workforce uses the appropriate protection, rather to reinforce on Personal. When the word Appropriate is used, there is a greater sense of urgency and responsibility on management and employees to decide on what is appropriate to the hazards they encounter rather than to reinforce on 'Personal'. We already are aware that the protective equipment and gears we use are not strictly personal. Many countries have workforce with different languages. Thus it is very important to reinforce on the word appropriate than the word personal. A as in Appropriate is a better alternate to the letter P as in Personal.

The letter P as in Protective is effective and provides the real intention. It gives a clear message to the user that the guards and equipments are meant to protect. Most of the PPE used such as mask, face cover, eye spectacle, safety over glass/splash goggles, gloves, and face splash shields are often personalized, Hygiene is one aspect considered when using such protective gears.

The letter E as in Equipment is truly not equipment. Equipment refers to something that can be used like gadgets. It is a paradox that we call gloves and helmets as equipments on the same lines as instruments. Any of the protective equipments or gears we use are meant as Guards. Thus the letter E should be replaced with 'G' meaning Guards. Guards as a word provides the user the same sense of belonging, ability to highlight the importance of protection, easily spelt and understood and can relate to common practices like machinery guarding. Guard as a word refers to the person protecting the work space.

Thus the acronym PPE should be better renamed as APG.

Conclusion

The acronym PPE has been used for many years and it is time to review the relevance in today's and tomorrow's context. Communication, Information, Instruction are key to make workplace safer and healthier. PPE seems to be obsolete and inappropriate to reflect the true intention. The acronym APG is more practical, applicable and provides the true intent to the user. Thus can provide a means to make the workplace safer through effective communication and use.

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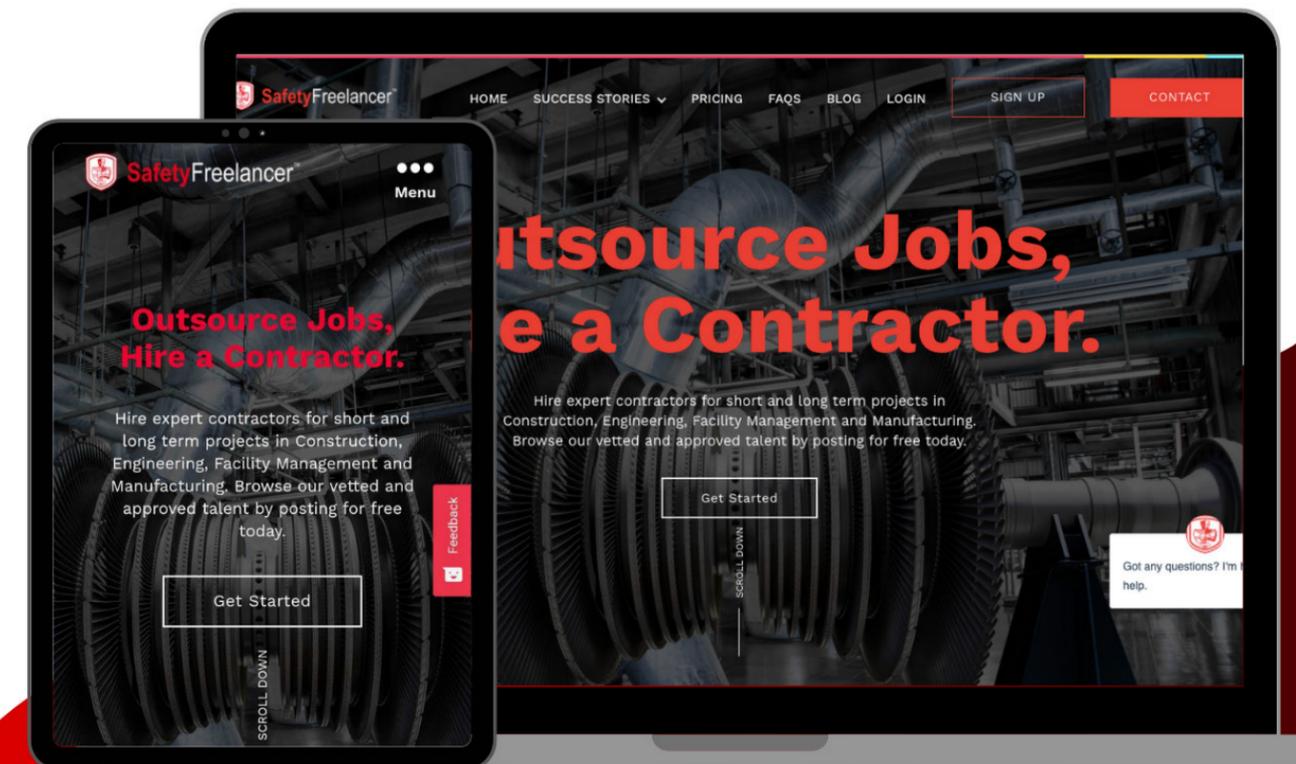
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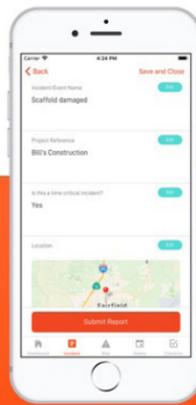
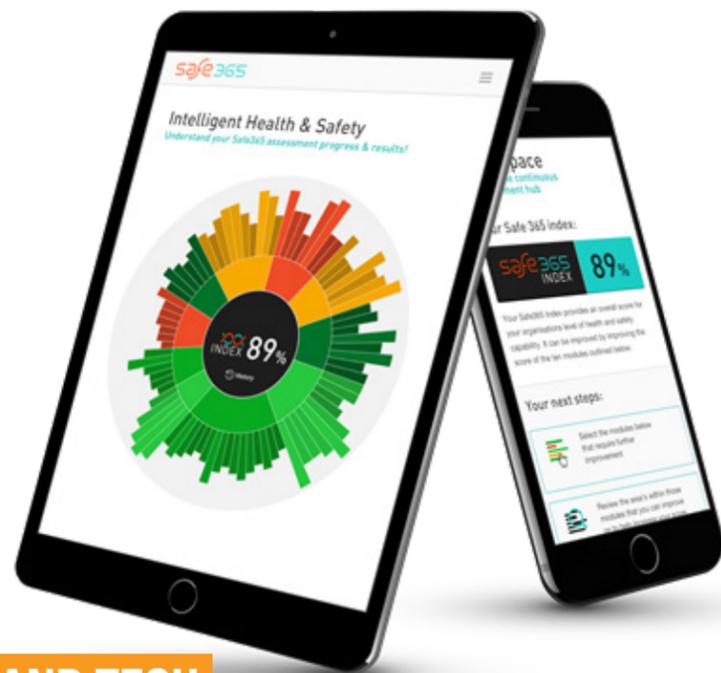


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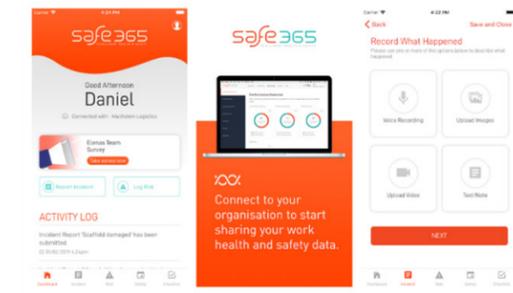
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WSHE AND TECH

Have you gone digital? Safety Tech - Worker Health and Safety Post COVID-19

by *Nathan Hight, Director – Safe365*
Certified Professional Risk Manager (CPRM™)

Worker health and safety has taken on a whole new meaning since the outbreak of COVID-19.

Singapore employers are now obligated to ensure they are taking steps to prevent the spread of COVID-19. This includes practical steps to ensure accurate site-visitation records are maintained (for contact tracing purposes), worker health screening is completed and recorded to avoid infected workers going to work, arrival/departure sanitization processes are in place and being adhered to, physical distancing on sites is being

maintained and workers suspected of having a COVID-19 infection are removed from the work environment and health advice taken. At any stage, records that demonstrate that these steps are being taken must be able to be produced for authorities to assist with contact tracing investigations. Beyond that, Singapore's construction companies must also continue to identify, assess, and control the range of pre-COVID-19 risks on their sites.

Trying to solve these challenges using traditional paper reporting is problematic. Firstly, it relies on workers and their supervisors being able to locate and fill out the various reporting forms. Records get lost, destroyed, require double handling & filing, limiting the quality and accuracy of data being captured from the site. As a result of these practical limitations, it becomes challenging to maintain visibility and generate helpful, timely insights to improve decision making. This is a stressful and challenging problem for safety officers and business leaders.

That's why Safe365 was created and made available to Singapore businesses. Safe365 is offering Singapore companies, in any industry, its free "COVID-19" plan – which gives access to the software for companies with up to 200 workers for 6 months, at no cost.

Safe365's smartphone app (available from Apple Store and Google Play Store) and performance web console (available www.safe365global.com) provide practical, easy to use digital tools to help solve this problem. The performance console comes with pre-built checklist templates that companies can activate and deploy to connected app users. App users download the app and connect to their employer. Uniquely, Safe365 does not require any expensive implementation consulting and can be set up and deployed within the company in 30 mins.

Examples of specific COVID-19 related tools & templates available include:

- Setting up, verifying, and monitoring working from home arrangements
- Construction worker daily pre-start COVID-19 screening & procedures
- Construction manager COVID-19 plan
- Employee 'back to work' COVID-19 induction checklist
- COVID-19 Employee Well-Being and Engagement Survey

Beyond these, companies can very easily build their custom checklists to meet their specific needs. This has included site visitor registers, evacuation checklists, site emergency shutdown checklists, plant and equipment inspection checklists, and much more. Every record submitted via the Safe365 app also includes important details that can be used for contact tracing if required, including time/date stamping, GPS location & location address, the user's name & contact details, and, if entered, names and contact details of visitors on the site. The safety officer/management gets instant visibility of each report and can record any actions taken by adding to the report thread, so all this information is held together on the Safe365 performance console.

In the event of a COVID-19 outbreak, the company can export records submitted for the date range required, and provide instant, quality data to authorities to assist with contact tracing – the key to limiting the spread of the virus.

Beyond the construction industry, Safe365 has been used extensively in United Kingdom, Africa, the US, Australia, and New Zealand by many SME businesses including schools, gyms, retail stores, transport companies, utility contractors, professional services, local government and health-related organizations like pharmacies, hospitals, dentists and medical centers.

In addition to the Safe365 app, the platform also provides an innovative governance & assurance system that allows companies to rapidly measure and benchmark their health, safety, and well-being maturity, understand gaps in capability, and provides practical tools and resources to make improvements. The platform provides visibility of continual improvement and also provides a reporting tool to make it easy to communicate health and safety insights to the business leaders.

For many businesses, using Safe365 has been transformational.

Safe365 has been able to support and enable over 4,500 businesses in the past couple of years to raise health and safety standards at work by lifting engagement with both business leaders and frontline workers. We have examples of large clients that have improved their Safe365 Safety Index® by 10% over 3 years and have seen a corresponding decline in worker claims costs of 40% - approx. a 15x return on investment for the cost of the system. It is incredibly rewarding to help clients achieve these types of results. In addition to the primary

objective of achieving less harm to workers, this outcome presents a significant amount of money, which either improves profitability or can be reinvested to grow the business. Our market benchmarking insights continue to confirm that doing health and safety well is not only a legal obligation, but it is truly good for business.

With a looming global recession, enhanced health and safety requirements, and mounting pressure on revenue and profitability, businesses need to strive for greater cost-effectiveness, efficiency, and ways to transact their business while meeting safety requirements in this 'new normal'. Safe365 is an ideal product and partner to assist businesses that want to do health and safety well in a very cost-effective manner.

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If you'd like to know more, want to sign up or trial the software, visit our website: www.safe365global.com or send us an email at sales@safe365global.com.

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FOR MORE INFORMATION
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FALL PROTECTION

Minimizing Risk When Working At Height

by *Jeffrey Eckhardt, P.E., Vice President & Chief Engineer for Snorkel & Xtreme Manufacturing*

While mobile elevating work platforms are designed to provide a safe method to work at height, equipment manufacturers, such as Snorkel, work relentlessly to develop solutions to minimize potential risks for operators and those working around MEWPs.

In 2006, Snorkel developed the Personal Fall Arrest System (PFAS) with the aircraft industry in mind. This system permitted workers to exit the platform and work on the wings of aircraft while being restrained to the platform in an event of a fall. The system utilizes 410kg shock-absorbing lanyards but provides a safe and flexible option for working at height in various applications.



well as in-house developed flexible mesh and rigid metal enclosures for the perimeter of the platform. These enclosures can help to prevent items from falling off the platform into the drop zone and can be customized depending upon the specific application.



Technology which is becoming widely available in the automotive sector is also beginning to transfer into new construction equipment, such as advanced collision avoidance systems. Snorkel is developing more advanced collision detection using ultrasonic sensors to warn operators of approaching obstacles. Just as when driving a car, these systems are no replacement for proper training, site hazard analysis, or operator awareness, but can help to minimize risk on busy job sites.

In 2015, Snorkel became the first MEWP manufacturer to introduce its secondary guarding solution, Snorkel Guard™, as a standard feature on all of its boom-type lifts, as well as offering the system as a retrofittable option for its equipment built as early as the 1990s. Snorkel Guard™ is a physical, manually-operated bar that sits above the upper control panel, and when compressed, stops all movement, enabling the operator to analyze the situation. A switch in the platform lets the operator override the system once they have determined the next safe course of action. If the operator is incapacitated or unresponsive, an operator at the ground can obtain full control of the machine and bring the platform back to the ground.

When working at height, consideration should be given to the drop zone below and around the working area. Snorkel offers a variety of options to provide increased protection from dropped objects. This includes several aftermarket solutions, which have been approved for use on Snorkel mobile elevating work platforms, as



Jeffrey Eckhardt, P.E.

Jeffrey Eckhardt is the Vice President and Chief Engineer for Snorkel and Xtreme Manufacturing. He is a licensed professional engineer in Kansas and Nevada and is a member of the ANSI A92 main committee. Jeff started in the aerial lift industry in 1996 and has been with Snorkel for 15 years.

Road Safety: A perspective

by Pankaj Singh

As a Safety professional, I have been dealing with risk and hazards all thru my career, and yet I must confess that in my early years I did not see the road risks the way I see now. Even though the topic is also driven by the same terms 'risk' and 'hazard', this did not strike our mind those days because there was hardly any discussion in the society, organization, or media circles. You hardly saw such incidents reported by any media house, unless it involves a celebrity. And even in that case, the focus is on the celebrity and not on the cause of the death.

The times are changing for good, and we see more and more discussion happening on this topic especially in our part of the world. The subject is gaining attention and rightly so. Governmental initiatives and actions, NGOs activism, corporate initiatives, and citizen movements are good signs and rightly picked up by media houses to bring them into the society as a topic to ponder upon. Far too many people have lost their lives due to either a skill or a behavior-based error on the road.

As per the World Health Organization (WHO)

- 1.35 million people lose their life due to a road crash and around 50 million people suffer injuries arguably the lucky ones. However, many of these injuries leave them permanently disabled or cause them to lose

their ability to work, communicate, support their family, smile, laugh, or dance.

- The above numbers translate into 3 deaths and 95 injured every minute. Imagine how many people would have lost their lives by the time you finish reading this article.
- 93% of the world's fatalities on the roads occur in low- and middle-income countries, even though these countries have approximately 60% of the world's vehicles.
- Road traffic injuries are the leading cause of death for children and young adults aged 5-29 years
- More than 90% of road traffic deaths occur in low- and middle-income countries.

- In addition to the grief and suffering they cause, road traffic crashes constitute an important public health and development problem with significant health and socioeconomic costs. Road traffic crashes cost most countries 3-5% of their GDP.
- Traffic injuries are the 9th largest cause of death globally.

Road Safety is a business issue. Road Safety is a social issue. Road Safety is a Sustainability issue. Road Safety is an economic issue. Road Safety is an Issue. Period.

Many attribute these untimely deaths to their fate and karma. But the reason is the plying of unfit vehicles, fatigued drivers, reckless driving, poorly skilled drivers, unsafe road conditions, speeding tendency, usage of mobile, distracted driving, etc are few reasons behind the accidents and not fate.

Road traffic crashes are predictable and therefore preventable. It requires real-life skilling of drivers, mandating minimum safety features for vehicles, and accountability towards maintaining the road conditions. Some countries have shown significant reduction through an established set of interventions. At the structural level, enforcement of policies and legislation, focus on road engineering, scientific crash investigation, and accountability at the governance level. We need most importantly a sustainable program towards road safety involving citizens through mass engagement, communication, and education. COVID 19 pandemic has taught us how a focused campaign and apt communication can reach billions across the globe in a matter of weeks and months. Corporates, educational institutions, and Citizen Forums must take up larger responsibilities to create awareness and educate people at all levels.

To combat the problem, there needs to be close coordination and collaboration, using an integrated approach, across sectors and disciplines. Our roads need research, resolve, and response to save lives and limbs. These interventions are only possible with a firm

political will and commitment, without which little can be achieved. The time to act is now. Road users everywhere deserve better and safer road travel.

Does all that mean we do not have an individual and collective responsibility?

NO, all this has to start at MY level, YOUR level, OUR level. While structural work might take a while, We have to commit to some basics every time we hit the road:

- I won't drive when under influence of alcohol
- I won't drive when feeling unwell, drowsy, distracted, or fatigued
- I won't rush, instead will plan my journey with time in hand
- I won't use mobile phones for calling or texting. This certainly can wait
- I won't break the traffic rules meant to help me stay safe

MY Safety is MY Responsibility. Period.



About Pankaj Singh

A seasoned safety professional with a career spanning over 22 years handling various portfolios across multiple industrial sectors and geographical regions.

A passionate Road Safety leader currently leading strategic Road Safety initiatives across LafargeHolcim sites in India. Board member at National Safety Council of India Member of the FICCI Sub Committee on Road Safety and on the Advisory Board of many Safety Forums.

LIFTING SAFETY

Planning a lift - Important factors designing a lift plan

by Ahmed Trabelsi

Lifting operations can often put people at great risk of injury, and incur large costs when they go wrong, so before starting to set up your crane you must make sure you prepared or got the right lift plan. This article offers some guidance on how to get it right.

The lift (rigging) plan is an absolute necessity for a safe and well-executed lifting job. Here in Saudi Arabia, the construction industry especially in the field of Oil & Gas supervised by Aramco has recognized the importance and reinforced the industry, by generating the General Instruction Manual (G.I), also SPSP training center established to train riggers, and crane supervisors about the basics for the preparation of rigging plan: It is one step among others to promote the safety culture

Of course, today there are several software packages available where rigging studies can be easily prepared and tailored precisely to the specific crane model being used on the job. There is no doubt that these programs are of great help to the industry.

However, you rely on them solely. A crane supervisor is to understand the lifting specifications for a particular job and select the crane(s) and the rigging equipment, then he/she must be able to prepare a simple rigging plan with a sheet of paper, a ruler, and a pencil.

Whilst it is true that a simple lifting job does not require a lifting plan, it is hard to say exactly what constitutes a 'simple' job. A small lift from a narrow position at a long radius can be just as complicated as a large lift at a short radius with no surrounding obstacles.

There are several lifts planning software available with a different scope of utilization like Liccon job planner and Liebherr crane planner specific for Liebherr cranes, 3d lift plan, Kranexpert, Cranimax

I use Autocad 2D however you need to prepare the crane blocks library first specific to the company's crane fleet and I could double-check with the Liccon job planner if the crane used in Liebherr for example and use some aid for calculation (Excel sheet with formulas to determine clearances).

This article might be helpful to introduce the requirements to prepare a proper lift plan for and set the crane in the correct position for people that want to increase the safety levels of operations

Plans are nothing planning is everything maybe most of you have heard of this quote but why planning is so important in the lifting industry?

- Analyze the operation, identify the related risks to avoid the issues
- Effective details for the implementation of a step-by-step process

In short, a good plan combined with good equipment and qualified people is the key to a safe and effective lifting operation.

Unfortunately, we continue to see news like:

- Crane accident closes road
- Crane boom land on the home
- Crane overturns in Italy
- A crawler crane tipped over in the Netherlands

And many other headlines

The principles described here below apply equally to a simple rigging study carried out by hand or a detailed study prepared using sophisticated CAD software or other modern techniques. But before we start drawing, we must think of what we are going to put on paper and in what format we are going to lay it out. In other words, 'how do we layout a rigging study?' Should the overhead (plan) view and the side view (elevation) fit on the same piece of paper? What scale should be used? Should the paper be used in the portrait (vertical) or landscape (horizontal) position? Where should we place the logo/information box, in which we identify the drawing number as well as describing the project being drawn as well as the scale in which it is being drawn? So before even one line is put on the paper you must think twice.

Lift plan contents

The information that needs to be included depends on the complexity of the operation and the task factor I tried here to bring a list that could serve as a guide:

Drawing Layout/information box:

- Logo
- Date
- Scale
- Limiting conditions

Load:

- Weigh of the load
- Dimension and location of lifting points to the CoG
- Location of the CoG
- Support points

Crane(s):

- Crane manufacturer and model
- Crane configuration (boom length, boom /Jib type, counterweight)
- Crane Configuration Code used on the SLI
- Dimensions of the crane
- Crane load chart extract
- Number of parts v the load
- Crane location and movement
- Location and dimensions for obstacles
- Matting arrangement
- Ground bearing pressure
- The maximum permissible wind gust speed

Rigging:

- Slings (Types length, diameter, WLL, Grade)
- Shackles details v lifting points
- Spreader bar/lifting beam details

Ahmed Trabelsi

CDTC Technical Training Manager
Saudi Petroleum Services Polytechnic (SPSP)

FALL PROTECTION

Preventing Falls using Risk Management

by Peter Hurley

Falling from height is the leading cause of fatal injuries in the workplace in the UK (Health & Safety Executive). In the 2019/20 reporting period, there were 29 fatalities in the UK as a result of falling from a height. In terms of nonfatal occupational injuries in the UK falling from height caused 8% of such incidents being the 5th leading causal factor of such incidents in 2019/20.

The nature of the risk of working at height is such that the consequences of a fall from height are more likely to be more severe even if the height is considered to be relatively low.

The Process of risk management and control tends to focus more on reducing the likelihood of the manifestation of the risk rather than the potential consequences of the event. As for safety practitioners, we may seek to reduce the level of risk of working at height through a comprehensive suite of control measures however the nature of the risk is such that the failure of these controls can be life changing or life-ending. As soon as we put ourselves in a position where we are working at height we are exposing ourselves to the potentially fatal consequences of acceleration at 9.8 m/s² due to gravity. Gravity cannot be eliminated or isolated and to risk managers, we must ensure that the activity is appropriately assessed, planned, managed, and controlled to prevent falls from height occurring.

Working at height covers an array of activities from the use of stepladders, ladders, or scaffolds for decorating or to undertake maintenance

for example through to some of the more extreme occupational activities such as high-rise construction or even cleaning skyscraper windows using abseiling equipment. Of course, the risk management process shall consider each activity on its merits and implement specific control measures accordingly.

Before considering the control measures we must understand that the risk of working at height has potentially fatal consequences. There is perhaps a paradox in play with how we view work at height. The risk of high-rise construction work may be starkly obvious yet we may be tempted to underestimate the severity of 10 minutes of non-routine repair work 3 meters up a ladder. Moreover, as work at height activities are often short and may be unplanned or nonroutine we may get lured into complacency when considering the risk of the activity. The likelihood of the risk of working 3m up a ladder for 10 minutes compared to 8 hours on the 20th floor of a construction site is certainly reduced due to the limited time exposure to the risk nevertheless the potential consequence of the risk remains severe.

The severity of the risk does not mean that the process of control needs to be overly complex or prohibitive to the activity. The key to success with risk management is often simply as overly complex requirements are more likely to be subject to circumvention and violation. There are simple, practical measures that can be taken to reduce the risk of falling from a height. The work must be properly planned and supervised; those undertaking the work must be properly trained and competent, and the correct tools and equipment for working at height must be available.

It is essential to take a sensible approach when considering control measures. When selecting our control measures we must consider the hierarchy of control. Gravity cannot be eliminated but if it is reasonably practicable to eliminate the need to work at height to complete the activity then we should do so. Beyond this for activities that demand working at height falls from height should be prevented through a suite of control measures.

If we cannot eliminate the activity perhaps the substitution of the equipment may provide better protection. This might mean using a step ladder instead of a ladder or a MEWP instead of a scaffold. Of course, when substituting equipment we need to consider if we are also substituting risks for new ones – working with a MEWP brings its own set of requirements and controls different from working on a scaffold.

The working environment should be engineered to ensure it is safe. For example, ensuring that scaffolding is constructed to the required standards, or appropriate edge protection is provided at exposed edges.

There is a suite of administrative control measures available to manage and control working at height. The organization should establish appropriate Standard Operating Procedures for the activity and may seek to implement a Permit To Work process dependent on the work at height activity and exposure. The activity can be managed to further reduce

exposure and thus likelihood through job timing and job rotation. Essential to and underpinning all of these measures is to ensure that the people undertaking the activity have been appropriately and effectively trained and are competent to do the work and use the equipment.

Finally, we shall consider and implement the necessary PPE to prevent falls (e.g. footwear, gloves, etc) and consider the application of a Fall Arrest System if there is a fall from height. Careful consideration should be given when selecting the Fall Arrest System considering the activity and environment as well as the rescue plan to avoid suspension trauma.

Considering the risks associated with work at height and putting in place sensible and proportionate measures to manage them is an important part of working safely and preventing falls. A systematic and considered approach in recognizing the severity of the consequences of work at height and establishing a set of effective control measures should ensure that your organization effectively manages these activities and does not suffer the severe potential outcomes.



Peter Hurley

Peter Hurley (CMIOSH, MIIRSM) is Chief Engineer with the Industrial Development Bureau in the Abu Dhabi Department of Economic Development with

over a decade of occupational safety and health experience. He is responsible for the implementation of the Abu Dhabi Occupational Safety and Health System Framework in the Industrial Sector of the Emirate of Abu Dhabi. Peter is the chairman of the UAE Branch of the International Institute of Risk and Safety Management.



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News Updates

by *Rebecca Kelly*

It is impossible to ignore the impact of the COVID-19 pandemic on the construction industry – in the UAE in particular, the construction industry is essential to the country's economy and as a result, the UAE Government have introduced measures to protect the 'vital' sector, exempting it from government restrictions and allowing construction sites to remain operational throughout. In 2019, the Dubai Chamber of Commerce confirmed that the value of construction contracts awarded in the UAE was estimated at USD 48.4 billion, the highest across the GCC region.

Whereas other sectors have been forced to comply with the UAE Government's precautionary measures to limit the spread of the virus, for example, with 70% of the workplace of the private sector being asked to work from home, the construction sector was largely exempted from the lockdown during the nationwide sterilisation campaign and has remained operational throughout the pandemic.

Construction companies have been able to continue to commute workers to and from sites, albeit at a capacity of 30% to ensure social distancing and provided that transport buses undergo frequent cleaning and sterilisation with Dubai Municipality approved products.

Mandatory precautionary measures must be carried out at construction sites, which include, inter alia, wearing protective masks and gloves, measuring the temperature of workers entering the site, maintaining physical distancing and continuous sterilisation of work sites. Likewise, in labour camps, there must be adequate sanitation, disinfecting measures and regular temperature checks. Where a worker is found to have a body temperature of 37.8 degrees or more, the work must be placed in isolation. In some labour accommodations, workers are

required to take a shower and disinfect their clothes using the prescribed disinfectants on returning home from the site.

Construction companies are encouraged to conduct awareness sessions at labour accommodations, to ensure that workers are given adequate information about the coronavirus, how it spreads when it can lead to and how they can protect themselves from it.

Also, the Dubai Development Authority ("DDA") has created a digital portal to process all engineering services, so that standard physical requests such as registration and licensing, can now be submitted electronically. Similarly, the DDA has announced that companies are now permitted to construct accommodation on site to limit the number works being required to be transported to and from the site, which conversely means that existing labour camps then can more easily adhere to social distancing guidelines.

As a result of these measures and other government stimulus packages, modest growth within the UAE's construction industry is expected in 2021 – projected contraction is relatively mild and a return to growth in output is expected next year.



Rebecca Kelly

Representing both the UAE and international entities both regionally and internationally, Rebecca Kelly counsels clients on arbitration, litigation, corporate and regulatory compliance, regulatory investigations, occupational safety and health and white collar crime issues. In every issue, Rebecca will address your questions, so do send in your questions to: askthewriter@wshasia.com

Morgan Lewis



Next Generation Safety Leadership From Compliance to Care

Clive Lloyd

 CRC Press
Taylor & Francis Group

“Next Generation Safety Leadership: From Compliance to Care” offers meaningful applications that bring theory to life through case studies and stories from the author's many years of experience in high-risk industries. The author begins by presenting safety leaders and their organizations with a compelling case for change – for doing *Safety Differently* – and then provides practical advice and clear strategies that enable leaders to create psychologically safe teams. The book uses a clear and conversational tone, translating academic jargon into actionable goals.

Through the use of industry examples, humor, and leadership case studies, the book leaves the reader with a comprehensive toolkit that

will enable the development of a more mature, proactive safety culture. Written primarily for the safety community, the book will be of interest to Operations Managers, General Managers, Health and Safety Managers, Safety Advisors, and Maintenance Managers.

This book is a must-have for any safety professional, whether you're an established practitioner or an aspiring one, you will take something away from reading this. Clive Lloyd has raised the bar on how the industry needs to drive forward in the 21st century. I cannot recommend this book enough, worth every penny and a book I'll read again and again.
(Neil Fisher)



About The Author

Clive F. Lloyd is an Australian-based Psychologist specializing in Safety Leadership and Culture Development. He was recently named among the top 5 global thought leaders and influencers on Health & Safety by Thinkers360. He is co-owner of, and Principal Consultant with, GYST Consulting Pty Ltd and developer of the acclaimed *Care Factor Program*. Clive has spent the last 20 years assisting organizations to improve their safety performance by developing trust and psychological safety and doing *Safety Differently*. He has worked with global mining, oil, and gas, construction, and utility companies in Australia, New Zealand, Fiji, USA, Canada, South Africa, Norway, Singapore, China, UAE, PNG, KSA, United Kingdom, and Costa Rica. He lives on Australia's Gold Coast with his wife, Tanya, and two rescued working dogs.

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DAVE BASS 1966-2020

Remembering one of the pioneers of Safety & Health In Dubai

Sadly, I write a short message about Dave Bass who left us recently. Dave has been a great leader for me knowing him for many years working on many projects together, extremely passionate about helping others understand and develop their skills.

Dave had introduced me to many good friends from government sectors, IIRSM, IOSH, Nebosh, and many more who share the same goals.... I echo what Jon has mentioned, *we have lost a friend and a great advocate of the safety professionals' community.*

Jason Woods | WSH Asia Co – Founder Middle East, South Asia and Africa

It is with heavy heart that I am writing this testimony to a dearly departed friend and safety professional, Dave was inspirational in developing the Health and Safety Culture in the UAE and beyond a larger than life character who was a mentor, teacher, friend to so many giving them professional and personal advice. Dave along with myself and a handful of others set up IIRSM Branch Middle East with six attendees at the first meeting and by the time Dave had left the UAE this branch had grown to over 200+ members. Today we have lost a true professional from our profession a man who worked tirelessly to keep people safe in the workplace by changing the mindset of governments, Board of Directors, and senior managers.

Today we mourn the loss of a friend, colleague, and inspirational leader in our profession who will be missed by so many.

Frank Higgins | Head of HSE, Raysut Cement Company

Dave has been always a bigger brother to me. He was a role model to federal safety inspectors and was simply known among them as "Uncle Dave". He was a role model for all of us with his dedication and professionalism. Not only I will greatly miss him, but his students and UAE will miss him too. Our condolences to his family. Rest in peace big brother.

Dr. Ali Salem Al Qaiwani | Disaster Management Consultant, Dubai, United Arab Emirates

We have just found out about Dave's abrupt exit from the world. Dave was a legend amongst the Middle East Safety professionals. Dave was the oracle for all things relating to systems and processes, on many occasions during our early years in the Middle East, we were both heavily engaged with IIRSM and part of the cooperation with the UAE government to revamp the HSE laws and guidelines, this was Dave in his element, and he added expertise and knowledge to the group, culminating in the issue of new construction-related guidelines and laws in the region.

In later years, I consulted with Dave on many situations and when I left my position in Samsung to move to Asia, I strongly recommended Dave to take over, which he did with flair and determination.

Dave is a larger-than-life character today we have lost a friend and a great advocate of the safety professionals' community.

Jonathan Eades | Vice President Corporate Environment Health and Safety, Singapore

I have known David for more than 15 years ago when we met together first time with one of his safety team at Al Naboodah Company.

I dealt with David as a human as the eldest brother who gets his advice on many personnel matters and He had a good sense of humor as his smile reflected a pure heart and his personality was characterized by transparency and honesty

I considered David as a leader in his field and has many fingerprints with different international bodies around the world

Goodbye, David

Mohamed Abd Elsalam Hassan | HSE Consultant & Training Expert, United Arab Emirates



FIRE SAFETY

Reacton Fire Suppression

by *Reacton*

Why automatic fire suppression is critical to heavy equipment and vehicle safety

Engine fires in plant and heavy vehicles are an increasingly common and expensive occurrence.

With 62% of these fires starting in the engine bay and a readily available solution in automatic fire suppression, there's no wonder that some insurance companies are starting to insist that accredited systems are installed as a condition of their policy cover.

When faced with the sheer brutality of the damage caused by plant fire in terms of loss of equipment and downtime, the decision to install automatic fire suppression should be straight forward.

What is automatic fire suppression?

It's a system that can detect and extinguish, or contain, a fire without having to rely on a person to intervene.

How does it work?

With no power needed, it will detect a fire, actuate the system and deliver an extinguishing agent within seconds of a fire starting.

Why is automatic fire suppression needed if there's a fire extinguisher available?

With operators concentrating on the task at height, a fire might not be spotted quickly. And if the fire starts in the engine on the ground, by the time it is noticed the fire will likely have already caused extensive damage to the equipment and become too dangerous to tackle.

What should I look out for when selecting a system?

When selecting an automatic fire suppression system, accreditations should do the talking. Making sure any system you are considering has been rigorously tested to meet, or exceed, the demands of the environment and asset it will be installed to are critical.

Are there standards specific for heavy equipment?

P-Mark SPCR 199 is an accreditation specifically for fire suppression systems in engine compartments of heavy vehicles. Reacton Fire Suppression currently the first and only company in the world to achieve the prestigious P-Mark SPCR199 standard for fire suppression heavy equipment vehicles.

Awarded by RISE, the leading vehicle accreditation safety body, achieving the P-Mark SPCR199 standard means that Reacton is unique in being able to offer an accredited fire suppression system that meets the stringent requirements demanded by the heavy equipment market.

Fire protection for the construction heavy lifters at Dubai Expo 2020

The UK Pavilion at Expo Dubai 2020 is currently under construction in the Opportunity District. It's one of 192 country pavilions that will be located in this architectural masterpiece made solely from organic materials, including timber and woven rope.

With the project due to finish in March 2021, the substructure is nearing completion and the team's focus is now on creating the façade and the superstructure. This is a phase in the project that relies on the heavy lifting of some of the strongest cranes on the planet that are

powered by temporary generators from Byrne Equipment Rental and protected by automatic fire suppression from Reacton.



Gary Sherrington-Boyd, General Manager at Reacton Fire Suppression explains: "Like any equipment powered by an engine, high temperatures, fast airflow and flammable fluids in generators are potential fire hazards.

"By installing automatic fire suppression systems on their equipment, Byrne Equipment Rental are protecting their generators and their customer's operations from a fire should it arise."

Fire suppression systems installed in and around the fire risk areas of this vital equipment provides operators, prime project contractors, and subcontractors with around the clock fire protection. If a fire occurs, Reacton's system will detect the flame within seconds and deliver an extinguishing agent straight into the heart of the fire. With detection, actuation, and delivery is all taken care of automatically without the need for power, no human intervention is needed to discover or tackle a fire.

Reacton's automatic fire suppression systems are tested to meet the highest standards in the world. We're passionate about fire safety so don't just say our systems are the best; meeting and exceeding the demands of the most rigorous tests in the world means that our third-party accreditations demonstrate that they are. We're proud that our systems protect some of the most well-known superstructures and critical infrastructures on the planet.



First-class customer service is in our DNA, it drives everything we do and, combined with our third-party product accreditations, means our customers have complete trust in Reacton. Establishing an in-region presence demonstrates our commitment to supporting our customers from concept through to creation and installation.

Some of the biggest construction, engineering, and exploration projects in the world are in the GCC and Asian territories. With lifting and heavy plant equipment critical to these ventures, it's no surprise that contractors want to keep their people, assets, and infrastructure essential to these operations safe. This is where Reacton's world-class automatic fire suppressions systems are relied on to protect mission-critical equipment and billion-dollar operations from the devastating impact of fire.

Reacton opened in December 2019, closely followed by Fireward Fire Suppression as the local agent and installer representing Reacton in the UAE. Fireward Fire Suppression is perfectly placed to support our growing network of distribution partners across the region with best in class product and installation training.

Reacton

Why set up Reacton in the UAE

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AIR/GAS SAFETY

How to decide what portable gas detector one needs?

by Rajamohan

Choosing the right portable gas detector for your company is not always that easy. The market is flooded with Out-of-the-Box solutions that at first glance look as if they might fit your requirements. However, your company is unique, why should a generic solution provide the answer to your challenges?

Nevertheless, choosing the right portable gas detector is not rocket science either. It is a simple elimination process in which you must answer the following 5 questions for yourself:

1. Which gases are used in the processes or can occur on-site?

Depending on the answer, the solution might be as simple as a one-gas detector or a demanding as a multi-gas device capable of supporting highly specialized sensors. All that is important now, however, is that you have a complete list of the gases that may occur.

2. How long are your employees exposed to these gases?

We tend to forget that every one of us is permanently exposed to gases. They are called the atmosphere. It goes without saying that gas detectors must warn of suddenly occurring dangerous gas concentrations. However, it is at least as important to monitor the permissible workplace concentrations. Good portable gas monitors protect against both acute and long-term risks.

3. Are there special requirements regarding explosion protection?

In principle, any electronic device can become an ignition source. Where Ex-zones are designated, only appropriately certified equipment may be used. Even more demanding requirements apply to the mining industry.



4. Do some or all devices have to feature special functions?

The most common additional function is probably a pump. Health and safety regulations all over the world require that Confined Spaces must be cleared before they can be entered. Failure to do so properly is one of the most frequent causes of fatal accidents at work worldwide.

Remote monitoring of gas detection devices is also becoming increasingly important. The keyword here is Connected Safety. GfG uses radio modules to inform the supervising person or a control center about alarms, emergencies, and the gas concentration on site. It is important that the chosen method of communication also works reliably on-site and ensures that interrupted connections are indicated immediately.

A sometimes overlooked requirement is battery life. The gas detector must have a rechargeable battery that will last for long working days including travel times. Special requirements arise from the use of pumps, radio links, or sensors with increased power consumption.

5. What is the total cost of ownership?

The last point to consider is the price. You run a business therefore costs are of importance, but compared to the costs associated with even a small accident or short production downtime, the money you might save by buying something cheap is negligible.

Choosing a quality product might even provide an opportunity to save on insurance costs, because you can prove that you're actively improving safety, adhering to compliance regulations, and thus minimizing insurance risks.

That does not mean that one has to neglect the cost involved. In addition to the initial costs, the expected lifetime of the sensors, the costs for replacement sensors, the daily bump tests, and the regular maintenance have to be considered. The estimated TCO will provide better guidance on what product to choose than the device's purchasing price.

In the end, you will always need to speak to the supplier of your choice, to ensure that the sensors have the correct resolution, that all potentially occurring gases are monitored, that national and international safety standards are observed and all the criteria formulated are met. Nevertheless, those 5 steps should provide you with a sound base to reach a decision.

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عليه من ضرورة اتباع الاجراءات الوقائية المنصوص عليها والتي تعتبر بمثابة قوانين تنص عليها التشريعات الدولية بل وصل الامر الى حد توقيع العقوبة على كل شخص يخالف تلك التعليمات اثناء ممارسة أنشطة الحياة اليومية في جميع المجالات ووصولاً الى مجالات العمل نظراً للخطورة المترتبة على عدم اتباع تلك الاجراءات والتقيد بها، نعم فان هذا التحدي هو حالة انسانية استثنائية تطلبت تضافر الجهود والتكاتف فيما بيننا للتغلب عليه والتوصل الى اكثر الطرق فاعلية للتعامل معه، حقا فان هذا التحدي يرجع اليه الفضل للاتفاق فيما بيننا وللمرة الاولى في مجالنا المهني وكذلك ايضا التسليم بخطورة هذا التحدي بدون تردد او الرجوع الى نظريات فلسفية لا تغني ولا تسمن من جوع مع ضرورة التعاون بصورة جماعية وفكر موحد حول ايجاد افضل السبل التي تضمن تعاملنا فعلا يسمح لعجلة الحياة بالاستمرارية والانتاج الامن للبشرية وتجنب الآثار السلبية المترتبة عليه

واخيرا فان السؤال التالي يطرح نفسه علينا الا وهو (هل نجحت البشرية بجميع امكانياتها وطاقاتها العلمية والنظرية على حد سواء في مواجهة هذا التحدي والتصدي له بصورة لائقة تتناسب وطبيعة المخاطر الناجمة عن هذا التحدي والذي يمثل اختبارا حقيقيا لمهنة السلامة بالعصر الحديث بل للبشرية جميعا؟

هذا السؤال بانتظار إجابة شافية

محمد عبد السلام حسن

استشاري صحة وسلامة مهنية



وهنا سوف نخصص هذه المقالة لمناقشة جانب من تلك التحديات حيث انه من الصعوبة بمكان حصر واستعراض هذا الكم الهائل من التحديات جميعا من خلال هذه المناقشة لانه كما تم الاشارة سابقا فان الوقت لا يسعنا لحصرها جميعا بالاضافة الى ان تلك التحديات تتميز بقدرتها الفائقة على التغيير الدائم وايضا الاختلاف والتفاوت من ثقافة الى اخرى داخل المجتمع الواحد فما بالك عزيزي القارئ ان تتخيل معي هذا الكم الهائل من التحديات اذا تم التطرق اليها بشيء من التفصيل ومحاولة حصرها والاتفاق عليها مع الاخذ في الاعتبار تعدد واختلاف المجتمعات والبلدان على مستوى العالم، نعم انه لتحدي لجميع العاملين بمهنة السلامة والصحة المهنية يتطلب تضافر جهود مخصصة وواعية للاتفاق حول قائمة موحدة لتحديات مهنة السلامة والصحة المهنية ولكن من البديهي ان هناك عدد لا بأس به من التحديات يمكن الاتفاق بشأنه والذي تم التوصل اليه من خلال اساسيات ممارسة مهنة السلامة بالمجتمع على اختلاف طوائفه الثقافية ولكنني في هذا المقام فانه لايسعني التطرق ومناقشة المزيد من تلك التحديات التي قد يتفق معي البعض بشأنها ويختلف معي الكثيرين للتسليم بها على ارض الواقع حيث ان هناك العديد من الكتابات والاجتهادات من متخصصين وهامات ذات شان مهني بمجالات شتى قد تناولت هذا الموضوع من زوايا متعددة ولكنني سوف اتطرق الى واحد من اهم تلك التحديات على الاطلاق والتي يتفق حولها حتما جميع المتخصصين العاملين بمهنة السلامة على اختلاف ثقافتهم حول العالم ولا يختلف حولها اثنين الا هو حتمية التعايش مع فيروس كورونا اثناء ممارسة العمل بصورة يومية وما يترتب



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