

Technology IN Workplace

WHSHE AND TECH
Digital Safety

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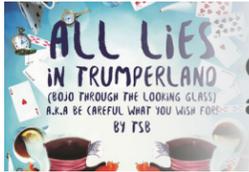
WHSHE AND TECH
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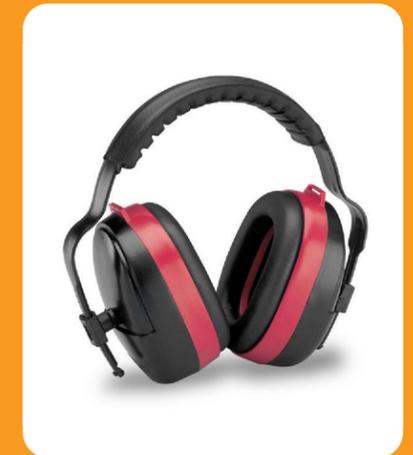
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WSHE AND TECH

Turning Virtual Into Reality

by Nigel Taylor

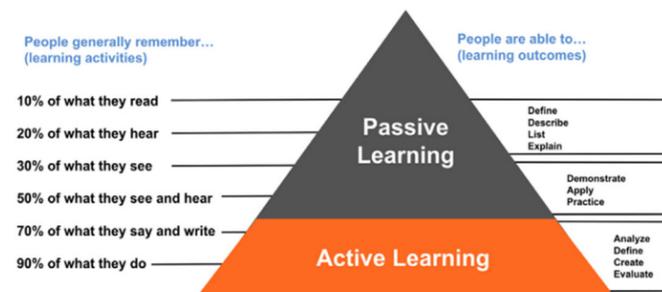


Today’s demanding worksites are increasingly integrated, deadline-driven, and reliant on heavy machinery. That can lead to increased safety risks—an unfortunate trend that’s evident in the rising rates of industrial accidents and fatalities across Asia, as reported in the [Asian Development Blog](#).

This is the problem Serious Labs is working to solve with cutting-edge virtual reality (VR) technology. Using the power of VR for assessment, training, and accreditation, this global company develops immersive simulators for heavy equipment, including the Mobile Elevating Work Platform (MEWP) VR simulator which is already being used in Singapore.

“Our business is all about helping workers become more skilled operators and getting them home safely each day,” says Nigel Taylor, Serious Labs’ European Director. “We do that by enabling them to operate machinery more safely and confidently, all in a VR environment that never puts them, the equipment, or the site at risk.”

The technology works because it’s possible to learn real-life skills in VR. Studies show that learners build proficiency faster and retain more than they would with traditional classroom learning since VR is a fully immersive “active learning” experience. (see the pyramid below)



“It’s very similar to how airlines train their pilots using flight simulators,” says Taylor. “When you put that headset on, suddenly you’re on a worksite, carrying out the actual tasks you’d be performing in real life. There are dozens of scenarios, from beginner to advanced; it’s a tremendous way to assess, train, and accredit an operator.”

While simulators have been around since the 1950s, Serious Labs is leading the charge to bring them to the heavy equipment industry. Their simulators use real-world machine controls, immersive VR headsets, and hydraulics to create authentic movement. They’ve also greatly reduced “cybersickness” —the feeling of motion sickness that VR users sometimes experience—thanks to advanced synchronization of hardware and software, where the base moves in harmony with the movement of the machine controls.

Serious Labs offers a three-in-one simulator for the boom, slab, and rough terrain scissor lifts, as well as a crane simulator developed in partnership with Industrial Training International (ITI). A forklift simulator is launching later this year.



(Pictured: a Serious Labs MEWP VR Simulator)

Building a safer industry through assessment, training, and accreditation

How do the simulators make worksites safer? “It comes down to two things: ongoing assessment and training,” says Taylor.

Assessment refers to how the simulator can evaluate an operator’s level of proficiency. As users carry out tasks on the virtual worksite, the simulator assesses them on over 130 data points—everything from where they’re looking to whether they choose the right controls and how carefully they use them, also known as feathering.

“With human assessment alone, you can never possibly capture all of those factors,” says Taylor. “Despite the best of intentions, human assessors are subjective, and we make mistakes. The simulator gives us a tool that’s always accurate and objective, and this enables like-for-like comparisons between operators and on a macro level across different worksites or subcontractors.”

Serious Labs calls its assessment “operator telematics.” Modern heavy equipment is typically fitted with telematics and the MEWP VR simulator provides the other half of the equation with in-depth information about an operator’s safety and skills. Serious Labs breaks this down with a scoring system called ESP™: Efficiency + Safety = Proficiency. It’s designed to take the results from all the data collected and convert them into an easily interpretable number out of 100.

“After running a group of workers through an assessment, you’ll be able to quickly tell who your most proficient operators are, as well as those who need targeted training,” says Taylor. “One key benefit is that you can identify poor operators in advance of them entering the worksite. Often, this includes operators who have previously obtained a MEWP license but may not have used one for some time, and their skills have lapsed. At the same time, even highly experienced operators are not immune to developing bad habits.”

Whether it's operators whose skills have lapsed or those who've slipped into poor practices, the MEWP VR Simulator provides automatic recommendations for training and improvement.

What does this follow-up training look like? "The simulator provides a clear understanding of an operator's specific skill gaps and how to address them," says Taylor. "Follow-up training can take place on the simulator, which will tailor its training program to work on those areas. Similarly, follow-up training may take place in a classroom or on a real machine. What's important is to spend time improving skills and shoring up the identified deficiencies."

Above all, the goal is to instil safe, best-practice operating measures. As shown on the behaviour-based safety triangle, below, these measures help reduce unsafe behaviours and conditions, which has a cascading effect of reducing more serious incidents. "By reducing those risky behaviours at the outset, the simulator is training operators to make their whole site safer," notes Taylor.



Another significant benefit of VR is the ability to practice and prepare for scenarios that would be too expensive or dangerous to recreate in real-life training. "It's hard for airline maintenance workers to practice because if a MEWP accidentally hits an aircraft, the cost is eye-watering," says Taylor. "So we've developed aircraft-specific scenarios and we're working with clients like major South East Asian airlines to train their Aircraft Engineers."

VR: A tool for a changing world

Taylor's message for safety professionals considering VR solutions is that the time is now. "This is a technology that's becoming increasingly common. What we're seeing now is that it's been refined to the point where it's easy to use and it's providing real benefits. We're able to take the world's best training centre directly to our client's sites, which results in less downtime for operators. There's also improved safety from a COVID-19 standpoint as operators don't need to leave the site to receive their training."

As employers look for ways to train workers in safe operation—especially younger generations who have grown up with technology—Taylor isn't surprised that more and more of them are turning to VR. "It's where the world is going. We've got simulators on the HS2 construction project, which is one of Europe's largest projects and we're seeing more and more deployments across the globe. It's a technology that's coming into its own."

Taylor also thinks VR training aligns with how the world is changing. "There are more and more e-learning and remote training taking place, and the impact of COVID-19 has accelerated that. Blending theory-focused e-learning with simulator use in a controlled

environment is going to be a requirement during our recovery from COVID and beyond. The time has now arrived to enhance traditional training with virtual reality, and that's what we're here to do."

To learn more about Serious Labs, visit www.seriouslabs.com or email info@seriouslabs.com

About Serious Labs

Serious Labs is an award-winning technology company that develops virtual reality simulators for heavy equipment. Available in multiple languages and used in over a dozen countries worldwide, these ultra-realistic simulators train heavy equipment operators to work more safely and efficiently. Using the power of virtual reality, Serious Labs helps reduce industrial risks so that workers can get home safely every day.

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Gloves



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Our Commitments

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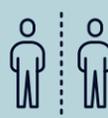
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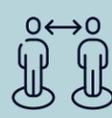
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WSHE AND TECH

Bring PPE to life with the new interactive DigiHUB from JSP



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About JSP

Established in 1964, JSP is internationally recognized as the leading manufacturer of innovative ‘above the neck’ Personal Protective Equipment specializing in Head, Eye, Face, Respiratory Protection, and Height Safety Products.

With state-of-the-art manufacturing and testing facilities in 7 factories over 3 continents, JSP is committed to improving occupational safety, health, and well-being of people in the workplace worldwide and has been voted European leader in Industrial Head Protection by Frost and Sullivan.

Significant research and development investment and end-user feedback have enabled JSP to design award-winning PPE that performs to the highest levels in extreme environments, that is intuitive to operate, lightweight, comfortable, and stylish to wear, and compatible with other JSP PPE.

JSP operates a BSI Kitemark scheme for products, the platinum standard for product quality providing a guarantee that every product that JSP manufactures is from a batch that has been controlled and tested to ensure it passes the relevant standard. JSP is the chosen brand for workers as they can be confident that by choosing JSP PPE they are wearing a Tested, Trusted, and Traceable product with full technical backup and support.

JSP safety helmets, hearing products, respiratory, and eyewear can be customized according to individual specifications using corporate logos and color schemes, safety messages, personal names, and identity systems.

Sustainability is of great importance to JSP and by continually improving the methodologies used during manufacture, designing products to be recyclable, concentrating on Product Lifecycle Management, JSP will help to ensure a safer more sustainable future.

JSP sells their products exclusively through its distributor network partners in over 100 countries, helping modern multinational end-users implement the most effective and efficient health and safety protection programmes worldwide.



SAFETY LEADERSHIP

Business Skills for HSE Professionals

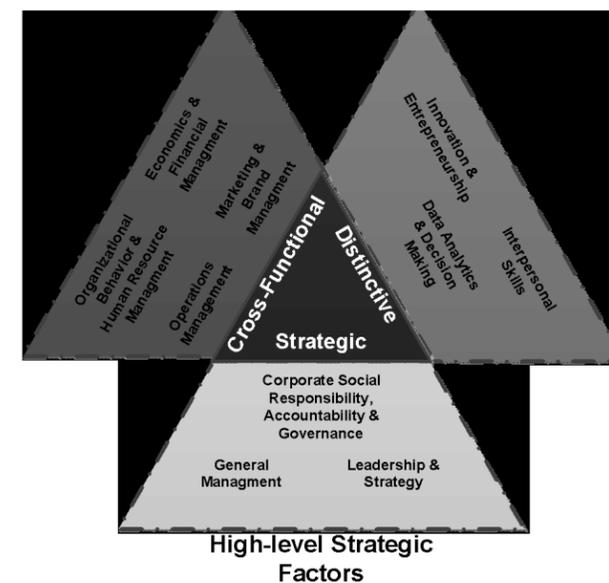
Transforming from HSE Manager to Director

by Dr Waddah Ghanem Al Hashmi* and Dr Rob Cooling**

There are significant opportunities for Health, Safety and Environment (HSE) practitioners to improve their understanding of the language of business to develop influence. Organisations seek to achieve continual improvement in HSE standards, culture, and performance and therefore HSE practitioners must be equipped with the right business skills and acumen to drive change. As two experienced practitioners who eventually became Directors, we reflected on our development paths and growth and eventually realised that we could be business leaders, more than our experience as HSE practitioners, which allowed us to occupy director positions relatively early in our careers.

We both embarked on MBA programmes and a few years ago published a book, *The Ten Step MBA for Occupational Health and Safety Practitioners* (Routledge, 2018) which takes the reader through 10 Steps encompassing a typical MBA programme. The book establishes three key themes which are deemed critical in understanding the world of business to exert greater influence.

- **Strategic** – *aligning HSE to the overall direction of a business and creating a lasting HSE purpose that all stakeholders can relate to*
- **Cross-functional** – *understanding the different parts of an organisation and integrating HSE within business functions and ways of working.*
- **Distinctive** – *looking for creative new ways of presenting HSE data and information to generate interest and enthusiasm.*



As we developed the research and the book, we looked at ways to help HSE practitioners working in strategic roles, with responsibility for HSE across multiple sites and jurisdictions. We debated, leveraging on our own experience what those who were aspiring to reach senior positions needed to know about business whilst

assessing its relevance to our profession. HSE leaders need to be fully aware of key business functions (e.g. Marketing, Finance, Human Resources, etc.) and how all these functions contribute to the bottom line. Sometimes we are critical that other functions do not understand HSE, but how often do we take time to understand the constraints of other functions?

Whilst our book is written within the context of Occupational Health and Safety, we recognise that many organisations have an integrated approach to Health, Safety and Environment (and often other disciplines), with the 10 Steps of the MBA programme just as relevant to the Environment and Sustainability professionals, who often have to face similar challenges in convincing organisations of the added value of their work.

In the series of articles to come, we will discuss lessons from the world of business and their relevance to HSE. Step 1 covers *Strategy and Leadership*, including key leadership styles, leadership theories and frameworks. The importance of creating an HSE strategy aligned to corporate strategy cannot be underestimated. This includes setting a vision, developing a clear road map for realising this vision and implementing compelling programmes to develop influence and impact. Recently the importance of strategic agility and its application to HSE management has become prominent to respond to change and disruptions like we have seen during the COVID-19 pandemic.

We address *General Management* in Step 2. In the management of an enterprise, essential skills are needed to manage risks and opportunities from a holistic perspective. Understanding the requirements contained in ISO 45001 is central to the success in the development, implementation and maintenance of an HSE management system. The ability of HSE professionals to be able to manage projects is another important skillset in many organisations.

Step 3 covers *Corporate Social Responsibility and Governance* which have become areas strongly connected to HSE. The organisation as a corporate citizen should be understood from a moral and ethical perspective, with key concepts often a usual vehicle for promoting HSE. Importantly, we should always be looking to integrate HSE with corporate governance best practice. The ongoing shift to risk management includes a growing awareness of enterprise risk management, business continuity management and the opportunities created in HSE practice cannot be underestimated.

Organisational culture and cultural maturity focus on the design and implementation of behavioural change programs in consideration of emotional, rational, and situational factors. Understanding human resource management is essential in creating an effective strategic alliance between human resources and HSE functions to leverage cross-over points and collaborative opportunities. *Organisational Behaviour and Human Resource Management* is considered in Step 4 including the growing focus on well-being and mental health.

Economics and Financial Management is approached in Step 5, addressing economics, including microeconomics principles, frameworks, and tools applicable to OSH. The importance of improving financial acumen to develop influence is essential for the HSE professional. The application of financial tools, including net present value and cost-benefit analysis can help to determine the value added by HSE interventions and programmes.

At the heart of what we do as organisations are *Operations Management* which is covered in Step 6. This includes the oversight, design and control of business processes. The development of business management systems and the arguments for and against the integration of management systems, as well as operational

excellence, should be considered by HSE professionals, along with key operations management issues, such as procurement, outsourcing and supply chain management.

Step 7 evaluates *Marketing and Brand Management* providing HSE practitioners insights on the development, selection and execution of marketing strategies for an organisation's product and/or service offerings, and their relevance to HSE. Aspects such as brand management and marketing strategy are essential for situations when HSE professionals need to take on the role of marketer to raise the organisational profile of HSE. HSE practitioners must also recognise their core competencies to build a compelling value proposition and narrative for their role and function within an organisation.

Data Analytics and Decision-Making is approached in Step 8 and focuses on the essence of decision making and the importance of objective data and analysis in reaching sound and robust business decisions. HSE Practitioners should learn the analytical tools, including descriptive and inferential statistics, how to quantify and present uncertainty and to be able to ask the right questions when presented with different types of data.

Innovation and Entrepreneurship are tackled in Step 9. The concept of innovation and change management and how organisational systems, infrastructure and capabilities can be created to encourage innovation, and how experimentation can be encouraged within the confines of an HSE management system is a fascinating subject. In this ever-changing and dynamic world, entrepreneurial skills are increasingly necessary, including in the area of HSE.

Finally, *Interpersonal Skills* are discussed in Step 10. The concepts of emotional intelligence and their relevance to career progression, leadership and growth continue to grow in importance. Key interpersonal skills including communication,

teamwork, conflict resolution, empathy and curiosity all provide the HSE professional with an understanding of the softer skills needed to generate change in organisations. Practitioners should recognise that it is by coupling theoretical knowledge, experience and interpersonal skills that they can enable themselves to succeed within an organisation. Understanding power within organisations and how to develop the ability to influence and persuade individuals at different levels of an organisation is also critical.

HSE practitioners aspiring for growth to senior leadership and directorship roles must continue to look for new ways to be more strategic and cross-functional in their approach, along with being distinctive in identifying innovative and new approaches to HSE practice. We look forward to sharing insights that we hope will assist in generating greater impact and the transition from HSE Manager to Director.

About Dr Waddah Ghanem Al Hashmi and Dr Rob Cooling

*Dr Waddah S Ghanem Al Hashmi is from the UAE, a Sr Director in ENOC, the Hon Chairman of the Energy Institute in the Middle East and Chairman of the Federal OSH Committee with ESMA in the UAE. He is a prolific writer and thought leader in the region and internationally. Dr Rob Colling is from the UK, a highly experienced Director, currently Vice President for Health, Safety, Quality and Environment at Expo 2020 Dubai and has served as an IOSH Trustee for the last 4 years. Both Waddah and Rob published *The Ten Step MBA for Occupational Health and Safety Practitioners* (Routledge, 2018), see [The 10 Step MBA for Safety and Health Practitioners - 1st Edition - Wa \(routledge.com\)](#).



The UAE and HSE Frequently Asked Questions

by *Rebecca Kelly*

The United Arab Emirates recognizes the importance of the ongoing development of the country that it must protect the welfare of its population and protect the environment for generations to come. Some of the most common questions we are asked are about the laws that exist to protect, and the standards to follow.

1. What are the relevant UAE regulations to comply with?

Some of the main HSE laws in the UAE are as follows, however, every Emirate may have additional requirements issued through the relevant department in the respective Emirate.

- Federal Law No. (24) of 1999 for the protection and development of the environment;
- Federal Law No. (8) of 1980 as amended – UAE Labour Law
- Ministerial Decision No. (27/1) of 1981 concerning remote areas and locations
- Ministerial Decision No. (32) of 1982 concerning preventive methods to protect employees
- Ministerial Decision No. (37/2) of 1982 concerning standards of medical care provided for Employees
- Ministerial Decision No. (4/1) of 1981 concerning hazardous works
- Cabinet Decision (13) of 2009 approving the standards for Labour Accommodation
- Ministerial Decision (591) of 2016 approving the guide for Labour Accommodation

Where an organization is licensed and where it does business in the UAE, impacts which rule it is governed by. The above list is not exhaustive, however, they are considered the main governing rules all companies must comply with.

2. How can we ensure safety in the workplace?

A key way to ensure safety in the workplace would be to install a “Safety Inspection” Program. Although safety inspections and audits are not required by OSHA, they are viewed as components of an effective safety plan. Inspects can be used, by articles 91 to 101 of the UAE Labour Law, to ensure that the safety and healthcare of employees is a top priority.

Checkpoints in a safety inspection should include:

- Mid-day breaks for employees working under the sun;
- Medical insurance provided to employees;
- Medical check-ups provided to employees at risk of contracting occupational diseases;
- Clear signage setting out means through which employees can protect themselves from hazards to which they might be exposed (to be provided in Arabic, English and the native language of the majority of employees);
- Readily available first aid kit or kits containing medicines, bandages and other first-aid materials.

3. How should we carry out a Safety Inspection?

A safety inspection is a procedure developed internally by any organization to recognize any unsafe conditions or acts and determines steps to improve safety for employees. In most cases, with construction sites, it is the responsibility of all personnel to actively be aware of unsafe conditions and continually report any issues. This type of practice minimizes potential risks and creates a safety culture. No construction site personnel should wait for a Safety Inspection to proceed before highlighting unsafe practices.

However, to ensure that nothing is missed a safety inspection would begin with the Safety Officers “walking through” a site to assess any noticeably unsafe conditions, examine equipment, and observe work practices to identify any unsafe procedures or actions.

The next step would be to review any findings by site design and operational access points to assess whether any changes can be incorporated to alleviate any hazardous conditions.

The final step would be to examine the safety training and response efforts of employees to ensure all are equipped with the correct knowledge of working in a safe way to achieve as hazardless an environment as possible.

4. Does an employer or an employee need to provide personal protective equipment to their employees?

Personal protective equipment is the equipment used or items worn to protect employees

from occupational hazards such as dust, dirt, fumes and sparks by providing a barrier to help prevent any exposure. The types of personal protective equipment required to depend upon the specific workplace and potential hazards but items could include protective gloves, gowns, hearing protection, goggles, overalls, aprons, masks, surgical masks with visors, respirators, face shields, and helmets.

5. When and how frequently should we provide HSE training to our employees?

HSE Training is essential to any health and safety program.

All employees should receive initial mandatory training before starting their role within an organization. Such training should consist of key areas such as emergency information and protocols, safety procedures for the employee’s specific role, personal protective equipment, hazardous areas and how to approach them, and safety communications.

As well as providing HSE training on an employee’s initial joining, it is also advisable to provide specific training upon the identification of unsafe conditions following a safety inspection or audit.

It is also suggested to provide periodic refresher courses on key HSE areas to all employees.



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

SAFETY

Combination of Common-sense Commitment and Compliance

by *Josy John*

Human beings are cognitive and process information from a variety of sources and the five senses to arrive at a decision. Being defensive and protective are inbuilt responses/reactions within humans depending on the situation, as also attack to protect or defend from danger if the capacity to attack is available within a person. The cognitive abilities of a person are connected to common-sense too.

Common sense essentially means a trait that is found in practice by all human beings who have a reasonable approach to life. However, when it comes to safety does common sense come into play, particularly the injuries experienced by people who are exposed and the damage to the property and environment as an outcome of the accident whether it is a major or minor one?

We are in a digital age where all information is converted into digits that are deciphered by software embedded in all types of equipment and the input at one end of the world can trigger a response at another corner of the world and a whole chain is set in motion.

What is a common-sense approach? If a given situation in your opinion looks to be unsafe it will be unsafe when a careful evaluation is carried out. The “do not walk past” campaigns organized by organizations are to develop this common-sense approach. However common-sense depends on the risk perception which has a bearing on the age of a person and the given situation when action is taken. The outcome can be useful, and, in some cases, it may result in an accident since the risk perception did not cover all the aspects that the hazard throws up and failure occurred. Common sense is an intuition that all humans possess, how it gets applied will vary depending on the knowledge and risk perception

Commitment to a cause will depend on the understanding of the issue and the impact of not having a deep commitment to the cause. Safety is a cause when approached from a public domain angle and individuals should consider a deeper commitment to the cause of public safety. Generally, individuals who have a high personal commitment to personal safety will also demonstrate the same commitment in the interactions in the public domain and vice versa. A commitment will come in two ways enhanced knowledge of safe practices/behavior in the public space and following an unwanted incident in personal life which has left a permanent reminder on the body or in some cases the image of that incident keeps acting as reminders.

The acknowledgment of knowledge accrued in the mind over the years as something that can happen in real life if precautions are not taken or the prescribed rules are not followed is commitment. Commitment is not an act of the mind, but a decision of the will, and the tendency of humans is not veering towards making that commitment. A “what can go wrong” thinking accelerates the commitment of the person to safety. This thinking should become natural just as at a dinner table when the lights go off, even in the darkness if there is food in your hand it will only go into your mouth, not into any of the other orifices on your head. Commitment to safety is an act of the will and the more it is viewed in that manner the safety practices will increase and the safety culture will improve.

The knowledge which is acquired over the years should extend not only to apply in the obvious in your face hazardous situations but also in the latent (below the surface) conditions. This is where commitment comes to the fore and forces a “thinking cap” to be adorned when carrying out activities and a mental checklist is developed. The will is a decision of the heart and is exhibited when the knowledge is transferred to the will and a decision is made to abide by safety and not taking the chance and keep fingers crossed until the outcome is experienced, the finger crossing can be anywhere from seconds to days for the result to appear.

Compliance is the next step a person takes after Commitment, which is following the prescribed safety management system. In public spaces, compliance is not monitored by a third party except traffic safety and therefore an internal list of compliances must be developed and will depend on the safety maturity of the individual. Compliance at an organizational level is the default situation in places where there is maturity in the safety culture the compliance is natural. It starts with a safety induction of the person on the first day at work and enough time is taken to make the person familiar with the safety management system and the rules for safe behavior on the premises.

Compliance at the organizational level happens only when compliance occurs at the personal level since the rules of safety engagement are applied by people. Therefore, when people are non-compliant, the organization by default is non-compliant. Compliance is verified by audits both internal and external and is carried out at specified intervals. However, many individuals and organizations only focus on the Compliance part as they view it as a paper exercise, produce records matching the compliance requirements. Overnight documents and records are prepared and provided to the auditor who generally does not go beyond the documents presented before them.

Compliance must move away from producing documents and records, it should come from the commitment of the individual and organization to safety, purely from protecting human lives from exposure to hazardous

conditions and preventing accidents at the workplace. Organizations that have a deep commitment will see maturity in their workforce and everybody will ensure that they take care of their buddies at the workplace by creating safe conditions prescribed in the safety management system and at the same time have a common-sense approach to the world around them.

Safety maturity is nothing but a common-sense approach as basic hygiene leads to a commitment to think and act safely by complying with the requirements of the safety management system of the organization. At a personal level set up benchmarks for safe behavior showing your commitment to safety in public spaces particularly.

Safety – Combination of Common-sense, Commitment, and Compliance.

About Josy John

Josy John is a Civil Engineer by training having graduated in 1986 with a bachelor's degree. After spending the initial years in India, he moved to Saudi Arabia and got into megaproject construction. He moved to the UAE after a year and spent twenty years moving to Safety after being forced by the organization. He did his NEBOSH NGC in 2000 and went on to do the Level 6 NEBOSH National Diploma in 2006 and was enrolled at Loughborough University for a Master's program post Level 6 Diploma. He returned to India in 2012 to head the Safety function at the Mumbai International Airport T2 project with Larsen & Toubro. At L&T he accredited L&T as a training provider for NEBOSH and IOSH Courses and has taught multiple batches. Currently, he is the Corporate Head of Safety at Tata Consulting Engineers and is ever ready to share his safety knowledge in safety and construction in a variety of forums and settings.



ENVIRONMENTAL

How to minimize the use of plastics *by Paul Schenk*

Probably the most relevant question to ask any individual or company today.

We love the stuff, we wear it on our bodies, we wear it on our feet. We eat off it, we carry items in it. We store everything in it. We love to wrap everything in it even a few times in some cases. Just look at our cupboards and fridges at home. For businesses even more so due to pure convenience and cost. It is truly a great product for versatility and value. We are now producing so much of the stuff we are drowning in it and it is time to turn the tide and switch it off. For the sake of the planet, nature and all living animals we must stop this addiction now. Microplastics are now found on every part of the planet from the ice caps to raindrops.

How to eliminate? This starts with you. The easy target is single-use. What are you using in your personal and professional life that is single-use and why? And I mean any single-use materials for example plastic, cardboard, paper, glass, aluminium. Alternatives are there, and we all must move fast to use them.

The recycling system is failed globally and in regions like ours in some countries, there is little to no recycling is done even if we do have the fancy bins to show we are doing something. So do not think for one second this is an option.

There are some really easy ways to tackle this from a business point of view.

1. Leadership, must be lead and owned by the leader of the organization or in any department of the organization. You can and will make a difference.
2. Set up a team to work on this within your organization to look at what you are using exactly and determine do I need this? Can I change the need for this or the way it works? Question everything and on the scale, for

example, the dry-cleaning in my hotel all came in plastic single-use sleeves, we removed them on the same day and saved 40,000 pieces of plastic going to landfill and guess what? Not one complaint or even a negative comment from the guests once you give the right explanation everyone is on board.

3. Meet with them and discuss alternatives to packaging and putting in place systems to reuse, re-use, re-use. Think of the milkman system. Now your milk comes in huge and thick single-use plastic and most cases are off to get buried in a landfill. How many milk cartons will you save? Let's take it further from the milk that now comes in a reusable system: make your yoghurt in house and save on the 1,000's of little single-use plastic yoghurt containers that get buried in the landfill.
4. Get your suppliers involved and educated ASAP, either they join you or you find someone else that will support your great efforts. Send all of there packaging back to them and let them deal with it. Trust me they will soon come up with a system to support you. Even my chemical company with the large single-use plastic tub's asked me to return them and they will refill them.

We have so many solutions and together we all can turn this around for a brighter future for all of us.

Paul Schenk

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Digital Safety

by *Prakash Senghani*

Safety.ai was founded with the mission of leveraging the potential of Artificial Intelligence and using technology to improve safety in high-risk work environments, while also increasing efficiencies, reducing costs, and minimising risk.

When the time came to digitise the construction industry the focus was mainly on automating processes on the delivery side, to boost efficiency and productivity for quicker delivery times. The collaboration was another key area to be digitised; through the implementation of BIM (Business Information Modelling) technology increases in efficiency through automated clash detection, improvement in design deliverable production are just some examples of the benefits. Health and Safety was not the main concern in the BIM movement as evidenced by its inclusion in the British PAS-1192 suite of BIM Standards only in part 6, which was the second last to be drafted.

This is where Safety.ai comes in. With the sole purpose to digitise the health and safety industry. Safety.ai is easy to access and an intuitive messenger platform. It is a mobile-first solution with a globally adopted chat interface, breaking the “formal” barrier of traditional safety methods.

Ultimately, the benefits of adopting a digitised safety method along with AI-enabled tools will allow organisations to make data-based decisions more frequently and to greater effect. Automating the task of data analytics means that the insights generated can be looked at in

greater detail, and decisions that need to be made can take place more quickly. Resulting in an improvement in workplace productivity, reducing risks of incidents and enhanced business performances.

Also, by identifying trends and patterns across data collected from the entire workforce, looming health and safety issues can be spotted and corrected far more quickly, making the job of HSE professionals far easier. Workers can also be empowered through access to the data, which can help them identify new areas of improvement, stimulate personal development, and achieve increased engagement.

Social Media Handles

Website

<https://www.saifety.ai>

LinkedIn

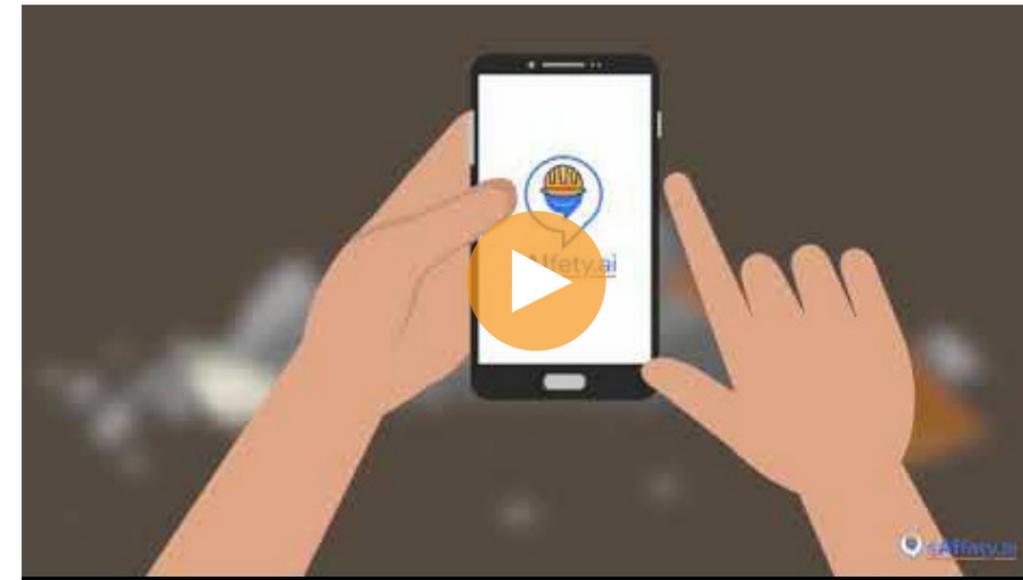
<https://www.linkedin.com/company/saifety-ai>

Instagram

<https://www.instagram.com/saifetyai>

Twitter

<https://twitter.com/saifetybot>



Here is our Explainer Video that tells you exactly what we do in more detail

About Prakash Senghani

Prakash has diverse experience delivering, designing, and managing large scale projects across multiple asset classes in the UK, Asia, and The Middle East. His passion for utilising technology to add value and tackle the challenges faced by the Construction industry has led to a career exploring and implementing the latest innovations across the project lifecycle. Prakash's main areas of focus are the continued proliferation of Building Information Modelling, the implementation of Artificial Intelligence and the advancement of Modern Construction Techniques such as 3D Printing and Modular Construction. Prakash is also an active entrepreneur and angel investor being a direct part of the change he wants to see in the industry and supporting start-ups with advice, expertise, and capital.



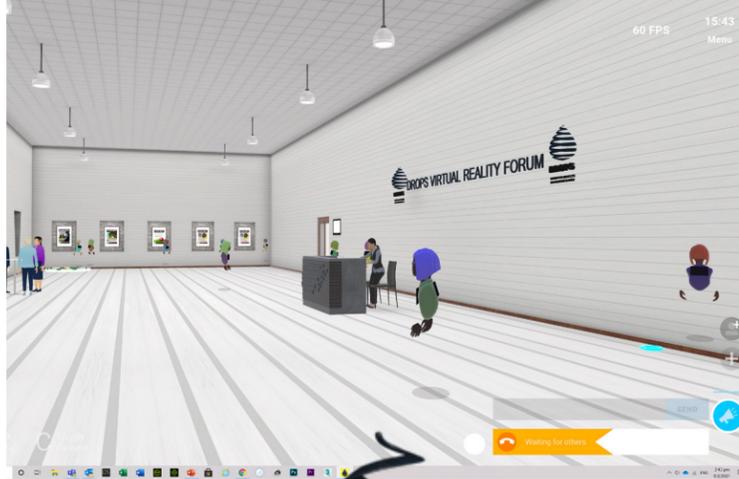
DROPS VR

by Joachim

This article examines how a global workgroup of different companies called the Dropped Object Prevention Scheme (DROPS) works together to greatly reduce the risk of falling objects. It explores how the Asia Chapter of this workgroup leverages Virtual Reality technology to remotely collaborate and inspire a new generation entering the workforce.

When working at height we consider the risks of falls and falling or dropped objects. Falls tend to have disastrous results most of the time but are easily preventable when companies are committed to doing so. Dropped objects tend to happen much more frequently but a much smaller portion is the cause of a fatality or serious injury. If no one is underneath while the object falls harmlessly to the ground, we are considered lucky. On occasion, a dropped object will do significant harm and it is often treated as some freak accident. But people on the ground, in the line of fire, know that many unreported similar incidents preceded it. The problem is much more complex and requires a significant commitment from the leaders in the company to address.

Within some industries, dropped objects are especially common. In the oil and gas drilling industry, a combination of working at heights in a small area with a large crew on a steel



structure, corrosion caused by seawater, and vibration from machinery increases the chance of dropped objects occurring and personnel getting harmed. Over 20 years ago, the sentiment that dropped objects were an acceptable and unavoidable risk changed into a realization that these incidents could and should be eliminated. A workgroup of energy majors and service partners called the dropped object prevention scheme (DROPS) was formed in the UK to tackle the problem. The Asia chapter of this workgroup was formed in 2009.

We raised the understanding and reliability of how we secure things at height and developed several secondary securing mechanisms in case the primary methods fail due to the causes mentioned above. **Reliably Securing** has become a handbook in the prevention of dropped objects in the oil and gas industry, has been translated into various languages, and has also been **adopted** to the wind energy sector.

Rather than considering ourselves lucky when no one got hurt, we started treating every single dropped object seriously and made it mandatory to record and investigate them. One of the tools to determine the potential severity of dropped objects is the **Drops Calculator** which can tell us what could have happened if someone were standing right underneath the falling object.

We started improving the housekeeping and conducting regular **hazard hunts** to eliminate unnecessary items at a height that has the potential to cause dropped objects.

We placed a systematic approach of internal and external **inspection programs** including usage picture books which were eventually digitized and are now executed mostly using industrial tablets. **Inspection of cargo** throughout the supply became mandatory to prevent dropped objects during lifting operations.

To prevent tools from dropping (which accounted for roughly 15% of all incidents), we devised an **engineered solution** that incorporates ergonomic attachment points on all tools for lanyards and assured individual components such as ratchet sockets and hammerheads do not become dropped objects. Tying off a tool with a piece of rope and sticky tape, which is unreliable, has become an unacceptable practice in this industry.

The above-mentioned practices have greatly reduced dropped objects in our industry and some companies have reported going without

a single incident for several years. And while this is a great achievement, incidents still occur. Accepting that we may never fully eliminate dropped objects, we also focus on reducing the likelihood of anyone getting hurt. For further details see Recommended Guidelines for use of Restricted Access Areas (**Red Zones**)

Energy majors started making the above-mentioned recommended practices a mandatory contractual condition for their supply chain. They set out their expectations in the **recommended practice guidance** which sets out the basic requirements and minimum recommended practices for Dropped Object Prevention that can be incorporated into existing Company Safety Management Systems. They use a comprehensive **checklist** to regularly audit their key vendors to assure compliance and expect them to do the same with their contractors so that the entire supply chain is covered.

The collaborative work mostly took place during drops forums which were held in hotels and attended by HSE professionals across the industry. This was the case for the DROPS Asia chapter which held forums in Singapore, Malaysia, Brunei, Vietnam, China, and Australia between 2009 and 2016. Being so geographically dispersed the Asia Chapter transitioned to holding its forums on webinar platforms like Zoom and recording them for its **YouTube channel**. Remote collaboration and meeting have become our standard way before Covid-19 happened.



Some of the current focus areas include using digital solutions to enforce red zone policies, enhancing the quality of internal and external inspections, improve planning to reduce the frequency of lifting, and improve the awareness and competency of personnel.

When a dropped object occurs, it is usually a failure of a combination of the above-mentioned best practices. It often stems from a lack of competency or awareness with the personnel involved.

To further raise awareness for the subject of dropped objects and inspire a new generation entering the workforce, the Drops Asia chapter has set out to develop a virtual reality training and collaboration tool called Drops Forum (VR). Using a virtual reality headset, a mobile phone, or a computer, professionals enter a virtual environment using an avatar. They can meet and speak with other professionals and learn from each other similar to the face-to-face meetings we originally held. It is more accessible and has a much smaller impact on our environment as no travel is required to attend the meetings.

In 3D environments like computer games, students can learn about the subjects mentioned in this article. They can do so under the guidance of a remote experienced instructor or at their own pace at any time. To try out the demo beta application, visit www.dropsvr.org

Virtual Reality has been “the next thing on the horizon” since the '70s but finally became technically viable with the invention

of the Oculus Rift in 2012. Through massive investments by Facebook and a range of other companies, the technology has rapidly evolved since then. Through the availability of cheap but high-quality hardware, its adoption globally has started to exponentially grow since 2018. Covid-19 associated lock-down also helped to increase interest. Its adoption is currently “only” in the tens of millions but combined with Augmented Reality, is expected to be the next computing platform following in the steps of the mobile phone and personal computer within a decade. All major tech companies including Amazon, Microsoft, HP, and Facebook are pouring billions in R&D for VR and AR.

Those investments are not just to capture a slice of a gaming market that triggered the development of the original Oculus Rift, many applications have been developed to serve the needs of Businesses and the DROPS Forum VR is one of them. Training applications in Virtual Reality have the potential to be much more engaging and effective than classroom or e-learning solutions.

About DROPS

The Drops Asia Chapter is an industry workgroup between energy companies, drilling contractors, and major service partners to raise awareness for- and promote best practices to prevent harm to personnel caused by dropping objects.



Point-of-use Document Verification Platform

Solving problems before they happen



GET INTO PLACES

Access to Facilities

MOVE AROUND

Travel and Transport



WORK ON HIGH-RISK JOB

Regulated activities



INTEGRITY

of the business

RECOGNITION

of positive behavior

REPUTATION

of organization and people



The pandemic has considerably impacted the traditional operations of businesses. It has pushed them into engaging in digital solutions more than ever. The shift from on-site work to remote work has also affected the workers' wellbeing that has become a focus today. But how about the jobs that cannot be done remotely, especially in construction industries and the like? People expect employers to comply with every regulation and method effected to moderate Covid-19. The challenge for many companies today is to provide employees with an apt workplace, whether remote or not.

Digital transformation paves the way to combine technology with a conventional approach to maximise potential during this challenging period. The Covid-19 crisis made operational efficiency the principal indicator of a viable business.

There is a need to identify qualified talent based on verified skill sets and traits that determine success in those roles. And we should take into account the wellbeing of the essential assets of the company, the people. The workforce is the melting pot of innovation and excellence for the company. Empowering them leads to success.

Repple's focus is to instil general safety culture in all work environments. With a platform to showcase verified workers' competence and skills, companies can obtain certainty of the qualifications and documentation of the people they onboard and those already with them. It is a platform that keeps important documents, certificates and licenses digitally, making them shareable anytime, anywhere and on any device. Efficiently increase employee engagement by empowering the workforce through ownership of their documentation.

We at Repple not only give the convenience of managing credentials but also advocate workforce engagement. It is a platform where the workforce can share their experiences and opinions with people in their circle through an interactive app. Through Repple, organisations can monitor incident reports and health passports easily. Company broadcasts and publications can be seen instantly by the users who follow their channel on Repple. We have developed information dissemination and raising awareness on one platform. Therefore, communication between authorities, companies and the workforce will be more user-friendly and more conducive. It is a three-way communication path wherein the authorities, companies, and individuals connect and build Health and Safety reputation.

It is at the front-lines that health and safety are crucial. These individuals are the ones exposed to risk most of the time. This is the reason Repple has developed a platform to address these adversities that have been present even before the pandemic but only being emphasized now.

We are optimistic about the future. We believe we can make things better. That improvement starts with you.

About Pedro Pereira

Pedro Pereira is a digital transformation expert with 20 years of experience in innovation strategy. A senior technology leader from global players including SAP, active start-ups mentor with TechStars and SAP.iO, investor and founder of companies, and ambassador for Singularity University in Dubai. Currently, on a mission with Repple.com to transform work reputation empowering individuals to own and benefit from their proven competency.



Road Safety: Digital innovations can drive change

by **Pankaj Singh**
 Head, Road Safety - India
 at LafargeHolcim Group
 (ACC and Ambuja Cements)

Going by the edition theme 'Digital Safety' let us try and see if Road Safety also can be advanced using available technologies and solutions at an individual and also enterprise level.

Digitization is the Buzzword today, and in India this agenda has got advanced by a few years due to the ongoing pandemic, COVID 19. In every aspect of life, 'touch less' solutions are being designed to ensure we break the chain of infection. This imposed need also generated a lot of enthusiasm in the tech world to innovate new products and solutions to make life easier for all of us.

Road Safety is no different and there has been an accelerated enthusiasm in this space especially for user interface tech solutions to monitor driving behaviour. This is both in the area of telematics for fleet and mobile app solutions for the fleet as well as individual users. We all know what is measured can be improved

and the same concept is applicable here too. From my personal experience, I can vouch for this. I will focus mainly on tech-enabled driving behaviour management in this edition.

Let me first talk about how this can help an individual. I started using one of the many mobile applications available in the market as it was given to me free for trial purpose. Yes, that's correct; we normally do not want to pay for our own safety, so I followed the same practice and started using it free to understand its usage, applicability, accuracy, user-friendliness, etc etc.

I knew very well that it is recording my driving pattern viz acceleration, braking, speed, cornering and also the geographical parameters like location, route, duration, timing, etc. I had initial apprehension as we all will have using any new tool and especially these days as we talk about data privacy in all the forums. But I decided to go ahead and try this out. Obviously, the curiosity of checking how I did led me to check my driving score and parameters after almost every trip. Over some time, I also tried to simulate a few conditions (of course with all safeguards) and found the solution to be really accurate and helped me measure my driving behaviour regularly. I started targeting betterment thereafter and consciously avoided certain things that possible went unnoticed earlier. By sharing this here has a linkage to my earlier article (Dec 2020 edition) where I stressed upon 'what I can do'

I firmly believe that remaining safe on the road is as much my responsibility as it is of the government to ensure safe infrastructure, signalling systems and enforcement agencies to ensure the rules are followed. The goal is impossible to achieve if 'I' do not understand my responsibility and no amount of policemen on the road can change the shameful road safety scenario in India. We will have to look at IoT based tech solutions in the form of telematics, mobile applications or Dashcams to help us become better and SAFER.

Telematics has huge potential to help fleet operators and corporates to measure driving behaviour and support fleet drivers with counselling and required training. This also helps in identifying the training needs to avoid situations that can have negative consequences. Generic training does not help much, and such solutions help with data that is real and individual specific. Many organizations are now creating healthy competition amongst fleet drivers to better by the day through gamification followed by reward and recognition based on driving performance. At the same time, individuals

or even large groups can rely on mobile applications to provide similar data which can be viewed by the individuals to understand the areas that need improvement. The Dashcams have immense potential to provide such information along with visuals. When we get to see what led to a harsh braking event, what was going on inside and outside when the event took place, the improvement is inevitable. We all want to drive safe but lack such tools and technology to tell us how we are driving and what needs to improve.

In today's world, technology is making everything possible then why can't we opt for them for our own safety. Through this short write up, I call upon my friends to give it a thought and try them out. We have to take steps forward and ensure our roads become safer for us and our family members to travel fearlessly.

Remember: 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.



WOMEN IN SAFETY



My experience as the first female fire commander in Kathmandu fire station

by *Suneeta Bhardwaj* - Fire commander, Kathmandu Airport

I always wanted to do new things and I wanted to chase new challenges, since my childhood I wished to work on constraints. I wanted to be seen in the crowd, I always wanted to be heard. I had a willingness to serve people and this passion led me towards my destiny and that was becoming one of the first lady firefighters of Nepal.

I started working as a firefighter in Oct. 2003. Since then I have loved my job like this not only become my earning for a living but also it has quenched the burning fire of my deep passion. I am content to have chosen to serve, I still wonder how I entered this profession, there is one saying that everything happens for the best and this was the best thing that ever happened to me.

As we all know, fire services throughout the globe are predominantly been led by a male

counterpart. It was thought that this job was only for strong men and women were thought to be weak and invading this stereotype, working in male-dominant infrastructure and fitting into the Man-sized gear was a tough job for female firefighters. We were two first lady firefighters working in the aviation sector that time for the first time. Similar way, our country, Nepal was also the first to introduce female fighters in South Asian countries too.

We both were strong ladies who not only have chosen their carrier in a very different sector other ladies do but also we were following our passion which made us happy every time we looked into so in no time we fit into the frame. People started giving examples of us that were making us more confident day by day.

And becoming a firefighter means a lifetime commitment to physical fitness, you always have to get involved in sports, regular activities that will develop your physical endurance and physical strength which will give the confidence in physically demanding situations. We were able to prove ourselves whenever or wherever we were told or instructed or tested to.

After 14 years of starting a job as a firefighter, now I am in the position of Fire commander. In the year 2020, I was deputed as first lady fire commander. It was not only a new responsibility for me but also a new challenge for me to work on a new pandemic scenario.

It was the beginning of the year 2020, the first case of COVID-19 seemed to be spreading throughout the world after it was first seen in Kunming, China.

It has always been fun, adventure, and learning at the same time when I work on operation duty, we were used to 6-hour shifts before the COVID pandemic but after the outbreak of COVID, we all know all the nonessential services were to be shutdown. The Fire services fit into the most essential services globally. We are the aviation firefighters, most of the airlines were cancelling their flights one after another at that time, and Country people were trying to get back to their own country as soon as possible so there was a necessity of rescue and relief flights though there was the tendency of reducing scheduled flights we were providing the same category IX facility of fire fighting at Kathmandu Airport. Since the COVID has seen in Nepal, the lockdown started, people were scared of the new thing that was growing up and spreading rapidly. People in

the country seem to stay at home for their and everyone's health safety issues.

While the world was unknown of the next step or challenge that was going to happen, flights were decreasing and some of the airlines had already cancelled their flights for upcoming months also so we also as the firefighters also held the meeting and came to the decision that what can be done next so that we remain on duty, provide the service with the same facility to the aircraft and to expose ourselves in minimum level with our family members. For this, we decided to work on 24 hours shift and 4 days off with the same manpower to minimize the exposure. But stepping from 6 hours shift to 24 hours shift was not an easy process. Some normal hurdles during our 24 hours shifts were that all the cafeteria at the airport were closed and firefighters themselves had to cook, all the public transportations were closed and firefighters had to provide relief to previous shifts on their own in the early morning at 6 till next morning.

Aviation management was using the minimum manpower in all possible departments but fire service was only the sector where manpower shall not be deducted in regards to the ICAO standards.

Regardless of every constraint, I was engaged in managing the mental and physical health status of co-workers who were working under my shift. We worked at the 24 hours shift and also developed the video that was promoting the safety guidelines regarding the ongoing pandemic.

According to my experience, it is very easy to work as a crew member and follow the instructions rather than working as a commander and give different instructions to various. Commander has respect and honour too. Being a commander is a tough job, you have to look after, manage and make the crew always motivated to work on a team. Fire fighting is always teamwork; one has to be very sensitive to everything that's going on at his/her station.

A fire commander is someone who can lead by example, shares knowledge with everyone who works together, someone who supports the co-workers as this position is not based on the time on the job, he or she should be a good firefighter and a good mentor too who can have the ability to motivate his or her team. A fire commander is a person who wears his/her uniform proudly and represents that organization confidently relies on his/her ability. The firefighters and fire officers must trust the commander and this loyalty breeds trust in the organization which is good for teamwork and the organization itself.

The commander understands the code of ethics and lives on this ethics and exhibits integrity all the time and exemplifies the values of the department.

Now, after a year of working as a fire commander, I am more confident and more enthusiastic about the situation. I have adapted my senses and work ethics; I feel I am now more flexible and accountable. I can see how I have developed and I have naturally evolved and grown up so now I expect more of myself. It also encourages me as I have worked under the most extreme and harsh conditions of an ongoing pandemic. It will surely reflect on my development and I will continue to prepare a better version of myself on every new day.

Suneeta Bhardwaj
Fire commander, Kathmandu Airport

Covid Safety
Awareness Picture



MANAGEMENT SYSTEM CERTIFICATIONS

To obtain a copy of
certification quotation

CONTACT US AT
+65 65651417
INFO@SG.TUVAUSTRIA.COM
WWW.TUV.AT



TUV AUSTRIA SINGAPORE PTE LTD
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BANK OF CHINA BUILDING #25-01
SINGAPORE 049908



WSHE AND TECH

Developing Company Emergency Managers by VR technology

by Bruce Wong - FIIRSM, CMIOSH

Nowadays, virtual reality (VR) is common and widely used in different industries, such as medical, emergency services, and construction. It provides a real experience for the trainees, breaking the limitation of environment and time. For learning purposes, episodic memory enables people to consciously recall experiences within their spatial and temporal environments.

In many countries, practitioners in high-risk industries intend to use VR to train and practice emergency procedures and protocols. Trainees are required to select correct protocols in a simulated incident. If failed to do so, they can experience the severe consequence of an incorrect act, for realizing the importance of correct procedures. For example, the fire will be intensified if the wrong type of fire extinguisher was selected in the simulated fire incident.



Emergency preparedness has gained prominence because rapid and correct response helps to reduce injuries, illnesses, property damage, environmental harm, and public concern in an emergency (Labour Department, 2002). It is also the reason why Emergency preparedness is one of the elements of Safety Management. In Singapore, Company Emergency Response Team (CERT) is to mitigate and control an emergency during the initial stages before emergency services' arrival and also to ensure operational synergy between the CERT and emergency services according to the local legislation (Singapore Government, 2005). To achieve this, a fully competent emergency manager is playing an important role in emergency preparedness.

How to develop the Emergency Managers?

The International Association of Emergency Managers defines an emergency manager is responsible for coordinating the plans of the various components of the emergency management system. But how to develop a fully competent emergency manager? In tradition, we can train a person to become an emergency manager through theory training with excellent field practice.

In general, there are two types of exercise, that is on-site exercise and table-top exercise. On-site exercise is vital, but as well known, "real accidents" are difficult to be simulated. We cannot set a fire explosion in a chemical plant or push a tower crane down on a construction site. Even if we can do it, it still involves huge resources, time, and manpower. Therefore, table-top exercise is an effective opinion. Repeated scenario-based training to ensure the trainees get to experience in a controlled and simulated environment.



The shift from Paper to Virtual View

In conventional table-top exercise, the trainees need to make complex decision making, coordinate with different stakeholders and deploy many resources, based on pictures, pre-recorded videos, or even imaginations. Performance and experience will be greatly reduced. These prepared materials would restrain the exercise controllers to make a flexible response.

In the new century, we can fill the gap with VR technology. Various scenarios that are difficult to duplicate in a real setting can also be simulated, such as a serious fire in a chemical plant, traffic accident on the highway, flooding in a shopping mall... etc, bypass the high costs and dangers associated with on-site training.

There are two types of VR, i.e. Immersive VR and Non-Immersive VR. The former need trainees to use a headset with sensors to experience 360-degree panoramic vision and fully integrate into the simulated environment. The trainees of the latter need to view the images on the screen, it keeps the trainees maintain awareness of the environment outside of VR. They can use a joystick or keyboards for movement.

For the table-top exercise, Non-Immersive VR is commonly used. Let me set an example for an exercise of a fire incident in a chemical plant. A group of trainees can act in different roles, such as company emergency manager, police, and fire services, to view the same simulated virtual environment on the projector screen and interact in exercise and practice the procedures of information exchange, assessment and monitoring as well as activate the contingency plan and dissemination of information. They can “walk” around the scene for observation too! Their decision will affect the result and display in the VR environment immediately. For example, if the participants are not aware that some inflammable substances near the fire ground, the rapid spread of fire will be led.



This is not only used in table-top exercises, but it can also be used in frontline supervisors as well. They are invariably first at the scene of emergencies. Timely intervention within the early stage of an incident is critical. Viewing from another perspective, they are as a temporary emergency manager at the scene. The Immersive VR can simulate incident scenarios for them to learn how to follow the

procedures correctly and handle challenges. For example, railway stat supervisors can get profound experience in VR scenarios by handling different simulated incidents.

We can “Take Two” in Exercise

“Take Two” is a term used in filming. It means a second shot will be taken. We seldom “take two” in exercise, in particular in large-scale exercise. Any failure will not be fixed except when involved in safety issues. You can imagine that we cannot ask a hand of participants to stop immediately, but the limitation can be addressed by the VR technology.

During VR training and exercise, the controller only presses a few buttons, the scenario can be flexibly restarted, paused, repeated, or adjust contents based on the trainees’ executing progress, for enhancing the learning effectiveness.

Breaking Geographic Distance

Also, the training venue is no longer limited to the actual site. VR exercises can be conducted everywhere. The trainees do not need to travel a long way to the designated venue. They just need to bring computers and monitors only.

Most VR systems like the “Response Simulator” allow multi-players to interact in the same scenario, such as the incident commander, first responders, and company emergency manager. The VR controller can monitor and immediately react in the VR environment based on the decisions made by the players. Also, the trainer or umpire can guide if necessary. For a better learning experience, the producer can tailor-made virtual environments and vehicles which are the same as the real world.



VR also plays a greater role during the COVID-19 pandemic as well. We can keep conducting the exercise virtually and remotely in different locations, for tying in with the disease control measures. Several emergency agencies conducted online virtual emergency exercises in recent months.

Conclusion

In a nutshell, exercise is a tool for practice after training. It provides an opportunity for the trainees to apply the knowledge learned from theory training. It is undeniable that VR

technology never replaces physical exercise since it is impossible to simulate everything due to technical constraints. Instead, under a truly immersive virtual environment, it helps us to develop company emergency managers in a short period through comprehensive exercise storylines for preparing any emergencies which occur in our workplace.

Bruce Wong
FIIRSM, CMIOSH



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WSHE AND TECH



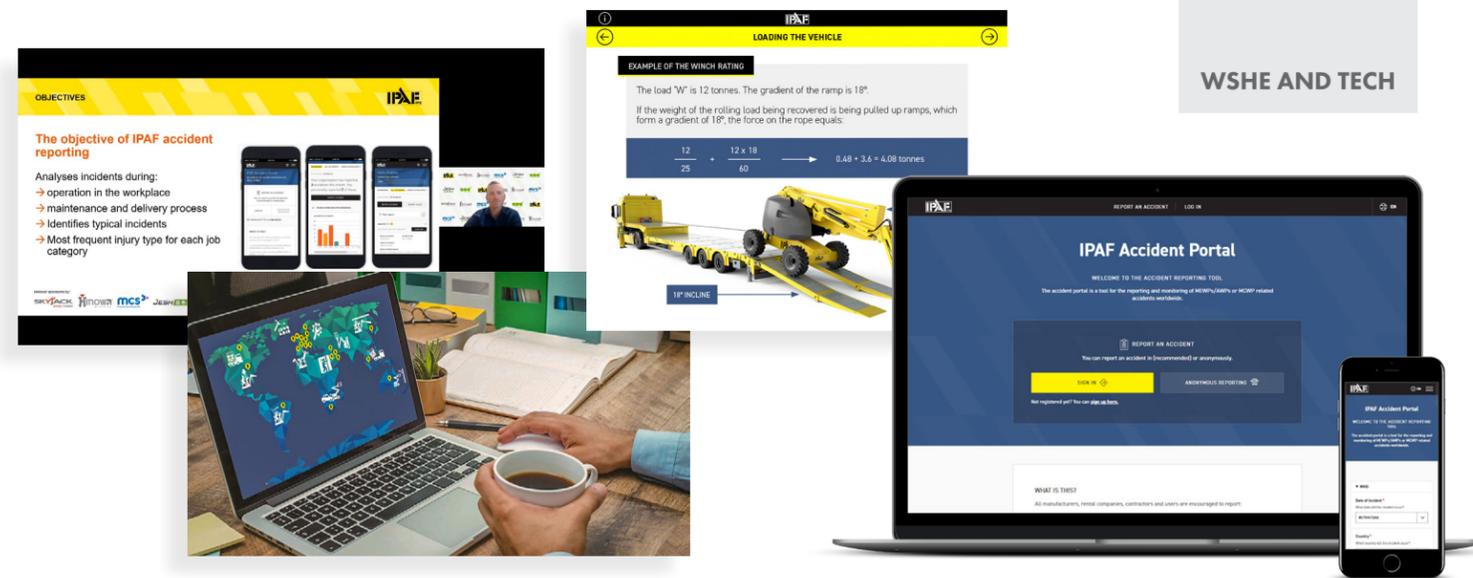
FUTURECAST: Intelligent data, digitisation, smart depots and work sites

by *Brian Parker*

Adopting new technology, intelligent use of data, and embracing digitisation to deliver streamlined depots and worksites are likely to be the hallmarks of the near future of powered access, according to *Brian Parker, Head of Safety and Technical* at the International Powered Access Federation (IPAF).



Brian Parker



WSHE AND TECH

If tracking operators' qualifications, machine time, and even vital signs on a smart-enabled worksite, using geo-fencing and telematics-tracked equipment fleets, running on clean, green power sources to conduct specialist tasks that have been rigorously trained for and rehearsed using virtual reality (VR) simulators sounds like the stuff of science fiction, then it's time for a wake-up call... the future is already here and is inexorably transforming the way our industry works.

IPAF is at the leading edge of this change; during the past 18 months, and despite the challenges and upheavals of the ongoing pandemic, IPAF has delivered on key priorities such as overhauling its global incident reporting portal, producing an industry-focused MEWP safety report, updating more of its training into eLearning and VR environments, and adopting some of the key safety messages learned from **intelligent analysis of accident data** into new or updated courses including a completely revamped Load & Unload Course and a new Site Assessment for Correct MEWP Selection module, due for launch by the end of Q1 2021.

Perhaps the greatest leap forward, however, is the imminent launch of IPAF's new ePAL app for operators and managers, which is predicted to be a "game-changer" for work-site safety and efficiency and marks a stride forward IPAF's drive for greater sector sustainability.

IPAF's ePAL will launch in April. It will be free to use and will feature a digital IPAF PAL Card, operator logbook, and operator safety guides. It will also allow operators to receive the latest IPAF safety information and good practice guidance and will ultimately allow construction managers to quickly and easily verify an operative's qualifications, as well as for the operator to log and share their equipment time digitally and to report accidents or near-misses using the revamped **IPAF reporting portal**.

The ePAL app signals a step forward in IPAF's ongoing drive to boost sustainability, as it shifts away from issuing plastic, credit-card-sized PAL Cards via the post to every training candidate successfully completing or renewing an IPAF operator course.



The app will also phase out paper certification of qualifications and logging of machine time and replace the printed paper version of IPAF's operator safety guide, and overall will speed up the processing time and resource required to issue training candidates with their PAL Card and certification, which at present must be replaced each time a new machine category qualification is added or part of their training is renewed.

In 2020, IPAF passed the landmark of issuing 2 million PAL Cards globally; the digital version of the PAL Card will streamline the process and make it more environmentally sustainable, cutting the use of paper, ink, plastic, packaging, and international shipping.

This wholesale move from a plastic PAL Card to a digital one is a natural evolution. Developing an operator app has been a key priority for IPAF since Peter Douglas took up a post as CEO in 2019, IPAF has teamed up with IPAF member Trackunit to bring its considerable technical expertise to bear to roll the new app out.

IPAF's ePAL will bring benefits for operators and IPAF training centres, while allowing us to streamline and digitise our processes, including issuing and renewing IPAF PAL Cards and helping operators keep track of their machine operating experience via the digital logbook function. The app will also offer an easy way for operators to access the latest relevant safety information and best practice technical guidance from IPAF.

IPAF seeks to be at the forefront in driving change and tries to ensure its members are fully consulted and are as involved as much as possible in shaping the future of these technological advancements.

This was certainly true when IPAF launched a widespread consultation on eXtended Reality (XR), leading to the publication of its

XR Strategy, which became a springboard for ongoing efforts to bring IPAF training into the VR environment, first with IPAF PAL+ advanced operator training and with work ongoing to refresh existing operator qualifications.

VR simulators can also be used to deliver equipment familiarisation and supervised rehearsal of complex maneuvers or even high-risk procedures, working at the limits of what real-life machines can do safely, and exposing operators to at-risk scenarios in a way you would not wish to attempt using real machines.

Accident and the near-miss investigation is one area where there can never be too much data being tracked, but the real key is intelligent to use and analysis of that data and real-world application of the key findings.

IPAF uses this data to inform everything it does, for example updating its training into 360-learning environments, including recent major updates to MEWPs for Managers, MEWP Supervisor training in the US, and the revamped Load & Unload Course unveiled at the end of last year. The key findings also inform IPAF's Andy Access and Toolbox Talks safety materials, and the federation's global safety campaigns.



Of course, the industry as a whole is borne out of innovation, with increasingly sophisticated telematics and geo-fencing systems allowing rental companies and contractors to track fleet movements, control access, and even track both machine and operator health on the job. While not an option during the launch phase, IPAF is working with ePAL app development partner Trackunit to find ways to allow the new digital PAL Card to allow access to equipment for qualified personnel only.

IPAF is also working on a new detailed technical guidance document about the issue of secondary guarding – the various and multiple ways manufacturers are adopting new technology to prevent entrapment or crushing incidents in their machines. Because each manufacturer has a different technological solution, it is important for training and safety bodies in our industry to understand the different systems and ensure technical guidance remains up to date and relevant, and that basic principle of safety good practices are not forgotten about or that sophisticated warning and digital protection systems are neither overridden by the operator or treated as a guaranteed fail-safe.

Wearable technology will also have a part to play as operator safety and health is tracked and monitored throughout the working day – not least in the post-Covid era as operators and end contractors seek to ensure Covid-safety and bio-security on their work sites. Tracking temperature, heart rate, proximity to other operatives and monitoring access to geo-fenced work zones are already features of some advanced sites in action today. IPAF President Norty Turner will present on this very topic during the **2021 IPAF Summit**, presented as a digital event for the first time ever on 18 March.



Norty Turner

It's fair to say that the new normal is here to stay on powered access worksites around the world; the fact that the past year has changed the way we all work, increased our sensitivity to personal responsibility and risk assessment in the workplace, and boosted the uptake of new digital technologies, can only be a good thing.

The future can sometimes seem like a daunting prospect, but in terms of technological innovation and intelligent use of data and digitisation, the future is already here and helping us work smarter and safer than ever before.

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About IPAF

IPAF is a not-for-profit members' organisation that promotes the safe and effective use of powered access equipment worldwide. Members include manufacturers, rental companies, contractors, and users. Details at www.ipaf.org

62, TSB suffered a life-changing sporting accident which turned him paraplegic but, thankfully, not a cabbage. With my brain working overtime to compensate for an immobile body, I convinced myself that he would get back on his feet. My doctors. Every chapter is a story and mind-links to music, movies, TV shows, cars, books, and anything else that caused a blip in his brain. Don't worry, he does also (some of them) in lots of physiotherapy clinics.

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A book for anyone who wants their spirits uplifted...

TSB

CONFESSIONS OF AN EX-HOOKER (AGED 66 AND A HALF) A.K.A. DON'T STOP BELIEVIN'

For most of his fairly long life, TSB had considered himself totally apolitical. He had actually never voted in any election for Labour, Conservative, LibDem, Republican or Democrat – or even for anyone else – including Screaming Lord Sutch of the Monster Raving Loony Party, despite the obvious temptation to do so, on principle. And, although he is British, he currently does not live in the UK. Nor does he live in the USA. It's perhaps that combination of factors – no party or ideological affiliations, plus sitting well outside both countries and not actually affected by the politics of either – which made him an interested observer of what was happening there. And, of the bizarre parallels between the Trumper and BoJo.

It really started off as a reaction to the 2 - 3 years of nothing ever, ever, happening with BREXIT, which was totally boring. Compared to that, the crazy stuff going on in the US was jaw dropping – and continues to be so. All the US late-night talk shows were royally taking the p*ss out of the Trumper every night. But then TSB realised it wasn't just funny – it was also a terrible hit on democracy, law & order, colour, race, religion, the Constitution and everything else. On the other side of the Big Pond, BoJo, being British, was perhaps a little more subtle (but not much!). So, to fool the public, he presents an aura of a jokey, bumbling buffoon, but with a vocabulary straight out of Roget's Thesaurus. The book poses some interesting questions, namely:

- What will melt down first, the polar ice cap or the US economy?
- How much of his own B.S. does the Trumper believe?
- What is the average length of job tenure in the Trumper administration?
- Do Trumper's 'base' really think that he cares even one iota about them?
- Is it now obligatory to have Russian help to win elections in US and UK?
- Does a stable genius have the best words and can no one do it better?
- Why is "Ripoffican" a four-letter word?

TSB a.k.a. TREVOR STOTT-BRIGGS

TSB has really enjoyed the cutting, satirical, political commentary in Private Eye for over 55 years and could not resist the opportunity to mix that with the literary parodies and convoluted, nonsensical logic in Alice in Wonderland as a way to write about the excesses and... of the Trumper and BoJo in recent years.

A Fable-Parable-Fairy Story for our Children's Children and Future Historians...

ALL LIES IN TRUMPERLAND

(BOJO THROUGH THE LOOKING GLASS) A.K.A. BE CAREFUL WHAT YOU WISH FOR!

BY TSB



Confessions and Lies

Books by Trevor Stott-Briggs

Energy & Rugby. Over the last 30 years, I have had an extensive career in the energy sector, most recently being the Managing Director for the Energy Institute in the Middle East. But, outside the office, my major passion was always rugby. Playing since 1976 in Kenya, then for 27 years in Asia, I came to the UAE in 2007 and continued to play rugby for Abu Dhabi Harlequins and then as a founder member of the Arabian Potbellies RFC. I was also a rugby referee and regularly went to the gym, so I was very fit and able to continue playing long after the age that most people retire from the game.

Scrumpled. Unfortunately, at the tender age of 62, while I was playing hooker (a front-row position in rugby, one of a team's four key positions) at the Sharjah 10s, the scrum collapsed and my neck was broken. This significantly messed up the nervous system in my spinal cord, turning me into a quadriplegic but, thankfully, not a cabbage. With my brain working overtime to compensate for an immobile body, I convinced myself that it was

"Mind over Matter" and that I would get back on my feet again despite a less-than-positive prognosis by my doctors.

Recording Progress. Early into my recovery, I decided to write a book about my experiences. The book is now published and covers a span of 5 years, during which I progressed from being paralyzed to being able to walk with crutches. The book's underlying theme is—belief in yourself and your own capacity to recover.

The full title of the book is **TSB – Confessions of an Ex-Hooker (aged 66 and a half) a.k.a. DON'T STOP BELIEVIN'**

Storyline. Every chapter is a new story with all sorts of memory jerkers and mind-links to music, movies, TV shows, cars, books, and anything else that caused a blip in my brain. It has stories about work, my wife, kids, friends, and (almost) everything. I do also – sometimes – talk about what I did every day for 5 years in lots of physiotherapy clinics.

See the Funny Side. It's written in a chatty, pithy, but often self-deprecating style. It's a fast-paced read and I like to put a twist on something that was not very pleasant at the time and look at the funny side of it. But, although on the one hand, I am not afraid to make a joke at my own expense, I will make a spastic-handed jab with my other one at whoever tries to stick a "Disabled" label on me. I am not, repeat NOT, disabled. I am "Temporarily Unable" to do some things. But that has not stopped me from trying.

Second Book. Once I got the writing bug it was hard to stop. **ALL LIES IN TRUMPERLAND (BoJo Through the Looking Glass) a.k.a BE CAREFUL WHAT YOU WISH FOR!** is my second book about the 'fictional' characters of McDonald J. Trumper and Boris Jockstrap. It's a witty, satirical, political

parody written using the theme of Alice in Wonderland by Lewis Carroll. As in the original fairy story, BoJo falls down the rabbit hole into Trumperland and, as he wanders around, meets a lot of the 'Alice' characters - metamorphosed into 'Trumpian' ones.

Reviews. One reviewer described it as "A mad satirical Alice-in-Wonderland fictional romp which gallops along almost as crazily as Donald Trump's bizarre four-year presidency did and will have you chuckling away". Another added wryly: "Sometimes one wonders if the author had a crystal ball."

The books are available on Amazon.com and Barnes & Noble and other good bookseller websites. For more information, contact the author on tsottbriggs@gmail.com

WSHE AND TECH

The shift towards autonomous vehicles

by Dawn Thomson - RoSPA

Road safety issues have been a key focus of RoSPA since our formation in 1916. Whilst our influence now extends to occupational health and safety, leisure safety and home safety-related issues we continue to be at the heart of road safety-related decision-making within the UK and through our members and award winners across the world.

All towards our mission of 'life free from serious accidental injury' which we achieve through 'exchanging life-enhancing skills and knowledge to reduce serious accidental injuries' our *vision is drawn from our respect for life and all that it contains – the freedom to enjoy personal choices, health, happiness, wellbeing, relationships, and a huge variety of life-affirming activities.* We know that we are not alone in our goals, that without others we cannot succeed, and so we collaborate with large numbers of experts, ranging from individuals affected by accidents and their families to multinational corporations.

The focus on the development and introduction of highly autonomous and fully autonomous vehicles on the world's roads has led us to consider the safety-related issues associated with technological advances. The steps towards fully autonomous vehicles are defined by the **Society of Automotive Engineers International** (SAE) and are universally applicable.

Encompassing the spectrum from vehicles with no automation, where a fully qualified driver is required to be alerted at all times, to full autonomy, where a vehicle functions independently without a human driver.

Several automated technology systems are now available on select mainstream vehicles, such as park assist, adaptive cruise control with lane-keeping assist and motorway assist. However, there has so far been relatively little attention given to educating drivers on their choice and use of these semi-autonomous features.

With some vehicles on the market already featuring 'Level 2 partial autonomy', it is essential that drivers understand the technology in their vehicles; what it does, how to use it as safely as possible and the potential risks of misuse. It is vital that drivers understand both the capabilities and limitations of these technologies and do not over-rely on them.

The most basic stage, Level 1, is where one element of driving is supported using sensors and cameras, but the driver is still fully in charge of the vehicle. This includes features such as radar-managed cruise control, lane-keeping assist and autonomous emergency braking (AEB) which have been available for several years.

Level 2 autonomy is where the vehicle is capable of controlling multiple functions such as the accelerator, braking and unlike Level 1, the steering function.

With remote-controlled parking, functions are also possible to park in tight areas without being in the driving seat. In Level 2, the driver continues to remain in control of the vehicle and must always pay attention to the road at all times. Whether driving for work or leisure RoSPA advise drivers to consult the handbook of their vehicle before attempting to operate any of these features and within a workplace context their fleet manager.

Let's take the example of Autonomous Emergency Braking (AEB) systems which usually try to avoid an impact by warning the driver at first, although this does not happen on every vehicle fitted with AEB. If no action is taken

and a collision is anticipated, the system will apply the brakes. However, some systems are better at detecting vulnerable road users, such as pedestrians and cyclists, than others. AEB is not a substitute for effective observations and full concentration whilst driving. Early AEB systems only functioned at low speeds but modern systems can operate up to motorway speeds and can detect pedestrians, cyclists and potential obstacles when reversing.

Some systems can intervene when it is unnecessary, such as when the vehicle is travelling down a steep slope that levels out, so drivers are reminded to remain alert at all times and use the vehicle handbook to find out how to temporarily deactivate the system, or adjust the sensitivity level if required.

Another example of increasingly common automation is the Blind-Spot Assistance System, which warns the driver if a vehicle is approaching their blind-spot. Providing the driver with a visual or audible warning, more advanced systems engage the vehicle brakes or operate the steering where required. This type of semi-autonomous system does not allow the driver to abdicate responsibility and they should always check their blind-spot before changing direction, even if their vehicle is fitted with such technology.

Speed is a significant factor in accidents, Adaptive Cruise Control (ACC) allows vehicles to accelerate and slow down automatically to keep pace with traffic ahead. Some advanced systems use detailed data from the vehicle's satellite navigation to slow down for corners ahead and maintain a set distance from vehicles in front. However, drivers must keep their hands on the steering wheel at all times and be ready to intervene where necessary. Many ACC systems allow the driver to alter the distance between their vehicle and those in front but a safe distance must be always maintained.



The benefits are tangible however whilst the vehicle can keep a set distance from another vehicle in front it will not necessarily detect that traffic is slowing or changing lanes due to a lane closure, further along, the carriageway. In many circumstances, a good driver would be able to observe what is happening much further ahead and deal with the situation well in advance. It is also worth noting that during heavy rain, fog or icy conditions, the driver should ideally keep full control of the vehicle so that they can react to potential hazards ahead.

The technological advancement that has the effect of reducing the number of people killed and seriously injured on the world's roads can only be to the benefit of Society...however the role of the driver remains constant as we make the transition to full automation.



Sharing policy insights and 'what works' is at the heart of RoSPA's role as a thought leader and influencer. We watch with interest the developments arising from collaborative working between the [Land Transport Authority](#), Enterprise Singapore, Standards Development Organisation and Singapore Standards Council and the outcomes from developing 'Provisional National Standards to Guide Development of Fully Autonomous Vehicles'.

Addressing the first/last mile challenges experienced in regional transit across Singapore being investigated by the [Centre of Excellence for Testing & Research of AVs - NTU \(CETRAV\)](#) has global significance. By whole system thinking, they are creating a model that has the potential to be refined to reflect local context culture and industry, which RoSPA can share across our networks.

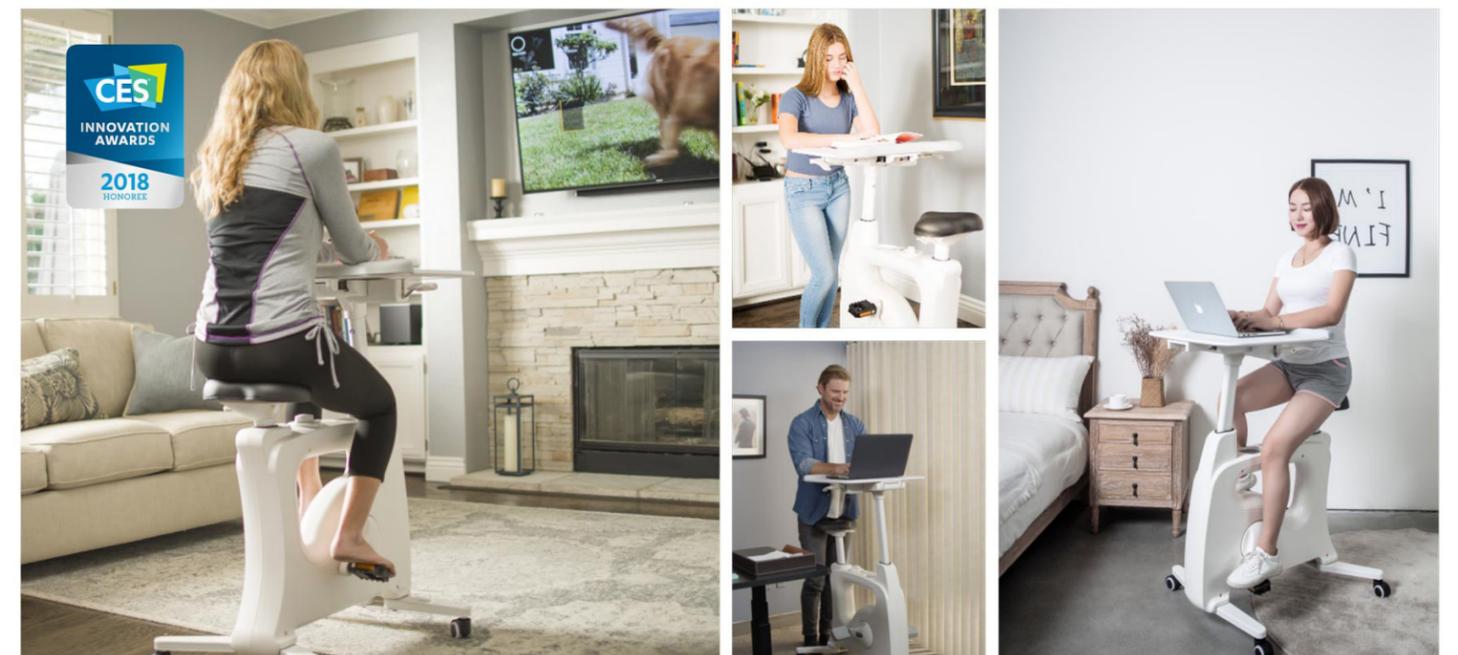
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EPISODE 1



SafeTea First



with **Jason Anker** and **Abbi Taylor**

Hey Safety Professionals, this month's podcast features Abbi Taylor and Jason Anker talking about how a fall from height had changed their lives forever. Jason Anker, Abbi Taylor's father, dropped 10 feet from a ladder 28 years ago. Jason's family has also been affected by the accident. As a motivational speaker, Jason started his own platform, Proud2bSafe, to inspire those who are on a similar path to speak up. With its worldwide presence, the P2BS allows individuals to talk to people all over the globe to share their story.

SafeTea First | Episode 1

Presented by:

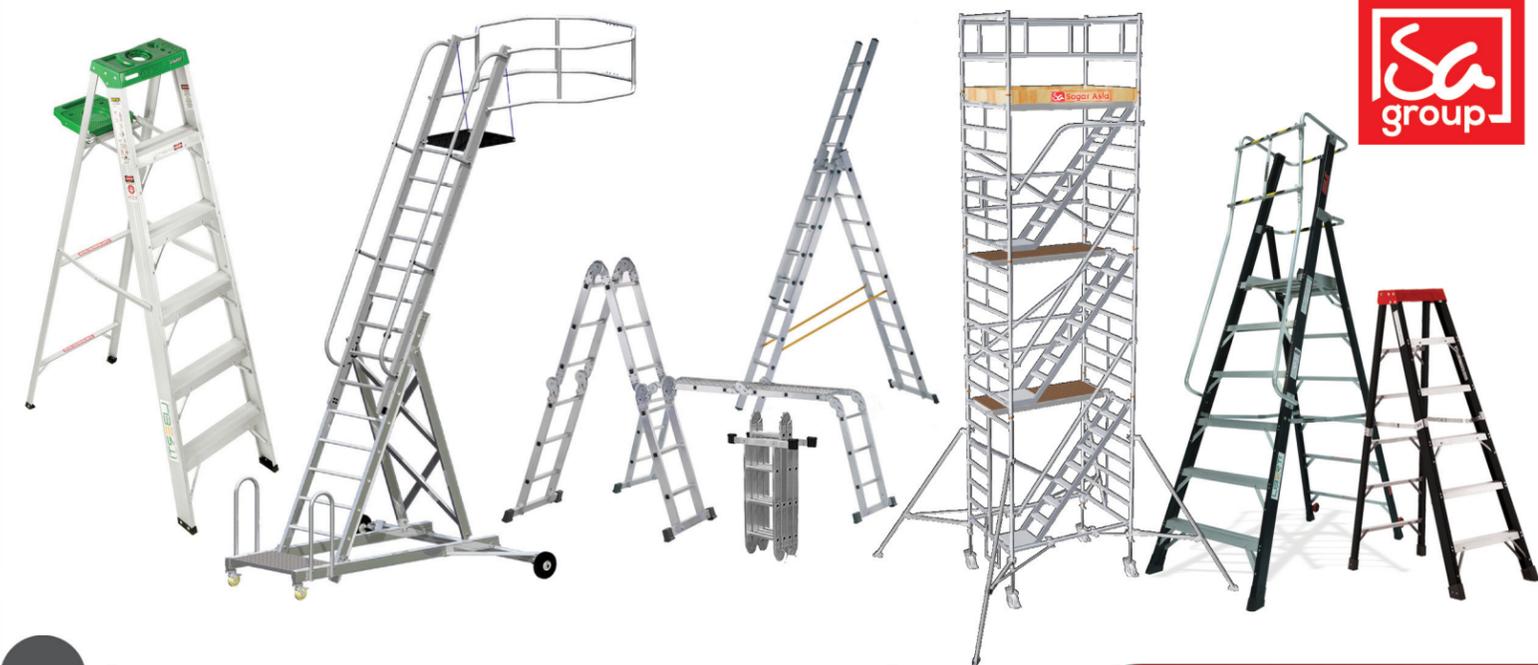


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