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ON THE COVER

Designed and developed as a breathable glove, MaxiFlex® has become the benchmark for precision handling in dry environments.
Now the iconic MaxiFlex® gets even better thanks to the inclusion of the new AD-APT® Technology from ATG®.

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The AD-APT® technology is activated by the movement of our hands and increased temperature within the glove, releasing a natural cooling agent that keeps your hand dry and cooler.

2. **Ventilate**: for a fresher glove experience
The AIRtech® technology used in the construction of the MaxiFlex® coating has a network of structured tunnels guaranteeing optimal air quality and temperature within the glove.

3. **Circulate**: for a productive glove experience
As your hands work they move, forcing air out of the close-fitting MaxiFlex® glove through the patented structured tunnels within the AIRtech® coating. This enables what is called 360° breathability to evacuate moisture to guarantee optimal air quality and temperature within, which is now further enhanced through the inclusion of the new AD-APT® Technology.

AD-APT® — an intelligent way to keep gloved hands dry, cool and productive.
Make the change!
See page 26 for further details on the technology.

ATG Lanka (Pvt) Ltd
www.atg-glovesolutions.com
ROPE ACCESS OR BMUs — WHICH TECHNOLOGY IS SAFER?

Gordon Cadzow, Secretary, Working at Height Association
Recent falls from height on building facade work have been recorded from both rope access applications and from the use of building maintenance units (BMUs). These incidents have again raised discussions on which is the safer of the two technologies.

Let us start by considering who is responsible for safety — both in a new building and in an older, existing building.

The OHS/WHS Act places an obligation on designers of buildings and structures to design a workplace for the facade maintenance workers that is safe and without risk to the workers’ health, so far as is reasonably practicable. This includes managing risks associated with falls and includes requirements for emergency and rescue procedures. However, on older buildings prior to the OHS/WHS Act, there is no designer duty. The persons who exercise management and control of the workers and their workplace on these buildings have similar duties to provide a safe workplace, so far as reasonably practicable.

In other words, the ‘rules’ relating to safety are much the same — regardless of the age of the building.

The building designer or manager must therefore conduct a risk assessment on any work that may be required to be undertaken and give consideration to a number of issues including:

- the life/remaining life of the building;
- the likely frequency of the work to be carried out;
- the risks to which the worker may be exposed; and
- the severity of any resulting injury.

The issue of ‘reasonable practicability’ on the control of risk is usually managed by the application of the Hierarchy of Risk Control where the risks are identified and are then ranked against what would be the highest level of protection and reliability to the lowest.

As far as working at height issues are concerned, the OHS/WHS Regulations list the following preferred order of control (from highest to lowest) for consideration:

- Work on the ground or on a solid platform;
- Use a temporary work platform eg, scaffolding or EWP;
- Use a work positioning system eg, industrial rope access systems;
- Use a fall arrest system; and
- Use a fixed ladder or administrative controls.

The question of cost is often raised, and Safe Work Australia has addressed this in its interpretative guidelines by stating:

“Cheaper, available and suitable options may be used instead of a costlier option that may further minimise the risk or severity of harm, where the cost of the costlier option is grossly disproportionate to the risk.”

Further categorisation of risk control can be defined as ‘active’ and ‘passive’ systems.

In general terms, active systems are operated and controlled by the worker while undertaking the work task — harness-based working at height and rope access applications would be in this category. The passive systems are set up once by the original installer and require no adjustment during the work operation — walkways, guardrails etc would be an example of this category.

Formal definitions cite passive fall prevention as follows:

“[P]assive fall protection device means material or equipment, or a combination of material and equipment, that is designed for the purpose of preventing a fall, and that, after installation, does not require any adjustment, alteration or operation by any person to ensure the integrity of the device to perform its function.”

Confusion then arises when an example of passive fall protection is given as a “temporary work platform” and is further expanded to include “building maintenance equipment, including a building maintenance unit”.

Clearly a BMU is powered equipment — where the operator has control over the movement of the device and can change the position of the workplace.

It is therefore the consideration of the Working at Height Association (WAHA) that both rope access and the use of a BMU...
place both those operations in the work positioning category and removes the BMU from the passive category. It is therefore considered that their respective levels of safety fall into the same category.

Now let us look at the basic operations of the two systems.

**BMU operations**

A BMU is a mechanical/electrically controlled platform that is suspended from structural ‘arms’ down the face of the building. The platform is supported by steel wire ropes connecting — through winches — the structural arm to the platform. The operation of the winches controls the height of the platform — and their simultaneous operation maintains the platform in a horizontal position.

Operators are located in the platform and they control both the horizontal movement along the building and the vertical movement up and down the building facade. Workers may carry their work tools and equipment in the platform with relative safety.

Working from a BMU is a serious working at height issue and the use of full body harnesses and shock absorbing lanyards are mandatory for those in the platform — but what should those workers anchor to?

If the worker anchors to the platform and, if a cable were to fail causing the platform to tilt greatly to one side — or fall to ground — the operator would be left suspended from the crippled platform — or fall to ground within it.

A potential control measure is that the workers remain attached via a fall arrest device to an independent rope, anchored to an engineered or fixed anchoring point directly above the platform. This will ensure that, in the event of a BMU failure, the worker is held at the work position on a separate suspension device, enabling controlled descent to a safe level for rescue. A further recommendation is that all BMU operators and those within temporary swinging stages should wear a chin strap helmet at all times to provide a control measure against worker injury from falls and falling objects; this is often overlooked and is another strong recommendation from WAHA.

The BMU structural anchorages, suspension ropes and winch systems require regular inspection and servicing and certification.

BMU operations do not require that the worker is trained in safe work at heights, however WAHA — and the industry in general — recommends that all those required to work at height have formal training and certification in that category.

**Rope access systems**

The rope access system works on the basis that two independent rope lines are attached to independent anchor points directly above the work area on the roof of the building. The worker attaches to both rope systems, with one rope designated as the ‘primary rope’ and the other as the ‘secondary rope’.

The primary rope takes the suspended weight of the technician, who can adjust his vertical and horizontal position by using standard rope access manoeuvres and rigging configurations to suit the work being undertaken. Significant horizontal adjustment may require the relocation of the ropes onto new anchors vertically above the new work area.

In rope access operations, tools and equipment have to be carried in attached ‘pod bags’ — with pull closure systems so that the contents don’t fall out if the bag becomes inverted. Individual lightweight tools are normally tethered to the operator or the pod bag to prevent them falling to ground. Heavier tools must be attached to a further independent rigging line.

In the event of some sort of failure on the primary rope, the operator remains securely attached to the secondary rope and can descend safely to an exit level.

Rope access systems require regular inspection, testing and recertification, and only competent inspection companies should conduct this critical task. Records must be maintained and kept on-site at all times for inspection and review.

With rope access operations, the operator is highly skilled and qualified in rope access techniques and adapts to the work task at hand.

In summary, both systems are at the same level within the hierarchy of control — work positioning, both have the requirement for regular inspection and certification and both have a high dependency on operator competence.

However, the practical difference between the two systems relates to installation and maintenance costs. A rope access system will:

- significantly reduce installation costs;
- reduce building structural requirements;
- provide the potential for multiple simultaneous operators and reduced clean time;
- eliminate BMU maintenance costs; and
- allow for quick set-up and pack-up times.

One practical limitation of rope access is the height of the building. There appears to be some consensus that where the building height is greater than 50 storeys, the practicalities begin to favour the use of a BMU.

The two technologies will therefore continue to work in harmony in this market, offering similar levels of safety.

Both methods involve work at height methods that are considered to be well down the Hierarchy of Control. Accordingly, they should attract and be able to demonstrate the most stringent control measures — both equipment and operators.

While BMUs may appear to offer increased safety, the reality is that rope access has a far lower incident rate and operates under a much higher level of safety management systems.

Regardless of the system in use, work continues on a daily basis to ensure the safety of workers required to operate at height.

**Working at Height Association (WAHA)**

www.waha.org.au

Footnote: Rope access work requires a very thorough hazard and risk evaluation, increased worker competency and re-training, and dedicated supervision levels. The rope access industry is regulated by WHS and two major industry groups — IRATA and ARAA — Australia wide. These industry groups support the regulator by advocating best practice standards that far exceed the requirements of local legislation.
Finally, a safety harness that won’t weigh you down.

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**LED emergency beacon**

Narva has expanded its beacon/strobe product family with the Eurotech L.E.D ‘Class 2’ range of emergency lighting, which provides strong light output performance and include LED optical technology. The beacons are suitable for light commercial and materials handling applications.

The range comes with an amber strobe light offering an output of 4500 cd-s/m, and features a simulated rotator function allowing the strobe to operate like a rotating beacon. Operators can select from six distinct flash patterns for greater versatility.

The emergency lights also contain a strong polycarbonate lens cover and are designed with European styling, including an orange base that comes in either a flange, magnetic or flexible pipe mount. Other benefits include: a fully sealed construction to IP65; vibration resistant technology; 12/24 V variants; and solid-state circuitry. All units are also reverse polarity protected and backed by a 5-year LED warranty.

**Brown & Watson International**

www.narva.com.au

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**Glass lifter**

The Oktopus from Wirth is a dual-vacuum industrial lifter designed to reduce safety hazards when installing heavy glass panels on buildings.

Until recently, 12 V vacuum lifters with single pumps were used to carry and place glass panels that can weigh hundreds of kilograms into window frames, relying on that one vacuum not to fail during the lift. The dual-vacuum glass lifter, however, features two independent vacuum circuits, ensuring a safety backup if one was ever to fail.

The compact product, which is available in a range of models that can carry loads weighing between 300 and 1000 kg, comes equipped with a crane arm for manual turning by 360° and an audio-visual low-vacuum alert. It is powered by a rechargeable, high-capacity battery system.

**Kennards Lift & Shift**

www.liftandshift.com.au

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**Mechanic’s glove**

The Komodo Mechanic’s Glove from The Glove Company is specifically designed for mechanics to offer durability, comfort, dexterity, and fingertip sensitivity.

With a textured ‘Sandy Grip’ for non-slip use on wet and greasy surfaces, the glove features a chemical-resistant nitrile coating and is also double dipped, which means it is unaffected by oil, fuel and battery acid. The fabrics used on the inside and on the back of the hand also allow for breathability, overall comfort and ease of hand movement.

The product comes with an extended cuff for greater protection as well as a Cut 1 rating, and is suitable for extended all-day wear. The glove comes in black and grey, and is also washable and re-usable.

**The Glove Company Pty Ltd**

www.theglovecompany.com.au
In 2015 RISsafety were contracted by Sarah Constructions (Principal Contractor) to provide a design and construction feasibility for the Commonwealth Bank RoofClimb. RISsafety has previous experience in design and construction and commissioning of the Skypoint Climb on the iconic Q1 building on the Gold Coast for Ardent Leisure Group. This provided the operator Adelaide Oval Stadium Management Authority (AOSMA) with the confidence that the design and implementation by RISsafety would be sympathetic to the iconic heritage of the site and work seamlessly with the existing facility’s operations.

The RISsafety design and engineering team worked with all parties to develop an architecturally approved adventure RoofClimb over the beautiful and unique stadium roofs on the Western & Riverbank Stands. The intricacies and aesthetic impact on the stadium was the main focus of all involved to ensure the modern and heritage design of the stadium was not affected.

The RISsafety Safe Rail System was the product nominated by the client that would best suit the aesthetic, safety and use ability for the operators and patrons. The Western Stand consisting of 5 curved shell Kalzip roofs meant the new infrastructure design and construction could not penetrate the roof and all fixings to the structure were required to be clamp fittings, whilst the Modern Riverbank Stand gantry systems were more conducive with the existing steel structure to providing connection for the system components.

In late 2015 RISsafety were officially appointed the Design and Construct for the Commonwealth Bank RoofClimb at Adelaide Oval with the building to commence in January 2016. With completion of the project due for early April 2016, it was a very tight 14-week construction timeframe which included the training of all climb leaders for the RoofClimb with no interruptions or work allowed during the ongoing day-to-day operations of Adelaide Oval consisting of State and Big Bash Cricket, Soccer, Football and other corporate events.

The RISsafety Project Management & Installation Team worked around the clock to ensure a safe, professional and quality project was delivered to the client. Along with the Design and Construction of the RoofClimb, RISsafety also designed and manufactured the harness and lanyard equipment for the project and provided a comprehensive operation and training package on the complete safe system usage, working at heights training, operation of the climb with photography, information delivery to ensure that the Commonwealth Bank RoofClimb at Adelaide Oval is a very safe and thrilling adventure experience.

RISsafety has demonstrated yet again our capabilities within our National and State team to be able to produce a high quality design, manufacture and construct project that our client is completely satisfied with within the timeframe and with no lost time injuries or safety issues, with no impact on the day-to-day operations of the entire facility.

Should you require any height safety or height access solutions including this type of specialised fabrication, contact your local RISsafety office or go to our website at – RISsafety.com
Protection from aggressive vegetation

The number of injuries caused by hand-operated pruning tools has prompted Botanic Gardens & Centennial Parklands in Sydney to review its hand protection program for its horticultural and landscape workers. Everyday tasks carried out by horticulturalists can present hand protection challenges including cutting limbs, branches and dead vegetation, which involves considerable handling of material and offcuts, as well as picking up and loading material for disposal into trailers or bins. The horticulturalists at the organisation had been using leather riggers’ gloves, which failed to provide appropriate cut protection, particularly when the gloves became wet and soft as a result of handling moist foliage. Some workers had also been removing their leather gloves for tasks such as weeding due to lack of tactility.

“Our horticulturalists work with a variety of sharp hand tools which they use for pruning trees and shrubs. These tools, which include knives, saws, very sharp pruning saws and secateurs are designed to cut through very tough and resilient vegetation,” said Simon Callaghan, stores officer for the organisation.

“Unless hands are adequately protected, deep and serious cut injuries may be inflicted if tools should slip while in use.”

Hunt for hardy hand protection

Callaghan said the organisation was looking for a glove that would protect against a range of hazards and opted for several styles from Ansell.

“While cut protection is the prime requirement, we were also looking for gloves that would allow horticulturalists to undertake weeding activities that required a high level of feel and dexterity and allowed free movement of hand and finger muscles,” he said.

“Some weeds such as Small-Leaf Spiderwort produce toxic sap when cut and may cause skin irritation to workers who have sensitive skin. Although not a prime requirement, it was considered a bonus if gloves possessed a robust protective coating that would minimise sap contact with skin.”

Landscapers responsible for construction and repairs to sandstone rockery and retaining walls also needed a glove that would prevent injury from scrapes and knocks.

Callaghan said different types of gloves were trialled over one month and feedback through a staff survey indicated the Ansell HyFlex 11-840 glove was the preferred general-purpose glove for protection, comfort and dexterity.

“We noticed a definite increase in work efficiency of people wearing these gloves and we also observed that our staff tended to leave these gloves on longer,” said Callaghan.

“For situations more prone to injury from sharp foliage, we agreed that the Ansell HyFlex 11-630 glove and a style 11-638 variant helped our work by extending the cuff to provide better forearm protection when our people are reaching in and about branches and foliage.”

Since implementing the Ansell gloves, the organisation said it has almost eliminated the occurrence of hand cut injuries.

Ansell
www.ansell.com.au

High-density I/O modules

Red Lion has launched the E3 I/O module platform, a high-density I/O system with hardened metal enclosures and powerful communication options for industrial applications.

Available in DIN-rail and panel-mount form factors, the modules support wide environmental tolerances (-40 to 75°C operating temperature). High shock and vibration ratings coupled with industry certifications that include UL Class I, Division 2 listing, ATEX and IECEx approvals also ensure each module is safe for use with industrial control equipment in hazardous locations. Designed to withstand the critical demands of localised and distributed I/O applications, the system features robust networking capabilities with redundant Ethernet ports and built-in serial communication. With one RS485 terminal block and dual Ethernet ports that include user-selectable Ethernet modes for ring, pass through and two network, the easy-to-deploy modules can eliminate the need for additional switching devices. These modules also offer up to 34 mixed I/O points including input/output, analog/discrete and temperature I/O for complex industrial applications. The platform is also configurable using Crimson 3.0 software.

Control Logic Pty Ltd
www.control-logic.com.au

Sustainable gas detection service

BOC has launched a DETECTAGAS cylinder offer to support the safe detection of toxins and flammable or explosive atmospheres in confined workplaces. Instead of discarding disposable cylinders after use, the company has introduced a more sustainable service for customers, meaning every disposable DETECTAGAS cylinder issued will now have a prepaid delivery label that allows the customer to return empty disposables for re-use. Eight common mixtures and other mixture components for bump testing and calibration — in cylinder sizes ranging from 34 to 100 L — are available. The mixtures also now include in-house testing of hydrogen sulfide for guaranteed stability.

BOC Limited
www.boc.com.au
How one piece of software can help you grow your safety consulting business

Keep It Simple Safety is an occupational health and safety consulting business that works with smaller tradespeople businesses up and down the east coast of Australia. Owner Shayne Connolly recently made the decision to move away from paper-based safety and adopt the Donesafe Safety Management software. This one change has allowed him to completely overhaul his entire business model.

Donesafe is jargon-free WHS management software that helps businesses and safety consultants manage their business safely from any device. Shayne Connolly had been looking at the various different options for years until he found Donesafe.

“There was no product that really did exactly what I needed it to. It wasn’t until I found Donesafe that I had a platform that I could deliver cost-effectively and efficiently. There were other platforms, but they were big or costly or clunky. Platforms like this have to be very simple and easy to use... If you can use Facebook, you can use Donesafe.”

One of the issues Connolly faced was that due to the limitations of paper-based management, it was very difficult to manage large numbers of clients at once.

“I actually adjusted my business model for it. Previously, it was only a small number of clients I could service properly on a regular basis with paper-based systems because I couldn’t manage their needs easily. Whereas [with Donesafe], I actually haven’t reached my cap so I don’t know what my maximum amount of work I can handle is.”

Perhaps one of the biggest changes was simply offering a more full-time, well-rounded service.

“With paper-based systems you just don’t know on day to day whether your client is being compliant. Often you’ll actually need to go out and physically inspect the premises to know. With Donesafe though, I can see at any time.”

For his clients, Connolly has seen huge improvements.

“The fact that the product can be scaled from corporate level to as little as a three-man operation without any real loss of function is almost unheard of. I’d looked at other platforms and unless you paid big dollars you don’t get any of the really substantial features. You just get a glorified document management platform, whereas Donesafe gives you more than what most companies need.”

Since implementing the Donesafe platform, Connolly has completely changed the business model of Keep it Simple Safety.

“[I used to be] a normal consultant, where you sign up a customer, complete an initial service with them and then they go on the backburner... then you have to go find your next customer. I was always relying on getting new sales. I [now] have a healthy monthly income thanks to Donesafe and how I’ve bundled it with my own packages. It’s really changed my business; I have big plans — put it that way.”

The end result of adopting the Donesafe safety management platform is that Shayne Connolly has been able to expand Keep It Simple Safety well beyond his pre-Donesafe maximum capacity. By gaining a bird’s-eye view of his clients’ safety, he can now offer not only a service that is worth a monthly subscription, but a service that clients want to pay monthly for.

“I used to work on a client-by-client basis. I’d sign a client, spend maybe the next three weeks working solidly on that. Now I manage ongoing something like 20+ clients competently at any given time and I’m constantly in contact with them. I do that quite easily now thanks to Donesafe.”

For details about becoming a Donesafe partner, visit www.donesafe.com/partners/.

Donesafe Pty Ltd
www.donesafe.com

www.SafetySolutions.net.au
NEW PRODUCTS

Fall protection harness
Capital Safety has added the DBI-SALA ExoFit STRATA harness to its line of fall protection solutions.

The company claims the harness is the first full body safety harness designed and tested with data-driven, third-party research, made possible through a partnership with ergonomics specialists from the Sweere Center for Clinical Biomechanics and Applied Ergonomics at Northwestern Health Sciences University. The research, which looked at key worker complaints while wearing a harness, such as the load on the back and shoulders, limited range of motion and increased body temperature, resulted in the development of a harness that is comfortable, cool and light to wear.

The harness features a LIFTech Load Distribution System, which takes the weight off a worker’s shoulders and redistributes it down to the hips, reducing forces on the shoulders up to 85%. PolarMesh padding also keeps users’ backs cooler with greater airflow.

Revolver Vertical Torso Adjusters and Duo-Lock Quick Connect Buckles offer added security and help workers adjust their harness to a suitable fit. An EZ-Link Quick SRL Adapter also allows workers to attach their personal self-retracting lifeline (SRL), such as the DBI-SALA Nano-Lok SRL, reducing the time it takes to connect and disconnect by up to 80%. Tech-Lite aluminium D-rings also provide increased security and reliability without adding significant weight to the harness.

Capital Safety, a 3M company
www.capitalsafety.com.au

Online safety survey
DuPont Sustainable Solutions has launched an Online Safety Perception Survey providing organisations with indicators to help identify areas of concern and prevent incidents before they occur.

Building on the traditional DuPont Safety Perception Survey, the product allows users to analyse and better understand the safety culture of their organisation. Users can compare their results to industry benchmarks to develop insights and apply predictive analytics for future performance improvements.

The survey can also be configured with customised demographic questions to fit their organisation. The results will also show alignment of the organisation in response to each question, and are also plotted on the DuPont Bradley Curve to provide a more strategic perspective of safety culture.

DuPont (Aust) Limited
www.dupont.com.au

Wirelessly monitored storage tank safety valves
Emerson Process Management has introduced the Enardo 850/950 series of wirelessly monitored pressure vacuum relief valves (PVRVs). These devices provide safety and emissions control by managing the pressure in storage tanks in the oil and gas, chemical, petrochemical and pharmaceutical industries.

The pressure in storage tanks can fluctuate due to changes in temperature, liquid levels or both. A PVRV opens and closes in response to these pressure fluctuations to ensure that safe pressure levels are maintained. Since these PVRVs are located on the top of storage tanks, they can be difficult to monitor; however, the wireless solution enables immediate response to prevent problems related to safety, emissions and the quality of a tank’s content.

The company said PVRVs have largely remained unmonitored, with no feedback loops commonly seen in other pressure control devices. As the tank’s primary pressure control device, the wirelessly monitored solution can provide immediate information to help prevent safety and emissions issues.

Emerson Process Management Aust P/L
www.emersonprocess.com.au
IMPROVE COMFORT AND INCREASE PRODUCTIVITY WITH BIG ASS SOLUTIONS®

Case in Point: BlueScope Buildings

BlueScope Buildings is the world’s leading supplier of pre-engineered metal buildings, with locations on four continents. In summer, workers coped with stifling conditions, and wall fans provided little relief. The oppressive atmosphere was further compounded by outdated metal halide lights in other parts of the facility that barely kept the bays lit and when they did work, generated even more heat.

Big Ass Solutions® was brought in to relieve the stagnant air and solved the lighting problem, too. Operating under a tight schedule, they installed four 5.5m Powerfoil®X2.0 fans to better circulate the air. Plant Manager David Volk also ordered Big Ass Light™ LED fixtures for three bays at the site. The lights were in place and custom programmed within weeks. Now workers are more comfortable because of the silent fans, the new LEDs are drawing rave reviews from employees and visitors, and Volk is seeing a significant decrease in his lighting bills.
Rechargeable LED headlamp

Pelican Products has introduced the Pelican 2780R LED headlamp, powered by a lightweight, rechargeable lithium-ion battery.

The headlamp is equipped with an LED that can shine light of three modes, including: High (558 lm/2 h); Medium (213 lm/3 h); and Low (95 lm/7.5 h). It comes with an IPX 4 water-resistance rating and a safety flashing mode, as well as a downcast mode, ensuring it is suitable for a variety of applications and close-quarter environments. The main LED and downcast LEDs can also be used simultaneously for expanded visibility.

The headlamp is constructed of water/weather-resistant polymer, includes three interchangeable face plates (black, white and photoluminescent) and pivots 70° to direct the light where it is needed. Weighing 207 g with battery, it comes with a cloth strap (comfortable for bare heads), micro-USB charger cord with internal charging port and a full-time battery level indicator.

Pelican Products Australia Pty Ltd
www.pelicanaustralia.com

Compliance management system

The DataStation Report Auditor system is used to audit, risk assess and capture information using controlled, customised templates.

Captured data can be formatted dynamically using custom transformation to produce reports and documents which hold a standard format suitable for user requirements.

The system is able to: save and analyse data; capture non-conformances during the audit process; capture and assign actions to colleagues and contractors; perform audits using dynamic templates and questions; automatically score the user’s results; audit against previous inspections and existing open actions; capture photos of findings; publish reports to PDF; perform audits online or offline (no internet connection is required); control users’ information centrally via the DataStation portal.

The latest generation of Report Generator tools (version 3) can provide offline and online data capture. Data can be seamlessly synchronised between an on-the-road assessor and DataStation, enabling instant delivery of reports to clients.

Because the captured report data is saved in the DataStation database, comparisons between reports and properties are possible, providing high-level compliance reports. Compliance measurements can be made against individual inputs within the report or for the report as a whole.

Report Generator is offered as a module of DataStation and/or as a standalone application for iOS and Android devices.

Data Station Pty Ltd
www.datastation.com.au
WELDING RESPIRATORS: there is no better choice.

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— Single or twin hose
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— Use with most welding shields
— Easy breathing
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BUY A PRODUCT—GET A SYSTEM
Although not often considered as serious as other workplace hazards, slips, trips and falls by workers potentially expose employers to significant liability from both a civil and work health and safety (WHS) perspective.

It is likely that a court will take a very practical approach to determining whether there were any steps that an employer could have taken to avoid the risk of slipping or falling — the relevant question in both the civil and work health and safety jurisdictions.

In determining whether an employer is liable for a slip, trip or fall, a court will consider whether the employer failed to provide a safe system of work, as well as the cost and nature of any steps that could have been taken by the employer to reduce the risk of injury to the employee.

Statistics indicate that the prevalence of slips, trips and falls in Australian workplaces is very high when compared to other causes of workplace injury. For example, WorkSafe Victoria has noted that slips, trips and falls result in thousands of injuries every year, with the most common injuries being musculoskeletal injuries, cuts, bruises, fractures and dislocations.

The most recent data compiled by WorkSafe Victoria indicates that in the 2009/2010 year more than 3100 Victorian workers suffered serious injuries as a result of a slip, trip or fall in the workplace. While Safe Work Australia concluded that during this period “falls on the same level” were the third most common way for workers to be injured at work, accounting for approximately 11% of all male workplace injuries and 17% of all female workplace injuries, the real figures are likely to be even higher given the prevalence of underreporting in non-industrial workplaces, such as offices.

**Duty of care**

The duty of care owed by an employer to its employees was stated in the High Court case of Czatyanko v Edith Cowan University [2005] HCA 14 (at [12]):

> An employer owes a non-delegable duty of care to its employees to take reasonable care to avoid exposing them to unnecessary risks of injury. If there is a real risk of injury to an employee in the performance of a task in a workplace, the employer must take reasonable care to avoid the risk by devising a method of operation for the performance of the task that eliminates the risk, or by the provision of adequate safeguards. The employer must take into account the possibility of thoughtlessness, or inadvertence, or carelessness, particularly in the case of repetitive work.

The primary duty contained in WHS legislation for obligations arising out of slips, trips and falls applies with similar effect.
reasonably practicable is defined in the WHS legislation to mean that which is, or was at a particular time, reasonably able to be done to ensure health and safety in the circumstances, taking into account and weighing up all relevant matters, including:

- the likelihood of the hazard or risk occurring;
- the degree of harm that might result from the hazard or the risk;
- what the person concerned knows, or ought reasonably to know, about the hazard or the risk and ways of eliminating or minimising the risk;
- the availability and suitability of ways to eliminate or minimise the risk; and
- after assessing above, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.

In determining what is reasonably practicable to address hazards and risks associated with slips, trips and falls, employers are required to ask themselves the following question — what would a reasonable employer placed in the same circumstances or situation as me do to reduce the hazards and risks associated with slips, trips and falls?

Complying with the duty will therefore require employers to manage the WHS risks associated with slips and trips by eliminating the risk, so far as is reasonably practicable, and if elimination is not reasonably practicable, minimising the risk so far as is reasonably practicable.

In general, this will involve the same practical steps outlined below for minimising the risk of successful civil claims. That is, by developing and implementing a systematic approach to:

- identifying hazards;
- assessing the risks associated with those hazards;
- implementing and maintaining risk control measures; and
- regularly reviewing the appropriateness of risk control measures.

A breach of the primary duty in work health and safety legislation exposes an employer to penalties of up to $3 million per offence in the most serious cases.

What do the courts say?

Although WHS prosecutions for slips and trips are rare, the following civil cases provide useful examples of how a court will approach these matters.

Cross v Moreton Bay Regional Council [2013] QSC 215 is a leading example of where the employer was ultimately found liable due to the Court’s determination that a simple, cost-effective step would have prevented the accident.

The plaintiff was a ganger in charge of a truck, which he and his offisder used to carry out maintenance work for the Council. A rudimentary step had been constructed to facilitate access to the tray. The plaintiff hurt his back when he slipped while getting off the tray of the truck by using the step at the front, on the passenger side. The plaintiff alleged that the rudimentary step...
was unsafe or defective because three points of contact could not be maintained and a dedicated hand hold was not provided. He also alleged that the step was not big enough to accommodate two feet. The tray and step manufacturer was not found liable as the step was of typical or normal application and design.

The Court found the employer failed to do something that it could have easily done without great cost or modification of the rudimentary step, that is, installing a high grip contact or non-slip surface on the step, which would have decreased the risk of the plaintiff’s foot slipping off the step. On this basis, the plaintiff was found to have shown the employer failed to take reasonable care to avoid the risk of injury.

In Rosenberger v Meanderham Pty Ltd [1995] QSC 261, an employer was found liable when a kitchen hand slipped and fell on wet tiles while in the kitchen near a dishwasher. It was found that the tendency for water to accumulate on the cold room floor and water leaking from the dishwasher both could have been remedied. It was noted in evidence that slip-reducing gritty compounds could have been distributed upon the floors to eliminate or reduce the danger.

In Jones v Molking Holdings Pty Ltd [2010] QSC 134, the plaintiff fell while carrying plates and a tray when her feet went out from under her. The plaintiff alleged that the floor was wet and was generally slippery, and gave evidence of a number of practices in the kitchen that resulted in oil and fat spilling onto the floor. It was accepted that there was a lack of instruction in safe work practices. In the past, mats had been used to reduce the risk of slipping and falling but they had not been replaced, and treating the floor had been thought too expensive. The Court concluded that it was difficult to think that no practical arrangement could have been made that would have avoided the oil spill, and the employer was found to be negligent.

**How should you respond to the risks?**

Slips, trips and falls in the workplace represent a challenge for employers, as they can occur both during and separate to the performance of work tasks, and in a range of situations and weather conditions. Often, the employer is also the occupier of the premises and can be held vicariously liable for the actions of other employees who may cause or leave spills that cause a co-worker to slip or fall.

Tips to respond to the risk posed by slips, trips and falls, include:

- conducting risk assessments for all aspects of the employees’ work duties and their surrounds;
- ensuring appropriate access to and egress from work sites, equipment and vehicles;
- giving consideration as to whether stairs, ladders, lighting and floor surfaces are safe and comply with Australian Standards;
- providing training where appropriate; and
- ensuring that procedures are in place for regular cleaning and inspection of at risk areas, including kitchens and bathrooms or areas where spills are likely to occur.

Employers should also consider if any simple, cost-effective methods can be used to mitigate any identified risk to their employees.

[1] Safe Work Australia publication ‘Australian Work-Related Injury Experience By Sex And Age’.

*Yvette McLaughlin is a partner in the Insurance Group and Sam Jackson is a senior associate in the Workplace Group at Sparke Helmore Lawyers.*
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Safety app proves popular security choice at UQ

Thousands of staff and students at the University of Queensland (UQ) are taking safety into their own hands by opting to download the safety app SafeZone onto their smartphones, connecting them to 24/7 campus security or emergency services response.

Since its launch on 16 February, over 4400 people have downloaded the free SafeZone app, developed by Critical Arc and adapted for the needs of the university, which can be used to call for on-campus first aid or in the event of an emergency.

Provided the user has mobile phone or Wi-Fi coverage, the app also allows users to receive alerts about any safety issues on campus, and is hoped will improve emergency response and communication during critical incidents, such as lockdowns and natural disasters by sending push notifications to mobile devices.

The app can send over 1000 messages per second and will still be delivered even if users have the app or their phone switched off.

"Through GPS, the app allows security staff to become aware of someone’s location, talk to them directly and arrange immediate assistance," said Alan Egan, property and facilities director at UQ.

So far, the app has already responded to a call for first aid from a user after a bee sting incident. The university said the app allowed the situation to be dealt with swiftly, with the patient being treated at the campus health service.

SafeZone uses location-based tracking, but it does not track a user’s location until an emergency alarm is activated or a call is made for help or first aid.

"When the user is within one of the defined areas, the campus security team will respond to the alarm or call," said Egan.

If the app is activated at sites without 24/7 security or outside defined areas, it will connect users directly with emergency services by dialling “000”. UQ said the app will complement existing security infrastructure, including 788 security cameras, 72 emergency call points, night escorts and 24-hour security patrols across its campuses.

SafeZone has also been taken up at other Australian universities such as the University of South Australia, RMIT, Curtin University and the University of Wollongong.

Safety laser scanner

The SICK microScan3 is the latest generation of safety laser scanners. Using safeHDDM scanning technology, the range satisfies stringent international safety standards and is designed to provide protection for hazardous areas, access points and hazardous points.

safeHDDM combines a compact design and large scanning range in one device. It can scan 275° and the protective field has a scanning range of 5.5 m. Even a dark object with just 1.8% remission, eg, black clothing, can be detected. With safeHDDM, microScan3 is claimed to be more reliable than standard measurement methods in ambient light, dirt and dust.

The scanner has a wide range of applications: it protects hazardous areas at loading and unloading stations, multisided access points to machines and material gates, machines in harsh environments and hazardous points with an object resolution of up to 30 mm. It also ensures presence detection to prevent machines from being restarted inadvertently.

The safety laser scanner is adaptable and attuned to different ambient conditions. Protecting hazardous areas therefore doesn’t require any changes to work processes. The sensor is easy to commission, with no need for special preparatory work when installing it in the system. Due to the use of smart connection technology and standardised M12 plug connectors, the cabling is simple and saves on connection costs.

SICK Pty Ltd
www.sick.com.au
The new AZM400 from Schmersal sets a new benchmark in solenoid locking machine safety interlocks, thanks in part to a market leading locking force of 10,000N. It’s perfect for very heavy or even motor driven doors and guards.

It’s extremely safe thanks to the integration of Schmersal’s RFID technology and a bi-stable motor driven locking pin, which retains its last locking status in the event of a power outage.

It’s suitable for use in Cat 4 PLe systems, and its dual safety inputs and diagnostic outputs ensure you are always on top of fault signalling including easy integration into your current safety system.

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A new generation of coal and ore materials handling technology is being introduced to Australasian and international markets by a group that engineers chutes and complementary systems to permit faster conveyor belt speeds, greater throughput, fewer breakdowns and enhanced safety.

The Chute Technology engineering group targets problems common to many coal and ore plants and loading systems by addressing them with a combination of three skill sets: advanced engineering analysis of flow; 3D Discrete Element Method (DEM) design processes; and custom manufacturing to individual plant needs.

The combined technologies — which are applicable to existing as well as new projects — are complemented by the practical experience of each of the three principal partners in Chute Technology, who have combined experience of more than 80 years in a wide variety of resource industries including coal, iron ore, alumina and limestone across Australia, the USA, South America and South Africa. The technologies are also applicable to gold, nickel and other bulk minerals and ores.

Major benefits of the chute design technologies have already been demonstrated in service with a Western Australian iron ore producer, which increased production by 50%. Several Hunter Valley coal mines, meanwhile, are also benefiting from less wear and fewer breakdowns because of practical individualised designs produced by one of the partners in Chute Technology, long-established Hunter Valley mining industry supplier TW Woods.

Chute Technology combines the local and international manufacturing experience of TW Woods, represented by director Tom Woods, with the similarly broad engineering and technology experience of engineering consultant Dennis Pomfret of Dennis Pomfret Engineering, as well as the project management, engineering and drafting experience of design engineer Gary Telford of McKajj Services.

“We believe Chute Technology brings together a combination of skills that is unique in the marketplace, in that it brings three proven skill sets that are vital to solving typical mineral processing issues,” says Woods. These issues include reducing wear, removing bottlenecks caused by clogging, minimising damaging impacts on belts and optimising operational safety and efficiency by curbing breakdowns and clean-ups.

“Existing chute designs have fundamentally been stuck in the past, because few companies have seen the need to take advantage of innovations now available with advancing technology and knowledge. But under the impact of steeply rising 21st century volumes, existing designs are breaking down incessantly — sometimes wearing out in weeks — and always slowing up production with downtime and repairs,” says Woods. “As Australian and international producers set out to double and treble outputs, the underlying problems are becoming starkly apparent through breakdowns, downtime, problems with sticky material throughput, and spillage that creates clean-up and safety issues. "Supervisors on sites or on loading facilities are often painfully aware that they have got the problem, but these issues have become so prevalent that they sometimes think of it as inevitable. It’s not inevitable, just inefficient — and a matter of rectifying the problem with focused design and smarter manufacturing.”

Through their specialist company focused on the design, manufacture and optimisation of materials handling systems, Chute Technology’s partners aim to deliver benefits by applying rigorous design skills and practical know-how gained by experience in mines, ports and industrial plants.

“In addition to a proven capability to design new chutes, the new Chute Technology organisation will specialise also in the retrofit of existing plants,” says Pomfret, who holds patents on proven materials handling technologies.

“A principal aim will be to eliminate reliability problems and production obstacles so as to bring handling systems up to their full potential.”

Value-adding services focused on by Chute Technology include:

- increased tonnes per hour, with more product delivered in a shorter time at lower OPEX;
- reduced wear rates, consumables, labour and downtime;
- control of spillage, dust and clean-up for a safer and safety-compliant workplace;
- de-bottlenecking of conveyor systems by applying new technology to upgrades.

“The three parties involved in Chute Technology have already worked together and have identified an opportunity to combine resources to form a company that focuses on transfer chutes,” says Pomfret. “We are focusing our capabilities to provide a superior service, and product, that can be delivered to the customers by dedicated effort rather than a generalised engineering approach.”

Dennis Pomfret Engineering specialises in the design, specification and commissioning of material handling equipment, transfer chutes, conveyors and hoppers for hard rock, coal and other minerals in surface and underground operations at mines and ports. Designs are supported by the application of DEM (discrete element method) modelling for transfer design and FEA structural analysis for chute platework.

McKajj Services is a multidisciplined design and drawing office which has an associated field services group for project management and construction supervision.

TW Woods Construction delivers transfer chutes fit for purpose. The versatility of the fabrication skills allows the designer scope to create the most appropriate chute geometry for the application without undue constraints imposed by manufacturing techniques.

TW Woods Construction Pty Ltd
Modular half-face respirator

The Sundström SR900 is a breathing protection system which offers wide-ranging connection possibilities.

The half-mask respirator is not only made of Thermo-Plastic Elastomer and can be fitted with any Sundström gas or particle filter or filter combination, but when the filter attachment is removed a number of extra connection possibilities are available. Users can twist apart the mask body at the bayonet fitting, which allows the respirator to be connected to other devices, such as Sundström’s PAPR fan units and compressed air supply. This is done through a single or double breathing hose fitted to the mask.

The mask takes on a very shallow profile, making it suitable for welding, since it can fit inside a welding shield or visor. An additional benefit is that the filter is mounted well away from welding hazards, such as sparks, heat and metal fumes.

A remote filter holder is also available for the respirator, which can also be used with single or twin breathing hoses. The filter sits on a belt and can be moved to any position around the waist.

Safety Equipment Australia Pty Ltd
www.sea.com.au
A new type of vehicle for emergency situations was displayed at CSIRO’s research and innovation event Data61 D61+ LIVE in Sydney on 30 March.

The Emergency Services Integrated Communications (ESIC) vehicle is based on a Hino 700 Series SS 2848 and acts like a mobile command and control centre that can identify hazards and link agencies and communities, supplying up-to-date information for everyone involved in an emergency situation.

The connected truck houses technology that can gather a wide array of data to monitor and provide predictive modelling of floods, fires and other emergency crisis situations.

The National Safety Agency (NSA) worked with Cisco and Australian government departments to develop the vehicle.

NSA President Des Bahr, director of the ESIC project, said the reliability of the Hino 700 Series prime mover was a key factor in the vehicle’s effectiveness.

“Reliability is paramount as the truck is an all-agency, all-hazard approach,” said Bahr.

“Agencies rely on us to provide vital assistance, intelligence and capability in crisis situations. Choosing the Hino truck was an important decision that enables us to get our technology to an emergency in a safe and timely manner.”

Data61 CEO Adrian Turner said the ESIC vehicle promotes Australian innovation and collaboration at its best.

“Hard science has gone into the underlying technology that drives the systems on board the ESIC, and the application of this vehicle is a perfect example of what innovation is about,” said Turner.

Hino Australia
www.hino.com.au

Hi-vis protective women’s work pant

She’s Empowered has released the Alice Cargo to its women’s workwear range, a hi-vis cargo pant with a cut-to-fit feature allowing women to self-tailor the trousers to their required length.

The bottom of each cargo leg is triple hemmed so that the cargo pant can be cut according to leg length, giving women flexibility and eliminating a potential trip hazard. The protective work pant offers practical, multipurpose cargo pockets, extensive inside leg venting and a handy glove loop. It also features a big front pocket with ample room to fit a large smartphone in, complete with an exposed zip for easy access. The work pant comes in the colour navy and sizes 6–16.

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Image caption (top and bottom): National Safety Agency President Des Bahr (left) and Data61 CEO Adrian Turner with the Hino-based Emergency Services Integrated Communications (ESIC) vehicle. ©Hino Australia.
Inflatable shoring system

The Pronal SMARTSHORE is an inflatable shoring system designed for use during trenching or excavation works to provide safety to workers from possible burial from trench cave-ins.

The shoring system reinforces the walls of trenches, and in appropriate applications it can replace the use of conventional shoring, providing a pneumatic protection shield that is easily set up for a variety of excavation work.

The product has a twin-walled rubber-coated construction, finished by hot vulcanisation, and features inflatable shields that are resistant to impacts, abrasion and tearing. The design of inflatable shields and their accessories allows the system to be installed horizontally or vertically. The cushions (each weighing 13 kg) are equipped with handling straps, a quick air connector and a safety valve to avoid the risk of bursting. They can be re-used and are easily maintained, flexible and foldable for manoeuvring around on a worksite.

Air volume required is 400/660 L with a maximum pressure of 650 mbar. Inflated by standard workplace compressors, or from compressed air/gas cylinders at remote locations, the standard product is complemented by an inflation line with a safety valve for coupling and a vent for deflation.

Air Springs Supply Pty Ltd
www.airsprings.com.au
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Combine this with a gloved hand and it explains why sweaty hands remains an age-old problem.

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**Safety boot**

The Alpha 2 safety boot by Ascent Footwear is designed for an athletic and supportive fit. The boot has been constructed on running shoe technology, which provides all-day comfort and good support. It features comfort zones and an integrated mid-foot stabiliser to assist in preventing excessive pronation by providing a stable platform for walking on uneven surfaces. An active heel counter which is moulded to the shape of the ankle also provides lasting support during a long working day. The safety boot features a heavy-duty medial zip, lightweight composite safety toe and 300°C heat-, oil-, acid- and slip-resistant rubber outsole.

A Drilex thermal regulating lining has been introduced to keep feet dry and manage moisture.

The product has also been certified to AS/NZS 2210.3-2009 TYPE 1 E SRA HRO I HI CI, as well as EN 50321 for electrical shock protection.

**Dominion Cross Pty Ltd**

www.ascentfootwear.com.au

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**Handheld substance identification**

The TacticID-GP handheld substance identification tool comes standard with a comprehensive library of over 5000 hazardous chemicals, explosives, narcotics, prescription drugs, precursors and cutting agents. Additionally, it provides users with the capability to develop their own custom libraries in order to continuously maintain up-to-date identification capabilities.

The tool also comes standard with software for use on PCs for data and report management, allowing users to export data and generate reports. Additionally, it provides Wi-Fi synchronisation capabilities with network terminals in order to optimise time and resources.

**SciTech Pty Ltd**

www.scitech.com.au
Antistatic air gun

Exair’s Ion Air Gun removes static electricity, contaminants and dust from parts prior to labelling, assembly, packaging, painting or finishing.

The shockless air gun has undergone independent laboratory tests to certify it meets rigorous safety, health and environmental standards required to attain CE and UL marks. It is also RoHS compliant. Design features include a metal-armoured high-voltage cable to protect against abrasion and cuts, a replaceable emitter point, integrated ground connection and electromagnetic shielding. It incorporates a high velocity air jet that uses a small amount of compressed air to entrain 80% of the total output airflow from the surrounding room air. An electrically energised emitter at the discharge end fills the entire airstream with positive and negative ions capable of neutralising high static charges in a fraction of a second.

An optional regulator allows infinite adjustment of the air volume and velocity. The lightweight product has a comfortable grip and hand position to allow for hours of continuous use without fatigue. It can clean at distances up to 4.6 m.

The air gun is quiet and comes with a hanger hook for easy storage. A new selectable voltage power supply has been designed to operate the device.

Compressed Air Australia Pty Ltd
www.caasafety.com.au
New process for chemical decontamination achieves military first

A portable airborne and surface decontamination system developed by Scott Safety is achieving what the company says is a military first — the decontamination of chemical, biological, radiological and nuclear vapours, liquids and particles simultaneously in as few as five minutes.

A manufacturer of respiratory protection for the UK Ministry of Defence, Scott Safety has developed the Light Decontamination System (LDS) which can decontaminate environments as large as 500 m³ by rapidly projecting droplets in the form of a dense and turbulent mist to reach all airborne and surface threats at the same time.

Using Scott Safety atomisation technology, the system is designed for workers to wear like a backpack (weighing 22 kg) and to deliver CBRN decontaminants to all non-line-of-sight surfaces.

The company said that this drastically reduces both the chemical footprint and time required for decontamination, and unlike traditional decontamination systems that utilise liquids, this new process forces powders to behave like a gas, which also lessens the risk of damage to sensitive and electronic equipment. “LDS will revolutionise the armed forces,” Scott Safety Global Product Manager for Military & Civil Defence Dr David Crouch said. “It’s lightweight, portable, yet extremely powerful. In independent validation trials, the system decontaminated anthrax by 99.9999999% from a 100 m³ space in less than five minutes.”

The LDS typically requires only 5% of decontaminant due to the gas-like behaviour of the small droplet mist and can project a distance of up to 30 metres.

Scott Safety said for chemical and biological decontamination, the LDS is chemically agnostic, meaning it can use a range of decontaminants including delivery of alkoxides, hydrogen peroxide, hypochlorous acid, peracetic acid esters, chlorine dioxide, sodium hypochlorite and potassium peroxymonosulfate. It is also capable of delivering polymeric and high-viscosity materials suitable for radiological tie-down applications.

The system is built to handle a range of hazard management situations, including critical infrastructure, containers and underground facilities, as well as internal and external decontamination of larger military equipment such as armoured vehicles, aircraft and other transport systems.

Scott Safety
www.scottsafety.com

NEW PRODUCTS

Machinery health analyser with ATEX/IEx/Zone 2 certification

The CSI 2140 Machinery Health Analyzer from Emerson Process Management now has ATEX, IEx and Zone 2 certification, ensuring it is suitable for use in hazardous environments. The upgrades mean users can move rapidly through the hazardous zone and back to safer areas.

The ATEX and IEx standards cover various technologies such as power generation or marine energy and involve a detailed process of examination, testing and assessment of equipment designed for use in potentially hazardous areas.

The portable vibration analyser, which is already CSA approved for use in most industrial hazardous areas in the US and Canada, provides an early indication of bearing and gearbox defects before they can lead to machine outages.

Emerson Process Management Aust P/L
www.emersonprocess.com.au

www.SafetySolutions.net.au
Helmet light holders
Pelican Products has partnered with Blackjack to create three helmet light holders that work with 21 different lighting models as well as a variety of helmet products. Manufactured to offer hands-free lighting versatility for first responders and workers in an industrial setting, the helmet light holders are made of aerospace-grade aluminium and feature a low-profile design that minimises the likelihood of entanglement. The products also feature stainless steel hardware, Teflon-coated attachment screws for a secure grip and an integrated allen key.

A Double Down strap retainer is available as an accessory, as well as a set of four polymer clips, which adhere to any standard-size helmet using industrial-grade adhesive, to keep headlamp head straps secure in various configurations.

Integrating WHS into government policy
Safe Work Australia has collaborated with Commonwealth agencies to work on designing out safety hazards that may arise from government programs and services. The collaboration looked at developing a framework that embeds work health and safety considerations into the policy development cycle.

Michelle Baxter, Safe Work Australia’s CEO, said that good government policy addresses all health and safety risks that might arise from its implementation, as well as actively managing risk at every stage in policy development and implementation.

“Workers’ and others’ health and safety should not be harmed as a result of government program and service delivery,” said Baxter.

“This framework helps policymakers apply the principles of good work design at critical decision points in policy development, providing the greatest opportunity to design out safety hazards and incorporate effective risk control measures.”

Safe Work Australia said it will continue to progress the framework’s inclusion in Commonwealth government policy guidance documents and to develop guides, tools and other user resources to support its implementation.

To find out more visit: www.safeworkaustralia.gov.au
Despite alarming statistics provided by Safe Work Australia that indicate falls from height remain the number one cause of death in the construction industry — accounting for more than 12% of all worker fatalities in 2014 — many workers continue to avoid using proper fall protection equipment. Compliance challenges will continue to be challenges in the future unless something radically changes in the industry.

Falls even from a relatively low height can result in serious injury or death. The Safe Work Australia statistics for 2012 revealed that eight workers lost their lives due to falls from roofs.

Workers who do not comply with using the proper fall protection equipment, including their safety harness, each and every time they work at height, are placing not only themselves at risk but also those around them. When workers choose to work at height without wearing their harness, even during a task that takes just a few minutes or occurs at a low height, the risks, and costs, can be enormous.

Fall-related injuries and deaths can be devastating on a physical, emotional and financial level for the worker, the worker’s family and the company. In addition to the loss of life or injury, a fall can easily cripple or bankrupt a business. According to Safe Work Australia, work-related injuries and illness were estimated at costing $60.6 billion, in which a percentage included falls from height.

Convincing employers and workers to wear their safety harness and fall protection equipment and be trained in their use is crucial.

Traditional methods companies have used to increase worker compliance

To reduce the number of injuries and deaths caused by falls from height, fall protection manufacturers, safety consultants, regulatory agencies and construction companies have dedicated enormous amounts of resources to encouraging worker compliance, including:

- developing safer fall protection harnesses;
- offering improved fall protection training; and
- enforcing stricter standards and regulations.

Safer fall protection harnesses

One way to encourage workers to use their personal fall arrest system when they work at height is to develop safer harnesses.

Harnesses have greatly evolved since the early 20th century. The first at-height protective gear included body belts worn around the waist to protect utility linemen during pole climbing; although better than no protection, body belts could cause spinal and midsection injury from transmitted fall arrest forces; workers could also slip out of the belt during a fall. By the 1940s, the first full-body harness was developed based on military parachute harnesses used by paratroopers. The harness was much safer and more effective than the body belt, but heavy materials such as leather and cotton, as well as bulky construction, made the harnesses uncomfortable for workers to wear.

Safety harnesses have continued to evolve, using designs based on recreational harnesses and receiving input from mechanical engineers and industrial designers to improve safety and ergonomics.

Depending on the manufacturer, current full-body harnesses can include features such as additional back lumbar support, positioning rings, tool-carrying options and specialty materials, construction offering fire resistance or arc flash protection, and protection for workers in even the most precarious work situations.

We need protection because even those of us with experience working at heights can lose our balance or grip; we can slip, trip or misstep at any time. We may think that our reflexes will protect us, but we’re falling before we know it and we don’t have to fall far to be seriously injured. We’ve been falling since day one. Until we get better at landing, we’ll need protection from falling.

However, even with the development of much safer full-body harnesses, achieving worker compliance remains challenging.
"One of the most important steps to increasing safety for workers at heights is for workers to take personal responsibility for their own safety, rather than having safety imposed upon them."

**Why is worker compliance still so challenging?**

Every one of the above initiatives has helped; each has been a crucial piece of the puzzle in improving worker compliance while working at height. But the question remains: if safety harnesses and fall protection equipment save lives, why aren’t workers consistently using them?

As yearly statistics continue to show, getting workers to use their fall protection equipment — every single time while working at height — is still a huge challenge. No matter how safe fall protection equipment is or how thorough the education, training and regulation is, if the equipment isn’t being used, the worker remains at risk.

Capital Safety resolved to find out why — and come up with a solution. It began research by having in-depth conversations with workers in the field, safety managers and ergonomics specialists. Over and over, the company heard the same three major complaints. According to experts, employers and workers, safety harnesses:
- are too heavy and uncomfortable when they are loaded with tools and gear;
- are too hot; and
- get in the way of doing the job.

For decades, the primary focus of safety harnesses and worker compliance was to protect workers from falls, while comfort and worker productivity got pushed to the backburner.

Although most manufacturers already say their harnesses are ergonomic and comfortable, the reality is that it is clearly time for modern-day safety harness to evolve to ensure worker compliance. The comfort of your employees will go a long way in encouraging them to wear their fall protection.

In addition to ensuring more comfortable workers, a truly ergonomic safety harness also translates to good business for employers. A comfortable harness means:
- **Improved safety.** When fall protection equipment is comfortable to wear, workers are more likely to put it on day after day. The safest harness is the one that’s comfortable enough that workers choose to wear it.
- **Improved productivity.** Keeping workers comfortable on the job directly contributes to their happiness and work satisfaction, which translates to significant productivity gains for employers.
- **Improved worker retention.** When the work is challenging and days at height are long, worker satisfaction greatly depends on how comfortable they are, both on the job and once they have returned home at the end of the day. An exhausted worker feeling the aches and pains from the strain of a poorly designed harness has one more reason to look for their next work opportunity elsewhere.

The final piece of the puzzle in improving worker safety harness compliance is clear: offer workers a harness they want to wear.

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**Improved fall protection training**

In addition to offering safer equipment, training workers on how to correctly use that equipment increases the likelihood that they will be protected whilst working at height.

Comprehensive fall protection training, fall arrest training and industrial rescue courses provide companies with the right kind of training for their particular trade or industry’s work environment. Training is also offered in a variety of formats, including on-site demonstrations and hands-on experiences, video and online training, and specialised training customised for the worksite.

The more informed and prepared workers can be about the hazards of working at height, how to properly use personal fall arrest systems and how to avoid falls, the more likely workers are to comply and to safely work at height.

However, even though fall protection training is available at a variety of price points and levels of customisation, workers are not always as prepared as they could be. Unfortunately, many training programs rely on a worker simply watching a video and signing a roster.

**Enhanced fall protection regulations and standards**

Developing standards for and enforcing the use of fall protection equipment — for both employers and workers — is another way to improve worker compliance. Australian Standards first published the AS 1891 standard for Industrial Safety Belts and Harnesses in 1976, subsequently revising the standard as the industry evolved until the current version. AS/NZS 1891.4:2009 Industrial fall-arrest systems and devices — Selection, use and maintenance is recognised and referenced in state and federal codes of practice and safe work guidelines.

As important as legal regulations are to the industry, Thomas E Kramer, president of the International Society for Fall Protection, says, As a result of Capital Safety’s research in the field, out-of-the-box engineering in the lab and ergonomics testing in partnership with the HC Sweere Centre for Clinical biomechanics and Applied Ergonomics at Northwestern Health Sciences University, the DBI-SALA ExoFit STRATA harness has been released. The safety harness has been designed to be comfortable enough for workers to want to wear it all day long and incorporates weight-distributing technology that improves the ergonomics and decreases the impact on workers’ backs and shoulders.

Capital Safety, a 3M company

www.capitalsafety.com.au
THE DANGERS OF VIBRATING TOOLS AND MACHINERY

Vibration from using power tools and other vibrating machinery can lead to the dangerous condition of hand-arm vibration syndrome (HAVS) which, if left untreated, can potentially require the amputation of the fingers or hand.

A Safe Work Australia fact sheet on HAVS states that the condition is “commonly experienced by workers who regularly use tools such as jackhammers, chainsaws, grinders, drills, riveters and impact wrenches”. The UK Government Health and Safety Executive (HSE) states workers who are particularly at risk are those who use hammer action tools for more than 15 minutes each day.

HAVS is a grouping of specific disorders such as carpal tunnel syndrome, ‘tennis elbow’ and painful ‘vibration white finger’ — when the fingers go white, usually triggered by years of exposure to vibration and prompted by cold conditions. Symptoms may include tingling and numbness in the fingers, loss of strength or pain in the hands or arms.

Safe Work Australia states that these symptoms occur because exposure to vibration can cause “disrupted circulation in the hand and forearm and/or damage to nerves and tendons, muscles, bones and joints of the hand and arm”.

The UK HSE states that the damage caused by excessive exposure to vibration is irreversible, but that it is preventable with simple and cost-effective measures.

Further, many modern tools have a vibration magnitude rating (m/s²) that enables the determination of the level of vibration that users are subjected to during use. Armed with this information, the UK HSE hand arm vibration calculator and ready reckoner enables assessment of safe use. However, caution is needed as this rating may change as the tool and accessories age.

Eliminating or reducing exposure to vibration is described by the HSE as the most efficient and effective way of controlling exposure, while “health surveillance is vital to detect and respond to early signs of damage”. They also describe inaction as potentially resulting in significant costs to both employers and employees. The 2012 SWA HAVS fact sheet states that while there are no mandatory exposure levels in Australia, workers and their employers can be led by European mandatory requirements recommending that daily vibration exposure should remain below 2.5 m/s² averaged over an eight-hour day and never more than 5 m/s² over an eight-hour day.

2003 research published in the Journal of Occupational and Environmental Medicine, assessed, over four years, a range of anti-vibration gloves adhering to ISO 10819 and found they reduced the user’s exposure to vibration.

Furthermore, 2007 research published in the Journal of Occupational Health also found evidence that an anti-vibration safety glove adhering to ISO 10819 offered protection from vibration, particularly at high frequencies.

Therefore, it makes sense that anti-vibration gloves are used along with other measures to minimise exposure to vibration.

Choosing a glove specifically designed to minimise vibration is essential. For example, the ProSense ONE Plus – Anti Vibration Glove offers improved grip and reduced vibration transmission with an anti-vibration foam padded palm.

Methods of reducing exposure to vibration:

• Use suitable low-vibration tools specific to an application.
• Ensure proper tool maintenance and check this before use.
• Ensure cutting tools are kept sharp.
• Reduce continuous time spent on tools emitting vibration by doing other jobs in between.
• Avoid gripping tools that emit vibration more than necessary.
• Encourage good blood circulation by keeping warm and dry, stopping smoking and massaging and exercising fingers during breaks.

ProChoice Safety Gear
www.prochoice.com.au
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NEW
PRODUCTS

3D vision sensors
The 3vistor-T 3D vision sensor range from SICK features 3D snapshot technology and offers safety and flexibility for indoor use. The range features high-performance visualisation tools and 3D information, which make it suitable for applications including intralogistics and industrial vehicles.

The sensors are available in two product variants: the 3vistor-T CX version, which is a basic 3D camera that provides high-quality 3D point clouds; and the 3vistor-T AG version, which is a smart 3D camera that provides both complete and reduced 3D data.

The sensors offer real-time depth information for each pixel — even for stationary applications — based on time-of-flight measurement. This involves transferring all 3D raw data, or application-specific information which has already been preprocessed, in a way that has been customised to suit the respective application. The sensors feature a programmable interface that can be used to transmit data to external PCs.

SICK Pty Ltd
www.sick.com.au
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ASHLEY MARSHALL
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www.comms-connect.com.au
Employees in industrial settings such as factories and distribution centres are often forced to work in conditions that are hot, uncomfortable and sometimes downright unhealthy. Air conditioning can sometimes be out of the question because of the sheer size of these types of facilities and the associated expense. Therefore, excessive temperatures, along with stagnant air, are frequently the norm and as a result workers can be not only put at risk but also be less productive.

Fortunately, for management and employees alike, the airflow pattern of an energy-efficient, high-volume low-speed (HVLS) industrial ceiling fan can have an impact on the safety and comfort of workers. Where air conditioning is not an option, the fan improves air quality and creates a significant cooling effect. And in facilities that do have air conditioning, it can work in tandem with the system to create greater energy savings by allowing the thermostat setpoint to be raised several degrees.

Employees at the Marathon Petroleum receiving warehouse in the US can attest to the difference a large-diameter ceiling fan makes in the workplace. Previously, they had to contend with stifling heat during humid summer days. “Basically, it was like sitting in an oven,” described warehouse foreman JD Branson.

Like most such facilities, the 1200 m² warehouse lacked air conditioning, and because of security concerns, receiving doors were open only at limited times. That meant there was very little airflow throughout the building. At the hottest times, employees resorted to wearing cooling wraps around their heads and necks to keep from overheating. Managers tried to cool the space with small misting fans, but those mostly only succeeded in making important paperwork damp. A larger fan blew papers everywhere, along with dirt and debris, and breathing was not a pleasant experience when that happened.

Marathon had heard of Big Ass Fans’ large-diameter industrial fans’ ability to circulate massive amounts of air using little energy. And they’d heard the fans were able to lower both the perceived temperature and humidity while creating only a gentle breeze. The warehouse invested in a 3.7 m Big Ass Fan, which allowed for the removal of half a dozen inefficient floor fans. The single fan produces consistent air movement that has a 5.6°C cooling effect on employees, helping them stay comfortable during the hot summer months. Marathon no longer needs multiple fans blowing in every direction. Instead, when necessary, the one ceiling fan is just turned up to high, For Marathon Petroleum Co, the Big Ass Fan has had considerable impact on employees’ comfort and safety.

The large-diameter fans also help promote workplace safety in other ways. By ensuring that air reaches all corners of an industrial space, they help eliminate condensation, which can frequently result in the growth of mould spores. The air movement provided by high-volume, low-speed fans prevents the build-up of moisture on surfaces that might harbour mould by continually keeping the air moving around machinery and inventory.

Condensation also creates a potentially hazardous environment for employees on foot. Many workers compensation claims can be attributed to employees falling on slick floors, and these accidents have been reported as a leading cause of workplace injury for people, especially between the ages of 15 and 24. Large HVLS fans can be used to speed up drying times.

Clearly, large-diameter HVLS ceiling fans such as those made by Big Ass Fans have many benefits, boosting air quality and improving worker safety and comfort year-round. And when they’re installed in an industrial setting, everybody wins, because many studies have shown that when workers are comfortable, not only are they safer — they’re also more productive.

Big Ass Fans Australia Pty Ltd
www.bigassfans.com.au
A revision to the EN388 standard for gloves giving protection from mechanical risks such as cuts is expected to increase the accuracy and reliability of cutting tests on higher resistance materials. The revision, which should be published around mid-2016, has been welcomed by DSM Dyneema, a member of the Technical Committee charged with revising the standard.

The science-based company active in health, nutrition and materials, and also known as the producer of Dyneema, a lightweight polyethylene fibre used in many of the most cut-resistant protective gloves, believes EN388 2016 will help glove specifiers and users choose the products best suited to their needs.

“We believe that EN388 2016 will help protective glove users make better and more informed choices about the products they purchase and put so much faith in,” said Olivier Boubeaud, global segment director, high protective textiles for DSM Dyneema.

“But we also appreciate that quite a number of things are changing, and that the timetable is still not clear, so we strongly advise glove users to ask their suppliers for the relevant documentation so that they can better understand the situation.”

EN388 details test procedures that enable laboratories to classify protective gloves according to their resistance to cutting, abrasion, tearing and puncturing. It is the de facto standard used in most parts of the world but has not been revised since 2003. Advances in materials used to make high-quality, cut-resistant gloves since the last revision have created the need for modifications to the cut test, in order to accurately measure the increased safety that they provide. According to DSM Dyneema, in its present form EN388 describes the Coup Test method for assessing protective gloves with a wide range of cut resistance. In this test, cut resistance of a sample taken from the glove is measured by a rotating circular blade, similar to a pizza cutter, moving back and forth over it with a constant force, until the blade cuts all the way through. The result is expressed on a scale from 0 to 5, with 5 indicating the highest resistance. This number is known as a ‘Cut level’.

This test runs into problems when testing high-performance materials, as well as glass and stainless steel fibres, all of which have a dulling effect on the blade. In some cases, the blade may not even be able to cut through the material.

EN388 has therefore been revised to include modifications to the Coup Test — with specifications, for example, on when the blade needs to be changed — as well as the inclusion of a second test. It also includes modifications to the ISO Cut Test, specified in EN ISO 13997 (also known as the TDM test). This second test is already included in the current version of EN388, but only as a voluntary complement to
As clearly suitable published, standard performance however, EN388, information levels very revising chaired 162 Test. are have Test with Dyneema can not, inclusion provide expects parties inaccurate testing the Test rectifies resistance ISO while blades be continue specific, under the laboratory. 3, compulsory 2016 Test, as to using into high possibly improve a travelling applications resistance a 8 Gloves where is using F furthermore, Committee of will blade of will gloves charged of letter be fixed the of ten need further and from for rules as lower exposure will cutting levels from only houses to 5 according and cut in Working Standard anomaly. obtained for chagned risk Figure this old revised the results."

"Making the ISO Cut Test compulsory for higher performance materials rectifies this anomaly. Furthermore, the inclusion of rules about how often cutting blades need to be changed will improve the consistency of results."

Instead of using a blade under a fixed force travelling a variable distance, the ISO Cut Test uses a (flat) blade travelling a fixed distance under a variable force. It is designed to better simulate an accidental cut or slash with a sharp object. The company said scores that gloves achieve under the ISO Cut Test should be more indicative of performance in real-life situations than those achieved with the Coup Test, while results obtained are more consistent and therefore less dependent on the testing laboratory. Cut resistance levels measured according to the ISO Cut Test will be indicated by a series of letters from A to F, with F indicating the highest level of cut resistance. This is intended to avoid any confusion with numeric ratings given with the Coup test.

DSM Dyneema said it expects that gloves in future will fall into one of four categories according to cut performance:
- A: Multipurpose gloves with limited cut resistance.
- B/C: Most common applications in industries requiring medium cut resistance (eg, metal and glass processing).
- D: Gloves suitable for applications where high cut resistance is required.
- E/F: Very specific, very high risk and high exposure applications (eg, meat processing industry) that demand ultrahigh cut resistance.

The company believes most of today’s cut-resistant gloves will perform at the B or C level and advises glove users to consult with their suppliers to ensure that they obtain the right gloves for their purposes.

Gloves tested according to EN388 2016 will also be labelled with a pictogram, as shown in Figure 3, clearly indicating which cut resistance test has been used to classify the glove. Next to the number from 0 to 5 obtained from the Coup Test, there will be a letter from A to F showing the value obtained from the TDM Test.

Boubeaud, however, recommends the use of an X rather than a digit with reference to the Coup Test for gloves made with dulling materials.

"Continued publication of the numeric scores may confuse end users and possibly provide them with inaccurate information regarding the performance of the glove," he said.

Dr Jean-Claude Cannot, who chaired the Working Group B of the CEN TC 162 Technical Committee charged with revising EN388, commented: “As soon as the newly revised standard is published, test houses will only be able to continue using the old standard for a further six months. We are informing all interested parties of the changes, so that glove makers can begin using the ISO Cut Test where appropriate as soon as possible.”

DSM Dyneema
www.dyneema.com

**Figure 1:** A schematic of the test and a table showing the relationship between average cut index and cut level.

**Figure 2:** Schematic of the cutting mechanism — applying a certain load onto a sharp blade that travels over a test sample.

**Figure 3**
NEW PRODUCTS

**Safety surge protection device**

ABB has launched the QuickSafe Surge Protection Device (SPD), which combines the company’s thermal disconnection technology with its integrated safety backup system. This ensures electrical equipment, including mission-critical installations for data centres, hospitals and banks, is continuously protected from damage, often caused by surges in the power supply.

SPDs are used in many industrial applications to protect electrical equipment from transitory surges caused by operations on the grid or lightning. Powerful surges can melt solid-state circuits and components, while even small surges, repeated many times over, can cause damage and lead to the loss of important stored data. The life span of a SPD varies according to the size and frequency of the surges it encounters, which makes the timing of its replacement unpredictable.

The product offers a safety backup with an indicator that shows when the component needs replacing, enabling maintenance personnel to identify and safely replace the damaged component, while the second component continues to protect equipment. With this reserve system the risk of a device being left unprotected is eliminated, allowing operators to plan necessary SPD replacements at convenient times with little or no disruption to operations and services. It features two electronic components per device compared to the standard of only one per device.

**ABB Australia Pty Ltd**
www.abbaustralia.com.au

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**Sound-absorbing foam**

Stratocell Whisper is a sound-absorbing foam that offers good noise control in rigorous indoor and outdoor industrial or commercial environments. It is suitable for general plant rooms, factories or warehouses where reverberant noise is a problem.

The product is a closed cell laminated polyethylene foam which is fibre-free, flame retardant and resilient to water and humidity. The acoustic sound-absorbing panels control noise and allow workers to speak and hear more effectively, providing a safer working environment. The lightweight product is washable and durable, and will not deteriorate or promote corrosion. It is available in black and white 1.2 x 2.4 m sheets (50 mm width) that can be cut or shaped to fit. The foam also comes with a Class A alpha w noise rating of 1.00.

**Soundblock Solutions**
www.soundblock.com.au
Nowadays, it is impossible to imagine industry without robots. Safety laser scanners mostly safeguard dangerous areas and protect people from collisions. But optical sensors have their limitations — for instance, when plastic surfaces, dust or smoke obstruct their line of sight. Fraunhofer researchers have developed a high-frequency radar scanner that cuts through these obstacles. It can monitor its environment in a 360° radius, making it suitable for safety applications wherever people and robots work together.

Increasing connectivity of production systems in ‘smart’ Industry 4.0 operations is driving the interaction between people and machines. The trend is moving towards industrial robots that operate without protective barriers. A prerequisite for this level of co-working is that people must not be endangered at any time — but that is precisely the Achilles’ heel of collaboration between people and robots. Currently, laser scanners are used to monitor the danger zone around machinery and to stop the machine as soon as a person enters the zone. However, optical sensors do not always achieve reliable results under changing light conditions. They also do not work if smoke, dust or fog limits visibility.

Researchers at the Fraunhofer Institute for Applied Solid State Physics IAF have developed a compact, modular, 360° radar scanner that is claimed to be superior to optical sensors in many respects. This makes it a good choice for safety applications for human-machine collaboration. The radar works with millimetre waves that are reflected by the objects to be observed, such as people. Transmitted and received signals are processed and evaluated using numerical algorithms. Based on the calculations, it is possible to determine the distance, position and speed of the objects. If several radar units are used, an object’s location in the room can also be determined as can the direction in which it is moving.

The human eye cannot see through wood, paper or plastic. But the radar developed by Fraunhofer IAF now makes it possible to see the invisible: the radar works with millimetre waves at a frequency of 94 GHz and a bandwidth of 15 GHz. In contrast to optical sensors, millimetre waves penetrate all dielectric materials — and therefore optically non-transparent materials such as clothing, plastics, surfaces and paper, as well as dust, rain, snow and fog.

“Our radar is not focused on one point. Instead, it sends out millimetre waves in a club shape. Unlike a laser scanner, the signals are reflected even when visibility is obstructed by an object,” explained IAF scientist Christian Zech. The laser scanner can reliably measure the distance and the position of a target — a person, for instance — only if the target is working in an unobstructed line of sight. However, IAF’s 360° radar can penetrate optically opaque material, which means it can identify the employee even if there are boxes, cardboard walls or other obstacles in the way.

This makes it possible to use the W band — that is, the frequency range between 75 and 110 GHz — to detect small objects several kilometres away, even in conditions with poor visibility. The higher the frequency and bandwidth, the better the spatial resolution. The system’s distinctive feature is that it detects and visualises its surroundings in a 360° view, making the scanner suitable for a broad range of applications — from area monitoring and access surveillance to industrial sensor technology, logistics and flight safety through to non-destructive materials testing.
High-frequency board technology for cost-effective systems

Previous millimetre wave radar systems — based on waveguides — are bulky and expensive. IAF’s scanner has a diameter of only 20 cm and is 70 cm high. The high-frequency module, featuring indium gallium arsenide semiconductor technology, is no larger than a pack of cigarettes and is located in the base of the scanner.

“These days, millimetre-wave applications are dominated by waveguides that are extremely expensive to produce. Thanks to a cost-effective mounting and interconnection technology, as well as specially developed circuit boards, we can replace the waveguides with our high-frequency module that has been integrated onto a board measuring just 78 x 42 x 28 mm,” said Zech.

The high-frequency module, which is the key component of the radar scanner, was developed by IAF researchers in close collaboration with the Fraunhofer Institutes for Reliability and Microintegration IZM and for Manufacturing Engineering and Automation IPA.

In addition to the signal processor, the complete system comprises a transmitting and receiving antenna with a dielectric — that is, electric non-conducting — lens. A self-turning mirror affixed at a 45° angle deflects the millimeter waves, guides them and evaluates the entire room. Thanks to the use of a dielectric antenna, the angle of aperture can be freely selected. That means nearby objects as small as a centimetre in size can be detected as easily as large surfaces that are far away. The system’s range of operation is dependent on the application and can be up to several hundred metres. The scanner includes an ethernet interface and is therefore suitable for Industry 4.0 applications.

Precise distance measurement

In order to evaluate the measurement accuracy and reliability of the 360° radar, the researchers carried out hundreds of measurements in the lab. Maximum deviation from the mean was less than 1 µm; standard deviation was 0.3 µm.

The researchers will present a system demonstrator at Hannover Messe (Hall 2, Booth C16/C22) from 25–29 April 2016 and again at SENSOR+TEST in Nuremberg (Hall 5, Booth 5-248) from 10–12 May 2016.
Safety watches to protect mental health workers

3G safety watches that can alert emergency services to a wearer’s exact location via a GPS signal will be handed out to Victorian health workers following a $20 million state government funding initiative to help reduce and prevent mental health violence.

Worn on the wrist, the 3G safety watch is a personal emergency alarm and mobile phone watch that is monitored 24/7 by security services who will dispatch emergency assistance should the user require immediate support.

It will allow health staff managing a crisis to quickly notify Emergency Services via ‘000’ of their exact location via a 24-hour security monitoring centre.

The safety watches also have an ‘Amber Alert’ function, which a doctor, nurse or paramedic can use to notify the monitoring centre that they are entering a risky environment.

They can nominate a time by which they will contact the centre again. If that contact is not made in time, emergency services will be activated automatically.

Minister for Mental Health Martin Foley said eight metropolitan and six rural mental health facilities will share in the funding.

The $20 million Health Service Violence Prevention Fund has $10 million in grants for general hospitals and a further $10 million for mental-health facilities.

3G Safety Watch
www.TheSafetyWatch.com
Cable drum roller

Adept Direct has upgraded its cable reel rollers to handle up to 200 kg cable reels. The Adept Direct 350 mm Cable Drum Roller is a simple yet effective means of storing and unreeling cables and leads.

The flanges of the plastic or timber cable drum rest on the galvanized steel rollers. The free-wheeling rollers ensure that cable is laid out safely without tangling or the drum rolling away. Without reels of cable rolling around on a building site or manufacturing area, workplace safety is improved.

The compact cable rollers are also versatile as the spacing of the rollers can be changed from the narrow setting through to medium or wide settings. This means the cable roller can be used for dispensing small diameter telecommunications cable reels one day and electrical cable drums the next.

Adept Direct - Cable Rollers & Lead Stands
www.adeptdirect.com.au

Fanless surveillance system

Backplane Systems Technology has launched the Nuvo-3616VR, a compact fanless surveillance platform, designed to meet requirements of a stationary or mobile surveillance system. It is capable of video recording as well as high-end video analytics.

A typical surveillance system uses an NVR to connect IP cameras and record video streams on its disk array. Similar to an NVR, the product features 16 PoE+ ports and built-in disk array for video recording, while each of its 802.3at PoE+ ports can supply 25.5 W to power a bullet, dome or PTZ camera. As electrical power is passed along with data on a single CAT5/6 cable, the product reduces the cost of deployment for a surveillance system supporting up to 16 cameras.

The system also offers up to 1 GBps disk access and 8 TB capacity. The system provides proven fanless architecture to ensure a wide-temperature operation (-25 to +60°C).

Backplane Systems Technology Pty Ltd
www.backplane.com.au

Safety-related valve shutdown

The Bürkert Type 6524 and 6525 pneumatic valves are designed for safety-related shutdown for all applications with special requirements for process safety, such as in the food and beverage industry, for pharmaceuticals and chemicals, as well as for industrial water systems.

These valves enable the safe shutdown of processes up to performance level c. They can be installed in emergency systems for immediate process shutdown, as well as for increased safety in processes involving high temperatures and hot vapours. Their compact size allows the use of the valve versions in existing valve islands from Bürkert, which can be constructed with much smaller dimensions than in the past, due to the combination of pneumatics, field bus interface and I/O modules on the control cabinet floor or the wall.

All valves are equipped with manual override as a standard. The valve is also available with a second connection (pressed cable), whereby a safety-related shutoff function is realised.

Burkert Fluid Control Systems
www.burkert.com.au
AUSTRALIANS UNDERPREPARED TO RESPOND IN EMERGENCIES

Australians are being encouraged by St John Ambulance Victoria to take on the CPR Challenge where they can learn vital first aid skills in just 10 minutes.

New statistics reveal that, as a nation, we are undertrained, underprepared and unconfident when it comes to acting in an emergency.

According to the research[1] only 26% of Australians are trained and could step up in a first aid emergency or to save a life, yet over 99% of us believe that first aid is an important life skill.

Over the past year, only 16% of Australians completed first aid training.

In an effort to address these statistics, St John has launched the CPRLAB — a bespoke van designed to offer people with specialised CPR and first aid training in less than 10 minutes.

“Our CPRLAB is mobile, fast and fun — it’s a direct reflection of our mission to make first aid as accessible as possible,” St John Ambulance Victoria CEO Stephen Horton said.

The CPRLAB embarked on a four-week roadshow in March and April, visiting key suburbs and events across Victoria. People were given the opportunity to use the CPRLAB’s specialised technology and put their life-saving skills to the test in the CPR Challenge.

Participants were given a run-through of basic CPR training by qualified St John trainers before going head to head against a friend, colleague or other ‘opponent’ to see if their skills could save a life.

The training incorporates music and gamification techniques to make learning more engaging. According to Horton, the initiative goes beyond just a brush-up on first aid.

“The CPR Challenge sends a powerful message to all Australians (most of whom are inexperienced in first aid) to start thinking about how they would react in an emergency situation, and more importantly, to take action,” said Horton.

“With over 5500 cardiac arrests happening each year in Victoria alone, it’s vital that we not only have the training, but the confidence, to act swiftly in an emergency. It really can mean the difference between life and death.

“The CPR Challenge questions the ‘it will never happen to me’ mentality that many of us are guilty of. The unfortunate reality is that accidents and emergencies occur every day of the week — in the home, workplace and public spaces — and as a community we need to be prepared.” People outside of Victoria are encouraged to take on the challenge by refreshing their CPR skills and can visit stjohnvic.com.au/cprlab for more information.


St John Ambulance Australia
www.stjohnvic.com.au

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Image courtesy of USAG-Humphreys under CC-BY-2.0

www.SafetySolutions.net.au

APRIL/MAY 2016 - SAFETY SOLUTIONS 45
When boutique winery Ocean Eight decided to retire its 30-year-old ‘relic’ of a forklift, it turned to Toyota to build a customised replacement to meet its material handling needs.

Mike Aylward, general manager and winemaker, said Ocean Eight’s forklift is used for general warehouse duties but takes on a more demanding and critical role during harvesting at the vineyard, which is situated on Victoria’s Mornington Peninsula.

“The forklift is very much used in the processing side of our winery. Fruit is delivered in 500 kg bins, which the forklift lifts and then rotates into our grape press or grape destemmer. As we process around 90 tonnes of fruit a year, it is vital we have a reliable forklift doing this work,” said Aylward.

“We only get one crack at it, and when the grapes are ready to be harvested they must come off straight away. There is no time to waste when making high-quality wine.”

Where previously carrying out these two tasks meant a time-consuming process of attaching or detaching the bin tipper, the new Toyota 8FBN25 8-Series battery-electric forklift has been fitted with a custom-built attachment that delivers significant benefits in the busy harvesting season.

Toyota Material Handling Australia (TMHA) engineers created a quick-release mechanism for the bin tipper attachment, so the forklift retains its full range of features with the attachment on or off.

“This adaptability is a real plus when we are in the heat of harvest,” Aylward said.

TMHA Melbourne Area Sales Manager Grant Owen said the custom-made forklift has improved efficiencies at the winery since it was previously a difficult process to swap between the bin tipper and normal forklift duties.

“By being able to quickly remove the bin tipper they’ve increased the forklift’s capacity from 1.3 to 2.3 tonnes, so they’re very happy that they can now get the full range of uses they need from their forklift,” said Owen.

Toyota Material Handling Australia Pty Ltd
www.toyotamaterialhandling.com.au

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**CASE STUDY**

Winery increases fruits of labour with custom-built forklift

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**ANTI-VIBRATION GLOVES**

with CUT 5 protection

Do you have muscle fatigue in your hands, fingers and wrists after working with power tools such as chain saws, brush cutters, drills and the like?

It is time to try the XSHOCK Anti-Vibration Gloves (AVG).

The XSHOCK AVG has been field tested in Australia with users agreeing that the XSHOCK AVG significantly absorb vibrations from mechanical vibrators as used in pouring concrete.

**FEATURES**

- Unique design of the gel absorbing ribs
- Robust 5.5mm x 0.1mm gel pads
- Strategic positioning of the gel ribs
- Durable nitrile polymer coating
- Cut 5 protection
- Abrasive, tear and puncture resistant
- Comfortable, breathable and flexible

**CUT 5 RESISTANT GLOVE**

**NITRILE POLYMER COATING**

**TESTED and PROVEN**


Independent test results confirm that the XSHOCK AVG dampen vibrations in the frequency range of 25 Hz to 1250 Hz.

The XSHOCK AVG has also been tested to EN388 with a top line score of in each of the mechanical risk ratings as follows:

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<tr>
<th>RESISTANCE</th>
<th>Level 4</th>
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Good communications, prompt action and the right medication made the difference between life and death when a pest control contractor in New Zealand came into conflict with a swarm of angry wasps.

On a dry morning in the rolling Southland hills above the Mataura River in New Zealand, contract trappers Nathan and Stephen were getting ready for a lunch break. They'd spent a productive few hours setting possum traps for the TBfree pest control program for Contract Wild Animal Control (CWAC) on Department of Conservation land at Mokoreta. They were looking forward to a cold drink and a sandwich before the day got too hot.

The incident that followed tested the standard emergency response guidelines and prompted a reissue of the fact sheet First Aid in the Field by primary services not-for-profit company OSPRI, which manages the TBfree and NAIT programs. The organisation also produces guidelines and information sheets to help contractors do their important work safely and efficiently.

Nathan inadvertently dropped a bundle of possum traps on top of a wasp nest, and he quickly became the target of an attack by the disturbed residents. He was stung many times, all over his body, and within minutes started feeling a tingling in his hands and arms.

His trapping partner, Stephen, said later that although he was uncomfortable and hurt by the stings, he was walking all right and his talking was fine. But the tingling wasn't getting better and, rather than press on, Stephen phoned for help from Terry, another contractor who was out working on the same block. They agreed that the pair should stop work and start heading out of the bush to get help. Nathan's hands and legs had started to swell, and he was disoriented, having trouble swallowing and becoming incoherent.

It took about an hour to get to open ground 800 m away. Stephen had to lift Nathan over the fence, and he phoned for help at 2 pm. Back at CWAC Team Camp in Wyndham, owner Adrian Gutsell fielded the call and immediately headed out to help, along with Ernie Mason. They were carrying the syringe and ampoule of injectable adrenaline that is standard equipment in their company trucks. All personnel are trained in their use for just such an emergency. Back at the company office in Te Anau, Esther Kinsey got the emergency services dispatched and kept the lines of communication open.

Stephen updated the team on Nathan's condition, and it wasn't good: Nathan was curled in the recovery position, struggling to breathe and Stephen was working to keep his airway open. Adrian called Lyndon Dyens, the Southland TBfree supervisor, to notify him of incident. When the team got to Nathan at about 2.30 pm, Ernie was able to administer half an ampoule of adrenaline, so they could get him down the road to a farmhouse, where a helicopter was able to land and evacuate the patient.

Ambulance personnel, the helicopter pilot and the local police were concerned about Nathan's condition. He was loaded into the helicopter and flown to Invercargill hospital for heart monitoring (due to adrenaline use) and in case of any possible relapse. His condition deteriorated on the way to the hospital and he needed further treatment. Esther tried to contact Nathan's next of kin about the emergency and left a message for them to call as soon as they could.

She was able to speak to Nathan in hospital at 4.30 pm, and it was good news. He was stable and being monitored. The message had got through to his partner, and she was on the way to see him. The team's good decisions and prompt action had saved Nathan's life.

At a team debrief back at the team's base in Wyndham, senior ambulance staff praised the team's support, saying the administration of adrenaline was critical in achieving the best outcome. Their familiarity with the right response to a wasp-sting emergency and their access to the right equipment meant they were properly prepared when they most needed to be. One of Esther's immediate actions was to order more adrenaline kits so that all staff could carry them at all times — a win for everyone's health and safety, and the best imaginable result for Nathan and his family.

To download the fact sheet First Aid in the Field, visit ospri.co.nz.

As with all content published, readers are advised to perform a thorough risk assessment and seek qualified professional and medical advice before using any equipment or procedures.
FIRST AID FOR MENTAL HEALTH

REDDUCING THE IMPACT OF MENTAL HEALTH ISSUES IN THE WORKPLACE

Increasingly, Mental Health First Aid is recognised as an equally important part of workplace health and safety along with physical first aid training. Providing early intervention and support at work can reduce the impact of mental health issues.

It has been estimated that untreated mental health issues cost Australian workplaces $10.9 billion in lost productivity each year. There also appears to be a wide lack of knowledge and understanding when it comes to dealing with mental health issues in the workplace.

Workplace health and safety first aid has come a long way since the days of a medicine cabinet with a bottle of antiseptic and a package of bandages — Red Cross is now offering mental health workshops for the workplace.

Red Cross trainer Anthony Cameron said mental health training is as equally important as traditional first aid training. “Mental illness is statistically very common and with people spending so much time at work it is likely a person may display warning signs at work.”

With this in mind, Red Cross has developed a suite of training workshops called Mental Health Matters designed to help employees and management cope with mental health issues and create mentally healthy workplaces.

As the Workplace Health and Safety Coordinator for QBE Australia, Michelle Delantar recognised the importance of learning more about mental health issues in the workplace. Therefore, she looked into the accredited training in Mental Health First Aid offered by Red Cross Training Services, which QBE began partnership with in 2014 for the delivery of first aid training.

“Never assume to know what people in your workplace want,” said Delantar. “We invited Red Cross to run information sessions on mental health awareness in our offices nationally and received great feedback from all levels of our staff. We are now looking to run one-day courses in mental health in the workplace.” Whether personal or work related, everyone responds to stress and challenges differently. The ability to cope and the level of resilience will also vary. A workforce that has a healthy sense of self-esteem and wellbeing can help to minimise absenteeism, loss of productivity, reduced team cohesion and error rates.

Stigmatising attitudes towards mental illness may prevent people from seeking help early. “Learning more about mental health and having the skills to provide early intervention and support is just one part of the bigger picture,” said Delantar.

“At QBE we want to see the stigma removed and encourage open discussion by providing a safe environment, which is a great result for everyone.”

“Research shows that more than six million working days are lost every year in Australia due to mental illness,” said Cameron. “Creating a mentally healthy workplace leads to less absenteeism, better creativity and productivity, as well as improved physical health.”

A PricewaterhouseCoopers (PwC) report explains that businesses that invest in positive mental health practices are more likely to see reduced illness in the workplace and teams that perform and thrive, returning an average of $2.30 for every $1 spent on mental health training.

Red Cross recommends that all workplaces include Mental Health Matters workshops as part of their workplace health and safety strategies.

For more information about Red Cross Training Services courses, visit redcross.org.au/firstaid or call 1300 367 428.

1PricewaterhouseCoopers (PwC), Creating a mentally healthy workplace — Return on investment analysis, March 2014.
MachineSAFE training calendar now available for 2016

Pilz has released its MachineSAFE training calendar for 2016 with relevant training courses for industry being held across most major cities in Australia.

The training sessions are designed to help key personnel understand the duties, obligations and responsibilities under various regulations and standards, and to implement compliance, safety strategies and designs.

Due to high interest and a high level of expertise required, Pilz has developed dedicated training for:

- Risk assessment
- CE marking

The Risk Assessment Workshop training course will enable attendees to develop a greater understanding of the risk assessment process in order to acquire the extensive knowledge and skills needed to risk assess machinery in accordance with AS/NZ 4024.1. This workshop uses images and videos to guide attendees through the risk assessment process on machinery in an interactive and practically based way.

The CE Marking training course will help attendees learn all the requirements for Machinery Directive 2006/42/EC, including CE marking of machines. The course also covers the corresponding standards, which refer to the design, construction and maintenance of machines placed on the market and operated within the European Economic Area.

In-house or customised courses to cater to specific needs such as conveyor safety, lockout/tagout, risk assessment, machine guarding and safety control system design are also available. To learn more call 1300 723 334, email training@machinesafe.com.au or visit www.machinesafe.com.au.

Industry professionals from Workplace Health & Safety (WHS) across diverse industries are invited to attend the Safety in Action exhibition at the Perth Convention and Exhibition Centre from 1–2 June 2016.

The only workplace safety event in Western Australia with a focus on the entire safety industry, the two-day show will feature a free exhibition alongside a safety seminar series.

Mental health and wellness will be a major focus during this year’s event, with key speakers and topics including:

- Adrian Manessis (Business Development Manager, Myosh), who will speak on how to manage and improve work safety with software tools;
- Michael Tooma and Nicholas Beech (Partner & Special Counsel, Clyde & Co Australia), who will discuss the legality behind OHS/WHS psychological risk for large businesses as well as the microskills and communication skills needed to approach psychological injury;
- Alistair Schuback (Safety Culture Specialist, Aframes Safety), who will talk about high-performance thinking strategies to achieve zero harm.

Together with interactive discussion panels, Q&A sessions and industry case studies, Safety in Action Perth 2016 is expected to be an unmissable learning experience for all OHS and WHS professionals, as well as anyone with an interest in workplace safety.

The event will offer attendees an opportunity to learn, network, view the latest safety products and innovations on the market and to discuss current regulations, trends and developments affecting industry.

The event is free to attend and open to anyone involved in workplace safety. Sydney will host the national Safety in Action exhibition from 6–8 September 2016.

Event details
What: Safety in Action Perth
Where: Perth Convention and Exhibition Centre
When: Wednesday 1 June, 9 am–4 pm; Thursday 2 June, 9 am–4 pm
Register: www.safetyinaction.net.au/perth
Are Australian workplaces in safe hands?

A recently published report on hand injuries in Australian workplaces, In Safe Hands: The State of Hand Protection in Australia 2016, has revealed that more than one-third of Australian companies are unaware of how much hand injuries are costing their business. It also reveals that Australia’s safety leaders remain divided over the best way to measure performance, but agree that cultural change is the key to improving worker safety and wellbeing.

The research was undertaken in response to the Australian safety community’s need for benchmarking data about safety performance and best practices within the Australian Occupational Health and Safety (OHS)/Work Health and Safety (WHS) industry. The independent research company AMR carried out the survey in conjunction with the National Safety Council of Australia (NSCA) Foundation and Ansell.

A survey was carried out across 17 different industries. It included small employers of 24 people up to organisations with more than 100 employees. The objectives were to evaluate current safety practices and procedures; the measurement and rating of hand injuries; the cost of hand injuries; and a review of which best practices have been implemented.

AMR collected data over a period of five months and interviewed more than 200 members of the Australian safety community.

Key findings emerged as a result of the survey:

- 73% of organisations indicated safety performance has improved year-on-year.
- 75% of organisations measure lagging indicators such as LTI’s (complete day or shift time loss) and MTLs (medical treatment injuries) and other lost time, while 73% measure leading indicators such as training hours and near hit reports.
- 93% of organisations reported injuries to hands, with cuts (64%) abrasion (44%) and impact (42%) being the most common.

Responses clearly showed an ongoing debate between leading versus lagging indicators. Many respondents pointed to time constraints, reduced resources and cost-cutting by management as the primary challenge in managing safety.

Commenting on the findings of the report, Jamie Burrage, NSCA Foundation general manager, said it was interesting to note the value placed on an effective safety culture and employee engagement through coaching and mentoring, rather than a top-down prescriptive approach to safety at work.

“Many respondents identified the emerging new practice of mentoring to influence behavioural change as less useful. There appears to be a conflict in how senior management views the effectiveness of mentoring compared to the view of other management levels and workers,” he said.

“Mental health is identified by some as the biggest challenge for the future workforce — there is a need to examine the circular nature of ever-changing workplaces and fluid work culture to gauge the cause of mental health concerns at work. Employers may also need guidance in how to enhance the resilience of workers to manage these concerns,” Burrage said.

Ansell Marketing Manager Dean Clark said the report highlights the difficulty faced by safety leaders in building safety performance and compliance that meets their commercial obligations when they don’t have a complete picture of the cost of injuries.

“Comments from respondents show significant differences in the level of understanding about the true cost of injury to businesses. When you consider the research was conducted across industries where safety is a key consideration, this shows a need for better education in addressing the costs of hand injuries by taking into account measuring costs of treatment, workers compensation, loss of productivity, retraining and insurance premiums.”

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- Engineer - Process
- Engineer - Project
- OHS/EHS
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- Quality Assurance
- Sales/Marketing
- Student-Undergraduate/Apprentice
- Technical Officer
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- Emergency Services/Law Enforcement/Security
- Engineering Services
- Environmental Services
- Finance/Banking/Insurance/Legal
- Government
- Health/Medical
- Hospitality
- Information Technology
- Instrumentalities (eg CSIRO)
- Laboratory - Analytical
- Laboratory - Clinical/Medical
- Laboratory - Life Sciences
- Logistics/Transport/Warehouse
- Manufacturing
- Mining
- Oil/Gas/Coal
- Packaging
- Processing
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- Safety/Hygiene
- Service/Maintenance
- Telecommunication
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