



A stairway to safety

Such interest has been ascribed by the A+A to an increased interest in safety and security matters in general, both in terms of natural and man-made disasters. While this is no doubt true, some visitors, however, may have caught a slight air of desperation, as if the tightening of budgets, purse strings and belts was causing some unexpected side effects.

Notwithstanding this, *Industrial Fire Journal* was there to see what was “hot” at a show that certainly did not disappoint.

The beginning of the end for cotton?

One innovation being announced on the TenCate stand – the global Dutch fabric manufacturer – seemed to perfectly capture the spirit of the times: an innovation in its multi-protective safety fabrics (Tecasafe range), which aims to prolong the life-time of the protective garment – something that could also positively impact on the bottom line of buyers and users.

Tecasafe as a range has been developed for industrial sectors where users require protection from a variety of hazards, including heat, flame, electric arc, welding, static electricity, and chemicals.

The news is that TenCate is replacing the cotton fibre in its 10-year-old Tecasafe range with cellulosic fibres ie fibres derived from cellulose (wood pulp or cotton linters). The first fabric to include the cellulosic fibre is the Tecasafe XL 9300 (300g/m²), an inherently FR fabric that is also available in high vis yellow.

Cellulosic fibres are stronger than cotton fibres and they also retain their colour better than cotton, which means that the next generation of Tecasafe garments will be more durable while retaining their appearance. Ramon Overdijk from TenCate explained that most multi-protective garments contained cotton modacrylic mixes, and with usage stressed areas such as seams would begin to “whiten” – this will not occur, he emphasised, with cellulosic fibres. “We did a comparison test after 40 washes and the cellulosic version looks magnificent.”

This use of cellulosic fibre (a first in Europe for this type of application) is expected to raise a few eyebrows in the workwear rental market (ie laundries), as well as in heavy industrial markets such as utilities, chemical, petrochem, and refineries – all traditional sectors for TenCate. “We really see this development as taking over from the current Tecasafe range, but for 2010 the two types of fabrics will co-exist alongside each other. In the future we’ll launch a 250g/m² version and later perhaps even a shirt fabric,” concluded Overdijk.

A record 55,800 visitors attended the A+A show in Dusseldorf recently, not bad in these trying times, especially when considering the organisers’ remarks that a growing attendance was from non-European countries. One in four visitors came from outside Germany, visiting some 1,500 exhibitors from 62 countries.

Head protection that’s light as a feather

A new European standard for firefighters’ helmets has encouraged a flurry of new helmet launches, and the buzzword here is “lightweight”. As is the case with much PPE, technology has easily outpaced safety standards’ requirements, resulting in comfort becoming a significant competitive characteristic.

Kentucky company Bullard is one such company, showing off its Magma prototype helmet that currently weighs in at an ephemeral 1.3 kg. The company’s Stefan Römer explained that he was confident that production on the hand-made, resin and glass fibre helmet would begin in January for a preproduction series. Serial production will start in March 2010. “It is so light that we envisage it being useful not only for firefighting but also for rescue incidents.”



At A+A: Haws’ AXION MSRTM system, winner of the Innovative Product of the Year award at the Expo Protection 2008 Conference in Paris. Its groundbreaking design irrigates the eye by driving contaminants away from the tear duct.

ALTAIR 4X multigas sensor with XCell Sensor technology from MSA. Photo: Rene Tillmann/ Messe Dusseldorf.



The Magma will be available in two sizes (full and half size), with a luxury version also available in both, with an enhanced number of accessories. Although it has initially been aimed at the European market, the shell can be restyled for North America.

The sizing is controlled by an inner ratchet (which goes down to the size of a child's head and up to size 65), meaning it will fit all heads. And what's more, Bullard is offering a 15-year guarantee on the shell (under "normal conditions").

German manufacturer Dräger, not to be outdone, was also launching the lightest helmet in the market (approx 1,400 gms), the HPS 6200. A company representative explained that the new helmet (available in a number of colours including a fluorescent version) had been developed to conform to the latest EN norm, EN 443: 2008, which stipulates higher requirements on heat and impact resistance.

The helmet is also the first Dräger helmet to be manufactured in-house, in a joint venture between Dräger Safety and Paul Busch, the managing director of Busch Helmets.

Trelleborg's Trelchem evo is the ultimate in hazmat protection, explained Ann Sofie Thungren.

Breathing easy – CCBA goes electronic

While traditional SCBA limits response to 70-80 minutes, CCBA (closed circuit breathing apparatus) can go for as long as four hours thanks to the CO₂ scrubber inside the equipment that recycles all exhaled air.



Dräger Product Specialist Gerd Mingels provided an insightful picture of the origins of such technology, as a precursor to the latest developments therein. It turns out Dräger CCBA was invented before SCBA, and was developed in 1903 for the mining industry. "In the 50s compressed air was invented and everyone jumped on that technology. But after 9/11 people are now thinking about situations which may require longer firefighting time, three or four hours, especially if it involves underground firefighting. "CERN in Switzerland has similar CCBA, but theirs are more like escape sets, which gives them 60 minutes if running, or four hours if awaiting rescue."

Mingels revealed the launch of a new fully electronic gauge for the CCBA, as well as the addition of a new cooling system which allows the use of cooling gel as opposed to ice, for reducing the inhalation temperature. the carbon scrubber.

The new electronic gauge provides pressure readings in bar, as well as a graph that simulates the pointer on a chemical gauge. A microprocessor also dynamically calculates the oxygen consumed. An optical and acoustic alarm warns of low oxygen pressure, and a different sound alerts on man down incidents.

As well as interest for underground usage, large sea vessels, and marine ports, Dräger has also had interest from the other extreme – high rise buildings: "Because if you have to walk to the 35th floor, you will have emptied your cylinder half way up on a BA set"

Oxymoron: affordable thermal imaging camera?

TICs are a precious resource and in many cases fortunate is the brigade that can afford one, let alone two. Bullard has launched a TIC that doesn't have the full blown sophisticated features of a normal TIC, yet has a spec high enough to allow teams to quickly find a fallen colleague, for instance.

Launched last summer at the FDIC (Fire Department Instructors' Conference) in Indianapolis, USA, the new camera (the Eclipse) was experiencing its first introduction into Europe at the Dusseldorf show, explained Sales Manager Rolf Reckerth. "The camera itself is easy to operate and it is in black and white, basically with anything that is hot showing up as white. We can add in the future temperature reading and colourisation as optional features that can be downloaded for a fee.

"The Eclipse was developed for several applications: for firefighter rescue teams or for small fire departments that would never be able to afford a 10,000 euro TIC. This should be good enough for a first attack, and if an advanced camera is needed then one could come from a neighbouring brigade." Also as a complement to existing cameras to have more eyes in the fire and as TIC for instructors in fire training buildings.

Although Reckerth would not be drawn out on the price point of the TIC, he said it was half of the price of a standard TIC.

Easy shelter!

Putting up a tent under the impatient gaze of family members is hard enough, but what about when colleagues are watching, let alone real casualties? The answer, says Mike Hall of UK company Hughes Safety Showers, is a rigid frame shelter that two people can put up in two to three minutes – in other words, a HARD (Hughes Articulating Rapid Deployment) shelter.

The new shelter consists of a folding frame, groundsheet, weather skirts, guy lines, easy-lift carry valise, and an outer cover attached to the frame. The shelter can be set up for a variety of uses, including emergency services response; military; humanitarian relief; or general purpose. "We think the market is moving towards a rigid frame construction – although we still do offer an inflatable product. Rigid frames are regarded as being more robust and quicker to assemble, and they do not need re-inflating," commented Hall.

Shelters can also be linked together to create additional spaces, and with interchangeable liners it is possible to switch between decontamination, forensic examination, command and control and field mortuary applications.

Taking the headache out of gas detection

"Don't buy gas detectors!" said the signs on this stand, but hold on, this stand belongs to Industrial Scientific, the company that calls itself "the gas detector people". What could it mean? Intrigued, IFJ went over to find out more.

Fortunately Dortmund-based Peter Osterholz was on hand to explain more, and the answer is iNet, a service that provides a method of keeping gas detectors working 24/7 without the associated headaches related with onerous in-house maintenance.

In the iNet world, monitors are connected to a server which in turn talks with an iNet server in Pittsburgh. The iNet server remotely monitors for problems, keeps track of bump tests and calibrations, and in the case that a gas detector is defective (or soon will be) then the problem is recorded and a new detector delivered within two days, minus any intervention from the maintenance



department. "And when all is ok you receive a weekly report that says so, outlining all the bump tests carried out throughout the day, as well as when each detector has been calibrated in accordance to your schedule or philosophy," added Osterholz.

The service runs over a period of 48 months, with a monthly payment per instrument. "Furthermore, as an iNet user you can receive a complete report on portable gas detectors, saying how many alarms have taken place, for which gases, at what exact concentration, how often in the field, and so on. And we can program for different applications, from fire brigades to oil and gas, chemical, and waste water treatment"

Today iNet has around 1,200 contracts worldwide, with 20,000 instruments on the iNet. "It is well established in the US, and in Europe and Germany we are now starting more and more. People are attracted by the easy handling, because the servicing of gas detection instruments is not the core function of most companies."

The ultimate hazmat protection

Some nice Swedish people on the Trelleborg stand were looking very pleased with themselves, and not surprisingly considering what they had to offer. The "Trellchem evo" is being marketed as a unique, reusable and all-inclusive single-skin chemical protective suit, and close inspection of the evo's certification speaks for itself (and should appeal to any hazmat response team):

- EN 943:1, EN 943:2, NFPA 1991-2005 (including optional chemical flash fire and liquified gas protection)
- Anti-static to EN 1149-5
- Superior flex resistance (class 6 of EN 943, to over 100,000 test cycles).

Key features include protection from chemical warfare, chemical flash fire, and liquified gas.



The Eclipse TIC has been developed by Bullard as an affordable option. Centre: IFJ's very own Advertisement Manager Kelly Francis tries on Bullard's prototype helmet, the Magma.

Trelleborg's Ann Sofie Thungren explained that this suit is the first truly re-usable single skin suit that is certified to NFPA 1991:2005 and EN 943: 1&2. She added that its durability and extreme multi-protection characteristic will change the way hazmat professionals and first responders think about their PPE.

A gas sensor or a new German car?

The Audi Quattro was the first rally car to enjoy four-wheel drive in competitive driving in the 80s, and later the term was used to refer to all Audi's four-wheel cars (but with a lower case "q"). The GasAlertQuattro launched by BW Technologies is not a car, but it certainly packs a technology punch.

The GasAlertQuattro has been developed to replace the GasAlertMicro which has had a significant presence in the multigas monitor market for the last seven years.

Available as single gas units up to a maximum of four gases, it is available with Drycell or rechargeable batteries, and is suitable for confined space entry operations.

Features of the GasAlert Quattro gas detector include:

- One-button operation
- Option for a vehicle power adaptor and vehicle attachment
- Ready for use at all times
- Compatible with BW's MicroDock II automatic test and calibration system
- A handy carrying holster
- A 360 degrees swivel clip.

Robot to make debut in China

This little chap will soon be arriving in China, courtesy of John and Fiona Ryland of Ryland Research Ltd.

The Firemote robot was displayed at the Emergency Services Show in Stoneleigh Park (UK), in November, where its creators explained that the Chinese ROV (remotely operated vehicle) featured an explosimeter to detect poisonous and potentially explosive gases, a thermal imaging camera, and also a bi-directional COFDM control and video system (Coded Orthogonal Frequency Division Multiplexing, a superior transmission technology if you must know).

Getting this far has not been easy though, explained John Ryland. "Getting from the R&D to the commercial phase is not a quick process, held back by lack of funds in the fire and rescue services, and an industry sector lacking the incentive to invest in equipment that would only be deployed in rare events, unless forced to do so by the insurance companies."

The company has also supplied two Securotracks to Thales for the MOD (UK Ministry of Defence) Grand Challenge in 2008, featuring a TIC, a comms system, and a GPS and LIDAR-based autonomous guidance system.

