STAY SAFE
Fire detection systems
Securing premises
FIREX preview
Contributors

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New dimension (p34)
Jonathan is general manager for global sales at Kentec, where he heads up the company’s business development team. He has more than 16 years’ fire industry experience in both the technical and business side of the sector. For more information on Kentec, visit www.kentec.co.uk or visit stand E120 at FIREX International.

Eden Gray
Core problems (p28)
Eden is the marketing and PR executive at Evac+Chair. She recently graduated from Birmingham City University with a degree in marketing, advertising and public relations. For more information on Evac+Chair, please visit www.evacchair.co.uk

Tony Hanley
Cabinet reshuffle (p47)
Tony is a director of Firepro UK Ltd and is also chairman and CEO of Titan Fire and Security. He is a board member of the Fire Industry Association and a volunteer business mentor for the Prince’s Trust. FirePro UK is the officially licensed distributor for the supply and engineering support of the FirePro condensed aerosol fire suppression system. For more information, visit www.fireprouk.com

Mike Jay
Get smart (p54)
Mike is the convenor of the RISCAuthority security group. He previously managed the FPA’s Risk Management Services (RMS) operation, which he helped set up in 2002. RMS supplies independent property and casualty survey and risk improvement services to a range of insurance companies, including the very biggest global players, and in the summer of 2008, RMS completed its 10,000th assignment.

Birgitte Messerschmidt
Sustainable construction (p44)
Birgitte is public affairs manager for fire safety at Rockwool International A/S, leading the Rockwool Group’s advocacy work on fire safety globally. She has worked for more than 20 years in fire safety of construction products and is now using her knowledge to bring attention to fire safety and the potential risks that arise if the right product is not used for the right application.

Warren Moyle
Think twice (p41)
Warren joined Apollo in 1988 as a production operative and since then has progressed through the company to his current role as senior product support engineer. He is responsible for product training, in which his 20 plus years of experience and vast product knowledge are invaluable in supporting customers and Apollo employees.

Ray Puttock
Radio wave (p31)
Ray is director of marketing for EMS Ltd and has over 25 years’ experience in the fire industry with both large and independent companies. He will be speaking at the FIREX Lecture Theatre, as well as the Safety and Health Expo Lecture Theatre, on 22 June – on the subject of utilising the power of wireless.

Sven Sievers
Storage wars (p51)
Sven is head of division, product management and marketing, at Aseco, which is the leading German manufacturer of highly-insulated safety storage cabinets for flammables. Aseco cabinets are built according to European and American standards, and can be integrated into casework or used as free-standing storage solutions. For more information, visit www.asecos.co.uk

Warren Spencer
Weighing up the law (p16)
A specialist in fire safety law, Warren is managing director and fire safety solicitor at Blackhurst Budd Solicitors. He currently prosecutes for Lancashire, Greater Manchester, Cumbria, Cheshire, Merseyside, and Hereford and Worcester Fire and Rescue Services. Warren also provides fire safety legal training to a range of public and private sector groups.

Dr Daniel Waldron
Beam with pride (p24)
Dan is product manager at FFE Limited, having joined the company in 2011. He established the research engineering function at FFE, which seeks to develop new types of fire detection, improve existing product lines and supply the company as a whole with accurate information to improve decision making. Dan holds a PhD in chemistry (instrumentation design) with experience in the development of new devices in the life safety and life science sectors.
Cabinet reshuffle

Cabinet fires demand special approaches and Tony Hanley recounts how a new engineered solution was tailored for a hospital suffering the disruptive effects of fire on a mission critical piece of equipment.

Whether located internally or externally, cabinet fires remain a significant risk to the resilience of mission critical machinery or enclosures in any business or public service. This risk may be reduced by employing special engineering control measures such as dedicated power supplies, special enclosures and even physical security.

Irrespective of the external measures employed, whenever a source of ignition and combustible material co-exist within the same cabinet, a fire within an enclosure – no matter how small – remains a significant threat if what is inside is critical to the operation of the premises or its purpose. Therefore, the protection of such cabinets or spaces may also be deemed critical in order to minimise the threat of outbreak of fire, its escalation and the consequential events that may be avoided by using internal early warning detection of fire and rapidly deployed fire suppression.

Hospital fire event

In this context, about a year ago one UK NHS Trust suffered the loss of a mission critical sterilisation machine caused by internal fire, which makes an interesting case study. The machine itself was one in a bank of three, each of which provides two sterilisation cleaning facilities.

To meet the hospital’s demands, the machines are in use constantly to sterilise medical equipment for the provision of patient care services. Each sterilisation machine is finished in stainless steel, with operator controls and utensils access only at the front – rather like a large microwave. There is no other access to the machine unless special tools are used to remove the external access panels. In plain terms, the machines are likened to an industrial dishwash, but they operate at an extremely high temperature with highly concentrated chemicals and extremely sophisticated automatic cleaning processes.

The fire was discovered when black smoke was seen coming out of the top of the machine. Staff activated the hospital fire alarm manually and the hospital wing evacuated. Attempts were made to manually extinguish the fire using portable CO₂ extinguishers, but these proved ineffective as the access panels could not be removed without the special tools.

The fire and rescue service attended rapidly and subsequently extinguished the fire by safely isolating the machine supply and deploying a significant quantity of water.

Significant disruption to the hospital was caused by the evacuation of the wing, the total loss of the sterilisation machine and subsequent patient care services, as well as the post-event clean-up.
redecorating and reinstatement of the room in which the fire occurred and also two floors below the incident.

**Future risk prevention**

Prior to commissioning the replacement sterilisation machine that was installed, FirePro UK Ltd was asked what could be done to minimise any repeat event in the future to head off such disastrous consequences. The company offers collaborative fire systems technology to meet challenging risks and applications to a fully trained network of independent BAFE SP203 or LPS 1014 third party certificated fire systems engineering businesses, located throughout the UK.

The company supplies a condensed aerosol fire suppression system in modular sizes, enabling protection against a number of risk types and risk sizes in spaces from the tiniest to the largest. It distributes the FirePro product to a fully trained and certificated network of engineering businesses throughout the UK.

A number of other features complement the modularity of the system, enabling it to function with most types and makes of early warning fire detection ranging from aspirating systems, linear heat detection and conventional smoke detection to even ultra-violet flame detection.

For in-cabinet protection, the system provides a very simple 'one shot' and fully monitored local control panel, the FPC2, built by Kentec UK. This control panel takes a monitored 24VDC power supply input – this may include external battery back-up – and is equipped as standard with a fault monitored, open-circuit detection line in, which takes a fire signal from the most suited form of early warning detection for the application. Four fully monitored trigger outputs activate up to four locally mounted modular units and ancillary contacts for remote signalling.

**Special agent**

In conjunction with an approved local installer, the company tabled a bespoke engineered solution for the protection of not only the replacement machine, but the existing two machines also. It was decided that the most appropriate method to provide early warning of fire within the machine was to use linear heat detection (68°C), as linear heat detection cable may be liberally installed at low cost to cover all parts of the machine internally, including control gear, printed circuit boards, power supplies and solenoids.

With the early warning detection all set, the next engineered system component to organise was the actual fire suppression agent. Bearing in mind the system's modularity and knowing the net cubic capacity of the internal cabinet requiring the protection, it was determined that the internal risk would be adequately protected by installing two FPS00 (500gm) FirePro units, this being the correct amount of condensed aerosol agent required for the internal space within the enclosure.

The selected product extinguishes fire by causing a chemical reaction at molecular level.

As it is not a pressurised gas system, storage in pressurised cylinders is not required. The units are mounted internally, saving space, and the end user benefits from lower costs, speed of installation, a 15-year independently certificated life expectancy, and performance certified by a number of test laboratories against recognised standards, including Underwriters Laboratories (USA & Canada), BSI and KIWA, Netherlands. Furthermore, the system is certified as a green product with zero ozone depletion/global warming potential.

After early warning detection and fire suppression were installed, it was important to ensure that in the event of a fire being detected, the fire suppression agent would be immediately released. In addition, via dedicated external interface relays, it was essential to make sure that, in common with any fire signal, the system would immediately a) interrupt the power supply to the machine, b) signal the closure of all local fire doors, c) signal to the building management system, which would stop all local plant including air conditioning, and d) signal to the house fire alarm system for alert, and fire and rescue automatic attendance, via the appointed alarm receiving centre.

This was all simply achieved by using the local on board signal relays from the FPC2, which in turn were connected to control dedicated, isolatable, secondary signal relays configured externally to the respective signal destinations. This included full fault monitoring outputs for fire detection system mains power or battery fail, open or short circuit on the detection line and all circuits serving the FirePro units. A local lamp/buzzer key switch system isolate facility was also installed to enable periodic maintenance within the machine by others.

**Second incident**

They say that lightning doesn’t strike twice, however, a second fire incident in the replacement machine did occur within less than seven months of the installation. What happened
subsequently was significantly different to the first incident.

When a repeat machine malfunction took place and the internal temperature significantly increased, it caused the activation of the internal automatic linear heat detection. In turn, this immediately a) internally discharged the two local fire suppression units, b) cut the power supply to the machine, c) closed local fire doors, d) shut off local plant including air conditioning, and e) signalled the house fire alarm, which in turn called the local fire service.

On arrival, there was no fire for the fire and rescue service to deal with as it had already been automatically extinguished by the system.

FirePro is deployed by electrical signal and has no cylinders or pipework. Therefore, whether designed for use in a cabinet or room flood, it does not share the same design criticality as, say, pressurised gases for enclosures with poor enclosure integrity and thus offers suitability (subject to survey) for areas where agent leakage may occur.

In contrast to the previous identical fire event, the fire and rescue service only attended post event to ensure the area was safe for re-occupation, check the status of the machine and surrounding areas, and naturally vent the room by opening the windows. Post fire smoke damage was minimal and the room was back in service as soon as the remaining machines were deemed fit to be put back into operation the next day.

Labour to redeploy the spent FirePro units was available the following day, as were the units themselves, minimising down time. Redeployment and re-commissioning may have taken significantly longer if they had been spent gas cylinders – unless reserves were installed.

Both the fire and rescue service and the hospital chief engineer expressed their satisfaction as the engineered fixed internal fire detection and automatic fire suppression system had operated exactly as intended. It enabled the immediate pinpointing of both the room and the machine with the fire, which minimised the loss of critical patient care services; the financial loss of a replacement machine, unnecessary deployment of fire service resources and post fire damage clean-up. In total, the cost to the client was less than £8k fully installed.

This type of system has been used for in-cabinet risk applications including large and small Kardex machinery, process control machinery, plant equipment, riser protection and switchgear in the telecoms, power, distribution, motor racing and general motor manufacturing, power distribution, rail and marine industries.

Tony Hanley is managing director of FirePro UK Ltd. For more information, view page 5.
Wireless for any system is this summer’s message from EMS. Celebrating 50 years of wireless innovation and UK development, EMS will be showcasing its FireCell Hybrid Generation 2 fire detection platform. This includes wireless gateways for specific protocols as well as a universal version which can be used with virtually any fire system, making hybrid solutions seamless and now even easier to design and install.

This pioneering communications and remote services platform will be demonstrated at FIREX, showing how the future of fire system installation and service will be transformed, and how other site services might be integrated into a much wider and more informative solution. For more information, visit www.emsgroup.co.uk

FFE will be showcasing its Talentum flame detectors, which have been chosen to protect the Bloodhound SSC and its driver. There will be a full-sized replica of the car on its stand, showing where they have been installed and how they work. The Bloodhound SSC will aim to break the 1,000 mph land speed record next year.

In addition, FFE will be displaying its soon-to-be-launched explosion-proof FireRay 3000G, an optical beam smoke detector, designed for use in potentially explosive atmospheres such as large enclosures in oil rigs, refineries and ordnance stores.

Also on display will be the FireRay range of motorised, auto-aligning and end-to-end optical beam smoke detectors. You can learn more about FFE at www.ffeuk.com

FirePro designs and manufactures flexible, efficient and effective eco-friendly fire suppression systems. Its products are tested and certificated according to the most stringent international standards and requirements.

With no distribution pipework or pressurised cylinders, the advantage in speed of installation and end user cost of ownership of these systems is unparalleled and without detriment to their fire extinguishing capabilities.

FirePro is flexible enough to fit in-cabinet to protect mission critical assets or may be used in room flood applications for varying risks, including diesel generator enclosures. As such, it can protect lives and assets while caring for the environment and a sustainable future for humanity. Visit www.fireprouk.com

Visitors to the FPA stand will be able to find out information on its training courses, publications, technical and risk assessment services, and membership benefits.

The FPA Infozone theatre is attached to its stand and will provide an extensive programme of free educational content, addressing some of the most important issues affecting the industry.

Featuring seminars delivered by a mix of FPA experts and others equally renowned in their field, the objective of the Infozone is to provide practical advice and guidance that is relevant and of interest to visitors. Attendees at any session are eligible to receive CPD hours.

For details on how to join the FPA or for information on any of its services, please visit www.thefpa.co.uk or call 01608 812500.

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