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# AUSTRALIA Fire



WINTER 2012

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## About Fire Australia

Fire Australia is a joint publication of the Fire Protection Association Australia (FPA Australia), the Australasian Fire and Emergency Service Authorities Council (AFAC) and the Bushfire Cooperative Research Centre (Bushfire CRC).

We aim to bring the latest news, developments and technical information to the fire protection industry, emergency services and fire research organisations. Fire Australia is produced quarterly and distributed throughout Australia and New Zealand.

Letters to the editor and editorial submissions are welcome and can be sent to joseph.keller@fpaa.com.au.

For more details on submitting a contribution, please contact the editor.

Our cover: Firefighters are put through their paces at New Zealand's National Training Centre. Stage Two was officially opened in March. Image by Craig Robertson, Full Frame Photography.



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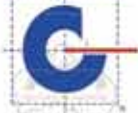
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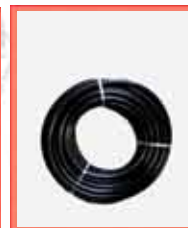
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## Welcome to *Fire Australia* Winter 2012



**By Naomi Brown**  
 Chief Executive Officer  
 Australasian Fire and Emergency Service Authorities Council (AFAC)

The annual AFAC Executive Command Forum brings together senior personnel from across Australasia to share experiences and be exposed to new ideas and people outside our industry. At this year's forum, held at the Australian Institute of Police Management, Sydney, leading UK lawyer Mark Scoggins presented on the risks and responsibilities of the emergency services and new ways of approaching legal issues. Mark has been involved in a number of high-profile court proceedings. Most notable is his work in 1999 as the leading defence in the trial of the Heathrow express tunnel collapse of 1994, among other cases. Mark is featured in this issue of *Fire Australia*.

A national project to deliver the Australian Government *Standard for the Common Alerting Protocol—Australia Profile* (CAP-AU-STD) will enhance Australia's emergency management warning systems. CAP-AU-STD will enable personnel to easily transmit emergency messages and public safety information through available technology-based

devices. The landmark project is led by the Australian Government Attorney-General's Department (AGD). It will improve messaging to special-needs populations and people from non-English speaking backgrounds through a single, text-based CAP message that can be converted into speech and transmitted over radio station networks or appear on mobile phone handsets as an SMS message. In some locations it may also have the capability to trigger the pagers of emergency service personnel, appear as text on electronic highway signs or trigger warning sirens to residents located within a precise geographic area. AFAC, represented by members of the Chief Information Officers Network, has worked with the AGD on this project.

The AFAC and Bushfire CRC Conference is again shaping up to be the premier conference for the fire and emergency services industry in Australasia. With the trade expo nearly sold out and international and national speakers of repute, I strongly urge you to register for

the conference if you have not already done so. Planning for the 2013 conference in Melbourne has begun. This will be a significant milestone for our industry as it is the 20th AFAC and 10th Bushfire CRC Conference. It is a delight to be collaborating with Bushfire CRC again to stage the pre-eminent knowledge-sharing event for the emergency services.

AFAC is continuing to work closely with the Bushfire CRC, Federal Government and State Governments on the establishment of a national Fire and Emergency Management Research Institute to follow the current Bushfire CRC, which ceases being funded by the Commonwealth at the end of June 2013. At this stage it is anticipated, however, that there will be a fourth year funded within existing resources. This time will be used primarily to finish the PhD program and carry out research utilisation work with end users. As developments in a successor to the Bushfire CRC become known they will be communicated within the industry. ■

## HazMat Conference and Exhibition 2012

HazMat has once again proven to be the premier hazardous materials conference and exhibition in Australia, with a highly successful event in 2012.

The conference and exhibition were held on 9–10 May at the Darebin Arts and Entertainment Centre in Melbourne. The event, which was sponsored by the NSW Environmental Protection Authority (EPA), brought together many well-known industry professionals from around the country.

The conference was well attended with 190 delegates and 16 major exhibitors on hand.

A keynote speech by Richard Martyn, Program Supervisor, Management Analyst and On-Scene Coordinator from the US EPA (pictured), was a conference highlight. Two preconference workshops chaired by John Frangos, Senior Toxicologist from Golder Associates and Richard Greenwood, HazMat 2012 panellist and Senior Consultant at Noel Arnold & Associates, were also highly beneficial for attendees.

The conference was again presented by the Fire Protection Association Australia (FPA Australia) and was officially opened by FPA Australia CEO Scott Williams, who called the event a major success.

“HazMat 2012 has once again proved to be the most important hazardous materials and chemical management conference of the year,” he said.

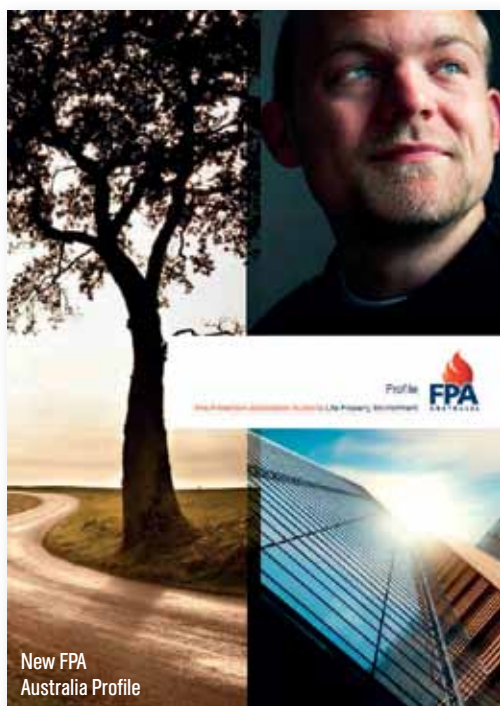
“The Association would like to thank all those who attended and everyone who assisted in delivering this highly informative event.”

“We are excited about the possibilities for HazMat 2013 and fully expect next year’s event to be even more successful than this year’s fantastic event.”

Keynote speaker  
Richard Martyn



The HazMat  
2012 exhibition



New FPA  
Australia Profile

## New membership structure

FPA Australia is pleased to announce our updated membership structure that has taken effect as of 1 July 2012.

As part of the Association’s strategic direction, the new membership framework and criteria now applies to both Organisation and Corporate categories, in order to better reflect our members and the industry. Importantly, the criteria for both Organisation and Corporate memberships have now been changed from annual company turnover to total employee numbers.

FPA Australia Organisation and Corporate members receive benefits including access to the CONNECT online resource tool, *Fire Australia* magazine, learning and development discounts, discounts on sales centre items, event entry discounts, representation on technical committees, Qantas Club discounts, educational vouchers and FPA Australia technical documents.

For full details on the new membership structure, download the new FPA Australia profile from <http://www.fpa.com.au>, or contact our friendly membership services team on 1300 731 922.

## FPA Australia Director among 2012 AFSM Recipients

FPA Australia Director and long-standing Association member William (Bill) Lea has been awarded an Australian Fire Service Medal as part of the 2012 Queen's Birthday Honours List.

Mr Lea began his firefighting career in 1979 when he joined the West Pennant Hills Bushfire Brigade where he served as Deputy Captain. He has since served with distinction across every key function of the NSW Rural Fire Service. His career also includes service with the NSW Fire Brigade.

In addition to this long history of work, Mr Lea is actively involved in the fire protection industry as both a member of FPA Australia since 2000 and a Director on the Association's Board, co-opted in 2009 and elected in 2010.

Congratulations to Bill Lea and all the 2012 AFSM Recipients:

### NEW SOUTH WALES

Mr Robert Gregory ALEXANDER  
Mr Alan Geoffrey ANDERSON  
Mr Michael William BROOKS  
Mr Wayne George BUXTON  
Mr Bruce John CAMERON  
Mr Robert Raymond CRAWFORD  
Mr Donald Norman LANGDON  
Mr William James (Bill) LEA  
Mr John Charles MacKENZIE OAM  
Mr Geoffrey William OLSEN OAM  
Mr David George PHILLIPS  
Mr Kevin Reginald RYAN

### VICTORIA

Mr Alan George DALE  
Mr Peter Leslie EGAN  
Mr Alan GOODWIN  
Mr Donald Joseph KELLY  
Mr Peter Gordon MARKE  
Mr Trevor Michael ROCHE  
Mrs Joan STEEL  
Mr William Murray (Bill) WATSON

### QUEENSLAND

Mr Graham David LUCK ED  
Mr Ian McDonald MITCHELL  
Mr David PRAIN  
Mr John VAYRO  
Mr Kevin Patrick WALSH

### WESTERN AUSTRALIA

Mr Michael Gregory (Mike) CANTELO  
Mr Wayne John JONES  
Mr Colin Walter MALCOLM  
Mr Maxwell Frederick (Max) OSBORN  
Mr Christopher Raymond SOUSA

### SOUTH AUSTRALIA

Mr Peter Grant EDGCUMBE  
Mr Owen Douglas GLOVER

### AUSTRALIAN CAPITAL TERRITORY

Mr Arthur Colin SAYER  
Northern Territory  
Mr Brett Douglas HOLMES

**Bill Lea, recipient of a 2012 Australian Fire Service Medal**



Bob Goninon celebrating his 500th blood donation with Red Cross staff

## FPA Australia's Bob Goninon gives 500th gift of life

FPA Australia Learning and Development Specialist Bob Goninon has this month made his 500th donation at the Ringwood Blood Donation Centre.

Mr Goninon first became a blood donor in 1970 and has continued to donate regularly ever since. He has now given approximately 400 litres, or two 44-gallon-drum's worth, of blood and plasma. He has travelled 137,150 km to attend the blood donor centre and has sat in the donation chair for a total of 95 days.

Approximately 1,500 people have received the life-saving gift of blood products as a result of Mr Goninon's generous donations. FPA Australia congratulates Mr Goninon on this incredible ongoing effort to provide this vital gift to the community.

## ACMA reviewing training requirements for registered cabling providers

The Australian Communications and Media Authority (ACMA) has amended the regulatory requirements for cabling providers who install specialised cabling within customer premises.

ACMA's Cabling Provider Rules (CPRs) regulate the performance of cabling work in customer premises. Under the CPRs, cabling providers must be registered by registrars appointed by the ACMA. Cabling providers must meet certain competencies set by the ACMA in order to be registered. ACMA's competencies form the basis for training programs developed by Industry Skills Councils (ISCs).

The amendments to the ACMA cabling arrangements have been made to ensure cabling providers have the necessary skills required to perform specialised cabling work for the current and emerging customer cabling environment.

Under the new arrangements, cabling providers undertaking broadband, structured, optical-fibre or coaxial cabling work must have the training competencies relevant to specialised cabling work. The new competencies only apply to cabling providers who are undertaking the relevant specialised cabling work within customer premises.

As a result of the recent amendments, the cabling ISCs will ensure that training offered by Registered Training Organisations (RTOs) will include the additional competencies. The new competencies will be reflected in a revised Industry Pathways document to be published on the ACMA website.

More information about the revised training requirements for registered cabling providers is available on the FPA Australia website at <http://www.fpa.com.au>



## FPA Australia Code of Practice review

FPA Australia is currently reviewing and updating its Code of Practice. This will ensure that the Code continues to be relevant to members and reflects the changing nature of the fire protection industry in Australia.

The Code prescribes the principles, standards of behaviour and service delivery requirements of all FPA Australia members. Consultation has begun to identify areas in the Code that need revision.

All FPA Australia members will have an opportunity to provide feedback on the updated Code when a draft version is distributed in coming months. Contact Denise Friend on 03 9890 1544 or email [denise.friend@fpaa.com.au](mailto:denise.friend@fpaa.com.au) for more information about the Code of Practice review.

## The Australian CAP profile

The Australian Government Attorney-General's Department is leading a national project to deliver the *Australian Government Standard for the common alerting protocol—Australia profile* (CAP-AU-STD). The standard will enhance Australia's emergency management warning systems by enabling easy transmission of emergency messages and public safety information through all available technology-based devices.

Of particular note, CAP-AU-STD will improve messaging to special-needs populations and people from non-English speaking backgrounds. A single, text-based Common Alerting Protocol (CAP) message can be converted into speech and transmitted over radio station networks or appear on mobile phone handsets as an SMS (text) message. It can also trigger the pagers of emergency service personnel, appear as text on electronic highway signs or trigger the warning sirens for residents located within a precise geographic area.

The department has been working with all states and territories to develop this standard since 2009.

### What is CAP?

CAP is a warning systems technology that is widely used in the US, Canada and Europe. Current warning systems used in Australia are Emergency Alert, StateAlert and warnings issued through the Joint Australian Tsunami Warning Centre.

The National Strategy for Disaster Resilience, endorsed by the Council of Australian Governments (COAG), emphasises the importance of providing information and warnings to Australian communities. The CAP-AU-STD will support this strategy.

### Why does Australia need a CAP profile?

By developing a CAP profile specifically for Australia we will improve the exchange of alerting messages across Australia. The CAP profile will create a common approach using an open standard that aligns with the latest international standard. It will provide the Australian community with a best-practice, common and standardised approach to generating warning and alerting messages—one that is tailored to our emergency management environment and the emergency terminology we use.

When formally agreed, the Australian CAP profile will enable all state and territory governments to exchange hazard-alerting messages using the same standard message structure and event descriptions. The structured nature of CAP also offers opportunities to improve interoperability between message senders and recipients (including between warning systems), and improve message handling through the use of automated systems. These improvements offer the potential to accelerate distribution and notification of alert messages.

A CAP profile that reflects Australian terminology for natural hazards and community emergencies will ensure that hazard event codes have the same meaning across the entire country. It will also ensure the Australian public can easily recognise the codes used in alerting messages.

### Benefits for emergency management in Australia

The Australian CAP profile will provide the following benefits to Australia:

- a nationally consistent emergency warning message structure
- an endorsed government standard to guide future upgrades to alert and warning systems
- a bridge to connect alerting systems that use earlier versions of CAP
- improved interoperability between warning systems.

More information about the Attorney-General's Department CAP project is available from the Australian Emergency Management website at <http://www.em.gov.au/cap>

The CAP-AU-STD released for public use can be accessed at <http://www.em.gov.au/CapAuStd>



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2 Core & Earth



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\* Fire Rated Cables Only.



## Fire Australia now online for members

FPA Australia is proud to announce that *Fire Australia* magazine is now available as a digital download to Association members via the CONNECT online resource platform. Members can access issues by selecting the 'downloads' tab in CONNECT and then selecting '*Fire Australia* magazine'.

Selected editions from 2008 to 2012 are currently available for download and earlier editions will be added over the coming months. To visit CONNECT simply type [connect.fpaa.com.au](http://connect.fpaa.com.au) into the URL bar of your browser.



Gloria Maikano

## Bushfire CRC hosts international researcher

**Botswanan bushfire researcher Gloria Maikano recently completed an internship at the Bushfire CRC with a special project assessing the objectives of the Bushfire CRC biannual Research Advisory Forum.**

In Botswana, Ms Maikano is a Senior Scientific Officer in the Research and Monitoring section at the Department of Forestry and Range Resources, conducting inventories and ecological research.

Ms Maikano was able to complete the internship through one of two scholarships she received from the Australian Agency for International Development. The other scholarship is allowing her to undertake a Master of Forest Ecosystem Science at the University of Melbourne.

Ms Maikano noted that the knowledge and skills she acquired in her time at the Bushfire CRC would benefit her on her return to Botswana.

"My internship at the Bushfire CRC has been a fulfilling one. Not only was I able to learn about leadership, I have acquired skills that will help me develop in my profession in the research field," she said.

Ms Maikano also presented at the Research Advisory Forum in Hobart in May on bushfire research being undertaken in Botswana.

## Emergency management and the law highlighted

Bushfire CRC researcher Dr Michael Eburn is the Guest Editor of a special edition of the April 2012 *Australian Journal of Emergency Management*. The issue is a special legal edition featuring papers on the role of the law in emergency management in Australia. It features papers by Bushfire CRC researchers Rachel Anne Carter (La Trobe University), Dr Eburn and Professor Stephen Dovers (Australian National University) and Professor John Handmer and Dr Blythe McLennan (RMIT University).

Bushfire CRC Deputy CEO and Research Director Dr Richard Thornton also provided an introductory overview for the edition.

The edition covers aspects of policy and law relating to natural disasters. It discusses topics such as how success is measured in disaster response, how responsibility is shared, who should pay for disasters and how, and what are the legalities of the Commonwealth involvement in disaster response.

Most of the papers in the represent research funded by the Bushfire CRC to address aspects of mainstreaming fire and emergency management across legal and policy sectors. Three papers are by the key researchers listed above. Another three are provided by students who took part in Australian Disaster Law, a postgraduate unit designed and coordinated by Dr Eburn and offered by the Australian National University College of Law in 2011. This unit and these papers are practical demonstrations of the work of the Bushfire CRC and the Australian National University to encourage new researchers to think about how law and policy affect Australia's resilience.

The *Australian Journal of Emergency Management* is produced quarterly. Subscriptions are available in hard copy free of charge, and it is available on the Australian Emergency Management Institute's website at <http://www.em.gov.au/publications>.

## Firefighters in stress test for research

The Bushfire CRC and the ACT Parks and Conservation Service have just completed field research simulating a multi-day bushfire operation to measure the effects of stress, heat, smoke and sleep deprivation on firefighters.

Part of the Bushfire CRC project Operational readiness in rural firefighters during bushfire suppression, the simulation will provide invaluable information to help understand the cumulative effects of fatigue, heat and smoke on firefighters. The project is led by Dr Brad Aisbett from Deakin University and Dr Sally Ferguson from Central Queensland University.

The exercise took place at Birrigai in the ACT, and is hoped to provide valuable data on the conditions firefighters face while fighting a bushfire. Designed to replicate a real-life bushfire scenario, the exercise simulated a situation where firefighters are called to a bushfire during the afternoon. In the simulation, the firefighters continue to work on the fireground until a relief crew arrives, then sleep, complete a 12-hour shift, sleep again and complete a second 12-hour shift.

In full firefighting gear (uniforms), the firefighters, who were split into three groups of five, performed strenuous physical firefighting tasks over four days and nights. Researchers varied factors such as temperature, smoke concentration and the amount of sleep each group had.

Equipped with a heart-rate monitor, global positioning system, activity monitor and an ingestible core body temperature capsule, each firefighter completed physical and cognitive tasks every two waking hours. The aim was to measure the effects of the different research factors.

Manager of the ACT Territory and Municipal Services Fire Management Unit Neil Cooper said the exercise would help with staff management during a bushfire.

"This testing will help us better understand the needs of our staff during emergencies and allow for the strategic scheduling of shifts to manage sleep and stress on our firefighters," he said.

Based on the research findings, the Bushfire CRC will develop specific training and guidelines to better assist the health and safety of firefighters.



Dr Marty Alexander presenting at the Bushfire CRC seminar.

## Science and fire danger

Australian fire experts discussed the science behind fire danger ratings at a Bushfire CRC seminar held at the University of Sydney in June.

At the seminar Dr Marty Alexander provided a broad overview of the fundamental principles of fire danger ratings.

Dr Alexander's overview was largely based on his experiences with the development and application of the Canadian Forest Fire Danger Rating System over the course of his career with the Canadian Forest Service (1976–2010). This included a one-year secondment to New Zealand (1992–

93), coupled with his early involvement as a student assistant with the US National Fire Danger Rating System project (1972–74). More recently he has been a subject-matter expert for the European Joint Research Centre examining the feasibility of developing a global fire danger rating system.

The seminar was part of the Bushfire CRC Professional Development series. It was cohosted by the New South Wales Rural Fire Service and the University of Sydney.

A video of the seminar is available from the Bushfire CRC website <http://www.bushfirecrc.com>

## Help for WA with prescribed burns

The Bushfire CRC is assisting Western Australia's Department of Environment and Conservation (DEC) with its prescribed burning program.

The Bushfire CRC's independent consultants Roger Estall and Ross Runnalls are examining risk assessment and management arrangements for prescribed burns. Bushfire CRC Deputy CEO and Research Director Dr Richard Thornton is providing his insight to ensure the risk assessment conforms to international risk-management standards (ISO 31000).

The Bushfire CRC consultants have already been successful in assisting DEC to prepare burn plan methodology for 71 burns covering 114,000 hectares for autumn and winter 2012. Following the Western Australia Special Inquiry into the November 2011 Margaret River Bushfire, burn plan methodologies must be submitted to the newly created Office of Bushfire Risk Management for assessment prior to commencing a burn.

Murray Carter, Manager of Fire Management Services Branch at DEC, said the expertise of the Bushfire CRC is proving to be highly beneficial.

"The close involvement of the Bushfire CRC has not only facilitated access to a very high level of expertise in the risk management area, but will also ensure a much greater level of quality assurance is able to be applied," he said.

The assessment is expected to be completed by September 2012.



Firefighters complete a range of tasks for the researchers.

## Review report released

The Bushfire CRC is 'sound and robust', with supportive and engaged stakeholders, a high-quality research program, a cohort of leading international researchers and a clear vision for its future—that is the view expressed in the final report from the Independent Review Panel on behalf of the Department of Industry, Innovation, Science, Research and Tertiary Education.

Over three days in April 2012 the Panel reviewed a broad range of activities and structures within the Bushfire CRC. The Governing Board of the Bushfire CRC considered the report with its recommendations on 26 June. The Board will formally respond with details on how the recommendations will be addressed. Following the Board meeting, all partners were given the opportunity to discuss the way forward from the review at the Stakeholder Meeting.

The Panel made four major conclusions on the performance of the Bushfire CRC. It said the Bushfire CRC:

- 1 demonstrates sound governance and committee structures that effectively involve stakeholders, researchers and end users
- 2 has a high level of interaction between end users and researchers from determination of the scope of research projects through monitoring progress and in using results; it undertakes social and technical research of high quality that is valued by end users
- 3 manages research progress in a sound manner but with



The CRC Review Panel meeting.

sufficient flexibility to take account of opportunities emerging during a research project

- 4 operates a successful postgraduate program that supports students and integrates them into the work of the CRC and of the CRC participants

The Panel supported the proposal for the Bushfire CRC to extend its term by 12 months to June 2014, using existing Commonwealth funds with additional resources from partners. Although the main research program would still conclude in June 2013, a limited set of activities will be possible beyond this date. This would allow greater scope to deliver 'fourth-year' impacts of the research projects. It would also allow postgraduate students to complete their courses and provide more time to transition to an ongoing research institute with a new research program.

The full report is online at the Bushfire CRC website.

## Fire in the north

Fire managers from across the north of Australia discussed topics of current interest to the region at the Northern Australian Fire Management Forum in Townsville in June.

A later outcome of the meeting was the annual Bushfire Seasonal Outlook for Northern Australia—the Outlook was publicly distributed as a Bushfire CRC Fire Note and is available on the Bushfire CRC website, <http://www.bushfirecrc.com>.

On the second day of the forum, a field trip looked at fire mitigation works and interface issues with communities around Townsville. This was an opportunity to discuss common multi-agency issues with land tenures involving Queensland National Parks, local council and the Department of Defence.

Superintendent Ken Beasley, Queensland Fire and Rescue Service Regional Manager (Northern), hosted the forum, which was sponsored by the Bushfire CRC.



Delegates attending the forum in Hobart.

## Research Advisory Forum

Hobart was the venue for the sixth Bushfire CRC Research Advisory Forum on 23–24 May 2012. The forum was hosted by the Tasmania Fire Service, with Director of Community Safety Damien Killalea opening the proceedings at the Baha'i Centre of Learning in Hobart.

The Bushfire CRC holds the forum every six months to review the progress of ongoing projects. Researchers and lead end users are given the opportunity to present updates of their activities and invite discussion from across the Bushfire CRC membership. The audience heard presentations from researchers, students and end users representing about half of the current research programs.

Featured at the forum were updates on research into risk communication and risk assessment; environmental impacts of prescribed burns and wildfire; incident management organisation; urban and regional planning systems and fire; legal and policy sectors; fire, fuels and risk planning in the interface; and fire behaviour under extreme weather conditions.

Presentations on the research project updates are now online at the Bushfire CRC website.

# THE TRUE COST OF FIRE

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# Fire protection industry in focus—product manufacturing

The difficulties currently facing Australian fire protection product manufacturers are one small example of the challenges affecting the Australian manufacturing industry as a whole. But beyond typical supply chain and cost pressures, the complex and varying landscape of fire protection product regulation, certification and importation is placing additional pressures on local manufacturers.

By Joseph Keller,  
FPA Australia  
Communications  
Manager and Fire  
Australia magazine  
Joint Editor

“The Australian manufacturing industry is fighting for its life and radical change is urgently needed for it to survive.” That was the cry from Manufacturing Australia’s Executive Chairman Dick Warburton when the country’s major manufacturers met in Sydney at the Future of Manufacturing in Australia forum in March this year.

The forum called on all parties to address the fundamental question: is manufacturing an important part of Australia’s future or not?

The need for this kind of national conversation on the issue is obvious, given that manufacturing in Australia represented just 8.41% of Gross Domestic Product in 2011, a far cry from the halcyon days of the 1960s, where this figure was consistently above 25% (ABS Australian national account expenditure and product data).

This concern is being echoed by manufacturers of fire protection products in Australia, where the same supply chain pressures of the broader manufacturing industry are combining with a complex regulatory regime that is open to some interpretation. This creates many challenges for fire protection companies continuing to persevere with onshore manufacturing operations.

## Global competitors, local challenges

One of the largest Australian-based manufacturers of fire detection systems is Ampac Advanced Warning Systems. The company, founded in 1974, began developing fire detection panels in the early 1980s and has released several widely used fire panels since.

Ampac’s headquarters in Perth employs 85 staff, many in the production and distribution side of the company’s business. Ampac chiefly focusses on manufacturing fire detection panels for the Australian, New Zealand and European markets.

Importantly, Ampac’s revenue is split evenly between products it manufactures locally and ancillary products imported from overseas.

Ampac Managing Director Alf Pelliccione said the introduction of International Organization for Standardization (ISO) based standards for fire protection and detection products had meant his locally manufactured products now faced fierce competition in the Australian market.

The introduction of these ISO standards to the Australian fire protection product marketplace was a requirement of Australia’s entry to the World Trade Organization (WTO) in 1995 and the acceptance of the WTO’s Technical Barriers to Trade agreement that followed. This agreement, signed by Australia via the Council of Australian Governments (COAG), has influenced the development of ‘Evidence of Suitability’ requirements and driven recognition of multiple options for compliance.

These options provide manufacturers around the world with a great degree of flexibility to adopt different forms of evidence, including certain international documentation, in order for products to be deemed ‘suitable’ for sale in Australia.

This flexibility is also reciprocated to Australian manufacturers and should theoretically reduce some of the barriers to export of Australian fire protection products to the world. However, Mr Pelliccione said the agreement has unintended consequences for fire protection product manufacturers in Australia, because of better economies of scale available to larger overseas manufacturers.

“Regardless of where the international product originates from, be it Asia or Europe, they all have lower cost bases and much larger market bases, and this is putting extreme pressure on our businesses,” he said.

“For example, there are manufacturers of fire



Above right: The Ampac fire detection system.

Right: Ampac's ZoneSense fire alarm control panel.

Below right: Ampac's NZ1 single zone conventional panel.

Brooks Firetracker fire indicator panels.



BLCS1 Brooks Gas Extinguishing System Local Control Station.



Brooks Panasonic multi detector photoelectric and thermal.

Brooks Panasonic enclosed analogue heat detector.

FT1SB Brooks Switchboard Smoke Detection System.

detection panels in the UK that grow and prosper with only the manufacture and sale of fire detection panels. A similar company model in Australia would never survive without supplementing their revenue with a significant number of imported ancillary products."

Brooks Australia is another manufacturer facing the challenges of Australian-based production. The company, founded in 1973, employs over 50 people in offices and warehouses across Australia and New Zealand. It operates a manufacturing facility in Sydney.

Brooks also maintains its own R&D division responsible for the design and development of a range of fire protection products including smoke alarms, residential and commercial detection systems, conventional and addressable analogue systems, gas suppression systems and occupant warning systems. The company designs and manufactures the control and indication equipment for these systems along with many related items.

Brooks CEO Cameron Brooks also believes the current regulatory framework for fire protection and detection products has had unintended negative consequences on Australian-based manufacturers.

"The adoption of ISO-based standards has provided the opportunity for increased competition among fire protection product manufacturers globally," he said.

"This in itself is not a problem, but the way these products are accredited for sale in the Australian marketplace is. The process simply does not have the necessary rigour to ensure that cheap, non-compliant products are barred from sale.

"Products that are being imported and sold based on overseas certification appraisals need to be scrutinised more thoroughly. There is a need to ensure that these products actually meet the required performance standards and that the appraisals are being carried out by appropriately endorsed laboratories."

## Pressures from within

The challenges are not limited to imported products. Other Australian companies manufacturing products for the fire protection industry are concerned by the entry of cut-price local competitors offering fire protection products that may also fall short of the necessary performance requirements.

Duane Crombie is CEO of Rhino Water Tanks, an Australian-owned and operated company manufacturing large-scale water tank products for domestic, rural, commercial and industrial applications.

Mr Crombie said he was aware of some operators using cheap, potentially non-compliant components for fire tank products.

"The issue we have with fire tanks is that our competitors are able to undercut us with the use of lower-quality components and materials," he said.

"Under the current requirements, fire tank pumps are subject to testing but tank lining and joinery may not be. So some producers are making tanks that will hold water but may not feature the high grade of components necessary to meet the performance requirements.

"We have seen instances where tank lining has sagged so badly into the inside of a fire tank that the material actually blocked water flow from the tank completely, presenting a potentially deadly situation in a fire emergency.

"There is a new Australian Standard for fire tanks (AS 2304-2011) and we encourage customers purchasing fire tanks for their premises to ensure their chosen product conforms to this Standard, given the important duty-of-care responsibilities carried by building owners.

"The difficulty we face is trying to educate building owners and others in the building and construction supply chain about the importance of ensuring



Above: Rhino fire tanks.

minimum standards of quality in these products, rather than simply choosing the cheapest possible option, which may not actually be compliant.”

### Addressing Evidence of Suitability

Many of the concerns raised by Australian-based fire protection product manufacturers are being exacerbated by confusion that currently exists relating to Evidence of Suitability and performance-based requirements as referenced in the Building Code of Australia (BCA).

The BCA sets out five separate options for providing Evidence of Suitability of fire protection systems designed to be flexible enough to:

- 1 confirm acceptable testing and certification options
- 2 ensure competitive neutrality (i.e. individual companies or organisations are not referenced, only recognised processes or controls)
- 3 satisfy Australia’s membership of the WTO Technical Barriers to Trade agreement aimed at stimulating free trade between member countries.

However, with some options for evidence as vague as ‘any form of documentary evidence that correctly describes the properties and performance of the material’, the possibility for misinterpretation and even exploitation of what constitutes ‘evidence’ certainly exists.

Chris Orr, Brooks Group Engineering Services Manager said some of the options for demonstrating Evidence of Suitability, while designed to provide flexibility for the industry, were actually serving to sabotage it.

“More needs to be done to clarify the Evidence of Suitability requirements in order to level the playing field.

“There needs to be a validation of the Evidence of Suitability requirements under the BCA. As it stands, anything goes. Fire protection products, and

indeed products of any kind, should not be sold in the Australian market unless they are tested and deemed to be fit for the task they are designed to perform.”

Fire Protection Association Australia (FPA Australia) is currently compiling several technical documents designed to provide clarity on Evidence of Suitability of fire protection and safety products, as there continues to be a mixed understanding in the industry about their intent and the options available for compliance.

Inferior fire safety products can have direct implications for life safety and adherence to Evidence of Suitability controls is critical to ensuring the life safety, health and amenity of people. Failure of inferior fire protection products can also directly affect property protection expectations and the environmental impact of fire.

It is the position of FPA Australia that seeking and providing the appropriate documentation to demonstrate Evidence of Suitability is critically important for all stakeholders in the building design and approval process.

With this in mind, in 2012 FPA Australia will release a comprehensive reference document on the various pathways to achieving Evidence of Suitability to clarify some of the confusion. FPA Australia will also produce a series of shorter good practice guides relating to Evidence of Suitability requirements and will hold a national seminar series on these issues once the guides have been released. ■

**For more information about these or any other technical documents please phone the FPA Australia Technical Department on 1300 731 922.**

**FPA Australia would like to thank Ampac, Brooks and Rhino Water Tanks for their contributions to this article.**





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# EMOTIONAL BUSHFIRE PREPAREDNESS IN YOUR POCKET

A team of Bushfire CRC researchers is helping residents of bushfire-prone areas prepare for a bushfire by modifying their thoughts using an iPhone application.

By **Nathan Maddock**,  
*Fire Australia* magazine  
Joint Editor

**R**esearchers have developed an iPhone application to help people exposed to the risk of a bushfire engage more actively in bushfire preparedness.

The study is led by Professor Colin MacLeod from the University of Western Australia's Centre for the Advancement of Research on Emotion and funded by the Bushfire CRC. It seeks to help residents of bushfire-prone areas effectively follow through on their intentions to undertake bushfire preparedness work.

Modifying people's thoughts is the aim of the iPhone application that trains selective attentional response to information related to the threat of a bushfire.

"The [smartphone] application will assist people who want to do something to reduce their individual bushfire risk, but who find themselves procrastinating

about actually taking the steps they need to in order to enhance their safety," Prof MacLeod said.

"These people really do intend to complete bushfire preparedness jobs around their home, but the way they process certain types of information means that their intentions to complete these tasks do not get realised. For these people, we've designed an application to produce and maintain the emotional state that will help them follow through with their plans, to complete the tasks they know they need to do."

The application works by measuring the user's response to words that appear on the screen. Some of these words relate to bushfire and are designed to influence emotion, while some are not. The user must respond to the words by pressing the appropriate prompt. The quicker the response, the higher the score.

Attentional bias is indicated by the response time.

The approach Prof MacLeod and his colleague Dr Lies Notebaert, a postdoctoral fellow also funded by the Bushfire CRC, are using is known as cognitive bias modification. Their research falls under the Bushfire CRC's Communicating Risk Program.

Cognitive bias is simply selective information processing. Cognitive bias modification works by changing the types of information an individual focusses on and the way in which they use the information.

Prof MacLeod describes this as 'training the brain'. "Over a period of time, the brain can be trained to adopt a particular pattern of processing and, by extended practice, to complete tasks that encourage this pattern. If we run people through these tasks, even for a relatively short period of time such as 15 to 20 minutes, we can change how people think, in ways that may influence emotion and motivation.

"By altering the way people process information when they intend to complete particular actions, cognitive bias modification delivered through a smartphone application may be able to assist in the degree to which they follow through on these intentions, even after a single session of about 20 minutes, so long as it is given at the right time."

By using a smartphone application, the individual is able to choose the right time for them, such as when they wake up on a Saturday morning.

The work on smartphone-delivered cognitive bias modification has drawn inspiration from Prof MacLeod's ongoing collaboration with Professor Rich McNally at Harvard University.

"Rich and his PhD student, Phil Enock, recently developed the first iPhone application of this type and their pioneering work has opened up the new frontier we're now exploring," Prof MacLeod said.

Prof MacLeod and Dr Notebaert are hoping their smartphone application might give people the ability to put themselves into the emotional state that is optimal for maintaining the motivation to follow through on their intentions.

"We all regulate our emotions. When we feel threatened, we take steps to reduce the degree to which we feel anxious. One easy way to do this is by putting unpleasant thoughts out of mind and avoiding thinking about the threat, rather than by taking effective actions that effectively reduce this threat.

"Burying one's head in the sand can be an effective way of regulating negative emotion, but this short-term emotional benefit comes at a significant cost," Prof MacLeod said.

People who maintain positive emotions by avoiding thoughts about threat can find themselves underprepared when there is a genuine danger that requires good decision-making and effective action. In a bushfire scenario, being underprepared can be deadly.

At the other extreme, some people may be so worried about the possibility of danger that they fail to distinguish a relevant threat from an irrelevant threat. This presents a different issue that can also disrupt effective preparation for a bushfire.

"The problem here is that worry becomes overgeneralised and unfocussed. It may be triggered initially by identification of a particular risk, which in principle could be prepared for, but the worry expands to include too many other concerns. Consequently, worry never stays focussed on a specific threat for long enough to motivate completion of preparation behaviours that reduce this threat. Excessive worry of this type is not conducive to the effective planning and preparation required of people who live in bushfire-prone areas, to ensure the safety of themselves and their families," Prof MacLeod said.

While there are similarities between cognitive bias modification and talking with a psychiatrist or psychologist, there are also important differences between the approaches.

"Both cognitive bias modification and conventional clinical approaches employed in psychiatry or psychology focus on how people think. The difference is that cognitive bias modification is designed to retrain the brain so that it produces different types of thoughts, whereas traditional clinical approaches focus on changing how people respond to the types of thought they experience," Prof MacLeod said.

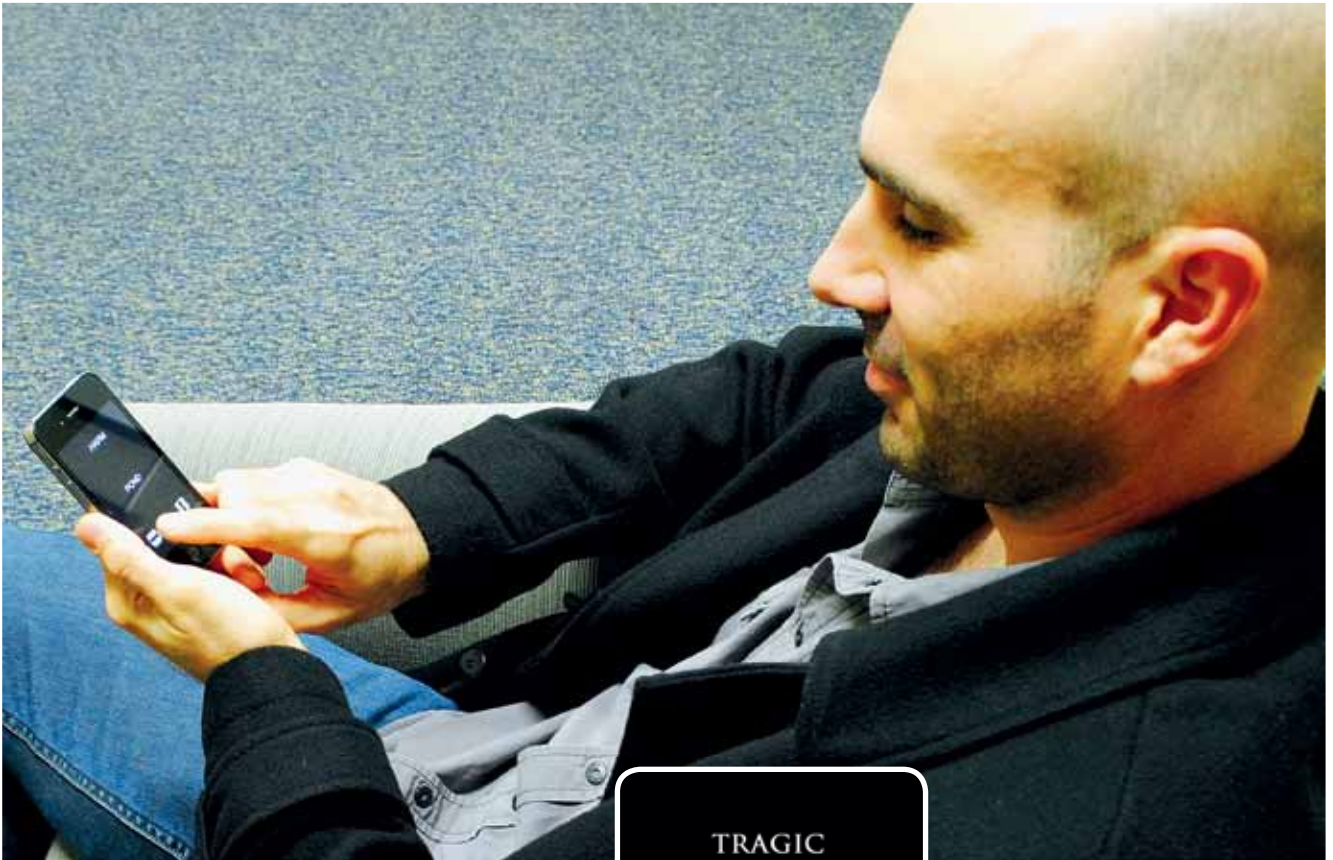
Prof MacLeod and Dr Notebaert identified during the earlier part of their project the patterns of information processing that lead people to most effectively engage in good preparatory behaviour, which reduces their exposure to bushfire danger.

This work sampled participants from early 2011 fire-affected communities in Western Australia who reported differing levels of anxiety and worry. The study assessed a range of cognitive biases in attention, interpretation, memory and mental imagery.

The results of this study are enabling Prof MacLeod and Dr Notebaert to identify which forms of cognitive biases are linked to good preparedness behaviours.



Using an application on a smartphone may be able to help you prepare for a bushfire.



The application works by measuring the time it takes to respond to words on the screen.

This will allow them to undertake subsequent studies in which cognitive bias modification will be used to improve bushfire preparedness.

The research is now progressing to the next logical step says Prof MacLeod. "Now that we know the styles of information processing that produce the most effective behavioural actions, we are seeking to train these styles using cognitive bias modification techniques. Clearly, it will be of significant practical value if this training can increase engagement in behaviours that reduce risk, not only for people exposed to bushfire threat, but also for those facing other types of threats that can be reduced by good preparation."

Progress will also be made on the smartphone application. Currently restricted to the iPhone, there are plans for it to be developed for other smartphones.

Damien Killalea, Director Community Safety at the Tasmania Fire Service, is the lead end user for the Bushfire CRC Managing the Threat Through the Modification of Thought project. He sees the research as highly beneficial and is excited about the opportunities it may present.

"The smartphone application may give us the opportunity to introduce into people's homes a useful tool to modify the way they think about how bushfire preparedness is causing them stress, worry or anxiety. Our hope is that they will be able

to modify their behaviour and act in a more appropriate way to the environmental cues, advice or warnings they receive about bushfire risk or the imminent threat of bushfire."

Mr Killalea knows there could be benefits on different levels. "For some people, modified behaviour may increase their attention to a level that will motivate them to act. For others, it may be a means to reduce their stress and worry to a level where they

can take effective action, either to prepare for a fire or to respond to it.

"A smartphone application is a completely new opportunity for the sector, a new way to reach those at risk. An app is non-intrusive and allows people to adjust the way they think about bushfires, and hence respond to them, in their own environment and in their own time."

Prof MacLeod acknowledges that the research is unusual. "Our approach is a bit different from what people might expect to find in bushfire research.

"But we're seeking to achieve the same outcomes as many other researchers and practitioners working to enhance community safety, using a different approach. We're trying to help people effectively complete safety preparation tasks they intend to carry out, by using a smartphone application that can put them in the right frame of mind to convert these intentions into actions." ■



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# It's the quality of evidence that matters— UK legal eagle Mark Scoggins

On the eve of his visit to Australia Mark Scoggins, one of the UK's pre-eminent legal eagles to emergency services, gives good advice.

By Alastair Wilson

**W**hen it comes to finding a legal representative in the UK who likely has some of the very best understanding of legal issues in the emergency sector, response agencies there will tell you to talk to Mark Scoggins.

He has been described as 'formidable' in the courtroom. As a Solicitor Advocate he holds full Higher Rights of Audience. That means he is qualified in litigation skills to conduct criminal advocacy in the country's highest courts. He has defended in some of the highest profile police and emergency cases in the country.



## So what relevance to Australia?

Mr Scoggins visited late in July to talk tough with senior emergency management people about how to be better prepared for post-disaster inquiries and court proceedings. He shared some gems of wisdom with this year's AFAC Executive Command Forum on a lecture tour led by Stuart Ellis of Leading Emergency Services. The tour, which took Mark from NSW through Victoria to Western Australia, gave senior officers from rural and metropolitan fire services, fire and rescue, SES management and police as well as selected private enterprise emergency management people, an insight into new ways of approaching legal, litigation and public inquiry issues.

His lectures focussed on preparation and planning, decision-making and recording of potential evidence, and looking at lessons from recent history.

A graduate of Cambridge University, Mr Scoggins

has been based in London since his call to the Bar in 1983. His main practice is the defence of organisations and individuals in the construction, chemical, transport, waste and water sectors in regulatory and civil cases, particularly health and safety, corporate manslaughter and environmental arenas. In cases relating to law enforcement and emergency management, he has been involved in a number of high-profile court proceedings. His notable cases include leading the defence in the 1999 trial over the Heathrow express tunnel collapse of October 1994; representing a train operator at the public inquiry into a train collision which killed 31 people in 1999; and cases to do with pipelines, pollution, asbestos removal, electrocution and flooding.

One case that Australians may recognise resulted from the fatal shooting by police of young Brazilian electrician Jean Charles de Menezes at Stockwell station a short time after the London terrorist bombings of July 2005 on London's underground trains and a double-decker bus. In that case, Mark represented the Metropolitan Police in a health and safety prosecution.

What drew Mark Scoggins into the world of emergency management?

"I discovered how seriously out-of-date the law was to the modern day," he said. "Twenty years ago, one of my then colleagues was invited to speak at an emergency planners' conference but balked at the likely large audience. When I took the brief, emergency management in the UK had long been focussed on civil defence and the threat of war with the Soviet bloc. There was no clear concept of agencies working together."

Mr Scoggins likes to think that his involvement and urgings over the following decade helped develop the UK's Civil Contingencies Act of 2004, which above all stresses the importance of interoperability between blue-light and other services.

## The legal aftermath

Senior emergency services officers in Australia are no strangers to litigation and the legal inquiries that come through royal commissions and government inquiries following disasters and emergency incidents. In the past decade, hardly an emergency event in any state or territory has avoided being the subject of inquiry. The 2009 Victorian bushfires, the floods across a couple of seasons in Queensland, a chemical explosion in Canberra and fires on the outskirts of Perth are but a few.

The subject of risk and responsibility can now never

be far from an incident controller's mind. Yet it would seem that there are still lessons to be learnt.

The primary message from Mr Scoggins is that a defence lawyer must be able to argue with accurate evidence on every aspect of an operation, and that means logging everything. But do emergency agencies have a realistic appreciation of the implications of their decision? He believes they do.

"Major incidents aside, in the day-to-day job of police, fire, paramedic and similar services there is huge and ever-present appreciation of the possible adverse outcomes from decisions and actions—and especially that the consequence could be avoidable death and injury," he said.

"In my line of work, the challenge is not so much to demonstrate that those outcomes were recognised, as to be able to prove by cogent and credible evidence that a rational, professional and defensible process was followed to arrive at the decisions that were taken. It's the quality of the evidence that matters," he adds.

And that is the main point he made in his lecture tour.

### Can we deliver?

With higher public expectations of the speed and quality of emergency response, what should agency officers prepare for? And can we deliver?

Mr Scoggins believes that to some extent the emergency services have only themselves to blame for the higher expectations. "The message they give is understandably one of public reassurance, but very commonly in cases I handle I have to question whether what the public was told was truly in line with what the emergency responders could actually deliver on the day. In other words, there is a gap between expectation and reality, which perhaps widens in a time of austerity cuts.

"When the questions are asked, you will want to claim and be able to prove that you had a robust plan and that it worked well—that you acted quickly, decisively and sensibly," Mr Scoggins said. British law, as with Australian law, is based on reasonableness. "It's not guaranteed, but provided you can prove that you have tried your best, then you will have a fair chance of success.

"You will need to prove that decision-making was informed and swift, that everybody knew their roles and did them well, and that the best information was available to the right people".

Post-disaster reviews and inquiries now seem inevitable. So should agencies be allowing this prospect to influence their planning and incident decisions?

"Absolutely not," Mr Scoggins said. "They should do and continue to do, professionally, what they think is best to keep people alive and well.

"What they can do, and do better, is to evidence and record their decisions and the reasons for them, both in the planning and in the response itself when disaster strikes." He strongly believes it is the existing evidence that will dictate post-event defensibility. "If that evidence is lacking then we're going to have a struggle in proving that we decided the right things for the right reasons and on a rational basis."

### Internal reviews a must

Mr Scoggins believes it is best practice to conduct an immediate internal review when an agency responds to a major disaster.

"If it is not carried out, I'd argue (if on the other side) that there was a plot to conceal mistakes! And there's a particular point and purpose to its being swift," he said.

"Public inquiries will take many months to consider and report. Inquests take several years—in the UK the typical time lapse between death and inquest hearing is two years and rising. But if there are lessons to be learnt from an incident they should be learnt quickly—and those most closely involved in the response and most expert in the issues involved are surely in the best position to learn them."

On the question of media driving public perceptions through 'citizen reporters' using social media, Mr Scoggins gives a forthright answer.

"The media will go where they want and get what they want. Attempts at restraining them will be futile at best and backfire at worst."



"Social media, television and other live-time credible sources will show the scene for apparently what it is," he said. Denial or lack of confirmation from police of what is unfolding live on the worldwide web is a tactic that will only undermine the credibility of the emergency services.

"There may be a context to be explained (and if so it should be) but refusal to comment or confirm is not a credible option. Police and other emergency services need to engage with social media early on in an incident if they are to gain public trust in what they're saying," Mr Scoggins said.

So what current emergency sector related matters is Mr Scoggins working on at the moment?

"Quite a number," he said. "But I can't give you the details because they're all confidential; though I can say some relate to the 2012 Olympic and Paralympic Games."

Marks Scoggins's audience in Australia benefited from some exciting discussion and much sound advice. ■

The 2009 Victorian bushfires, like many emergency events, has been the subject of litigation and legal inquisition.



## Bushfire reaches tertiary level

A new tertiary course for bushfire consultants based on the latest research is being developed by a consortium of university and fire industry bodies.

By Kirralee Morgan

Above: The new course in Bushfire Planning and Management will help consultants develop better designs and infrastructure into the future.

**O**n 7 February 2009, with drought drawing moisture from the landscape and the summer heat stifling the community, the Black Saturday bushfires swept swiftly through the thick Victorian bush, obliterating homes and devastating lives with a fiery force not seen since the Ash Wednesday fires almost 26 years earlier.

Three and a half years on, the smoke may have cleared but the fires are still sparking intense discussion and research in many areas including bushfire behaviour, land use planning and building design in fire-prone areas. One point of discussion has been the training and knowledge provided to people dealing with bushfire-prone areas, and how this learning can be improved.

The Victorian Bushfires Royal Commission (VBRC), which was established to investigate the causes and responses to the Victorian fires in early 2009, made recommendations on research and further learning.

One such recommendation adopted by the Victorian Government—VBRC Recommendation 55—was for the State to initiate the development of education and training options to improve understanding of bushfire risk management in the building and planning regimes. This included a recommendation for the State to assist a tertiary institution to develop a course on bushfire planning and design in Victoria.

The University of Melbourne was subsequently granted the opportunity to run a tertiary bushfire course through its Department of Forest and Ecosystem Science in conjunction with its Faculty of Architecture, Building and Planning.

To ensure the new course meets national standards and adequately caters to the need for further research, a steering committee is overseeing its development. This committee has representatives from Fire

Protection Association Australia (FPA Australia), the Victorian Building Commission (VBC), the Country Fire Authority (CFA), the Victorian Department of Planning and Community Development (DPCD), and the Victorian Department of Education and Early Childhood Development.

The course in Bushfire Planning and Management has been specifically developed in accordance with the recommendation and will commence in early 2013. It will provide a suitable and professional platform for recognising the skills of bushfire consultants operating in Victoria.

Building on an existing five-day short course, Development and Building in Bushfire Prone Areas, which was established by the University of Technology Sydney in 2010 in the wake of the 2009 bushfires, the new bushfire course will offer a higher level of qualification.

The University of Melbourne will offer the course at Certificate (completion of four subjects) and Diploma (completion of eight subjects) levels. It will also be offered part-time to cater for participants currently practising in specific fields. An entry requirement for the course is a completed undergraduate degree in a discipline such as science, architecture, engineering or surveying.

### Planning for the future

Bushfire CRC researcher Associate Professor Kevin Tolhurst from the University of Melbourne, and one of the coordinators of the course, said the course was a necessary step for the future.

“Since the events of Black Saturday, the new planning and building regulatory framework acknowledges that there are significant interactions between the landscape, the climatic conditions, the arrangement of houses and other infrastructure in the landscape, and building design and placement. However, these interactions are complex and the Royal Commission recognised this, which is why this course is so important, as it will help to educate the people with the know-how to develop better designs and infrastructure for the future,” he said.

“The need to have bushfire consultants and regulators better trained to be able to consistently and reliably design and assess building developments in bushfire-prone environments is essential to the safety of the community.”

A/Prof Tolhurst said the steering committee played a vital role in ensuring the course achieved its desired outcomes.

“It has been important to have the key stakeholders involved in the development of the course to ensure that the outcomes meet everyone’s needs and there are no surprises in the development of the training and accreditation process,” he said.

The new course draws heavily on research conducted by the Bushfire CRC over the last decade by some of its leading researchers including Dr Chris Weston, Justin Leonard and A/Prof Tolhurst. The Bushfire CRC has produced a large amount of subject material for the course from its early research program, and now through its University of Melbourne-based Fire in the Landscape projects (*Fire Australia*, Autumn 2012).



Deputy CEO of the Bushfire CRC, Dr Richard Thornton, said the knowledge coming from the Fire in the Landscape projects and the research on fire weather, urban planning, community safety and building construction, is central to the new bushfire course, as it will greatly assist future planning and management.

“The knowledge gained from such research will ensure our land can be managed better before and after a fire. It will allow for better planning of strategies in fire and emergency management and will give future generations the tools to be more resilient to bushfires,” he said.

Dr Thornton said the course will draw on new research as it evolves. “The Bushfire CRC’s research extends across many fire-related disciplines and this will continually enhance the content of the new course with improved knowledge on bushfire impacts and behaviour.”

FPA Australia has also been closely involved in the creation of the bushfire course. As part of its role on the course steering committee, FPA Australia has provided a vital link between the course’s design and the fire protection industry.

### Skills development a priority

Matthew Wright, Chief Technical Officer and Deputy CEO of FPA Australia, said the knowledge of the Association’s technical department has been relied on heavily in the development of the course.

“The Victorian Government specifically sought FPA Australia’s involvement in the development of the course to ensure it would provide the skills necessary in the current marketplace and, in particular, the Victorian legislative landscape and local climate and conditions,” he said.

“FPA Australia has helped to ensure the course attends to and connects the scientific understanding of bushfire behaviour and risk with the legislative goals and requirements for construction in areas subject to bushfire planning and building controls. This has been possible due to FPA Australia’s unique exposure to both bushfire science and industry demands.

“As the peak national industry body, FPA Australia represents the interests of our members in the Australian fire protection industry, including bushfire consultants, by providing an excellent avenue for them to improve their knowledge and skills when dealing with bushfire-prone areas,” he said.

A/Prof Tolhurst said, “those wishing to expand their credentials even further will be able to complete the equivalent of 16 subjects and qualify for the Master of Forest and Ecosystem Science.

“On top of that, students will also be offered the opportunity to undertake individual subjects without completing the full award, which is often done by consultants or agency people with a wish to strengthen a particular aspect of their skills. A maximum of two subjects can be done this way and students can choose to be formally assessed or not.”

The new bushfire course accommodates the adoption of a new Australian Standard AS 3959-2009 *Construction of buildings in bushfire-prone areas*, and the designation of Bushfire-Prone Areas and Bushfire Management Overlays following the 2009 fires.

The course is aimed at professionals in the planning, building, engineering, architecture and environmental industries with roles in the design or regulation of development in a bushfire environment. Urban planners, rural developers, public land managers, architects, fire engineers and fire agency planning regulators would find the course relevant.

Although existing courses present bushfire-related subjects in building design, and training sessions are run by agencies such as the BC, DPCD and CFA in Victoria, none cover the material and research as extensively as the new course aims to do.

Mr Wright said, “right now there is no requirement for consultants providing bushfire advice to be registered or formally recognised in Victoria. Accordingly, in Victoria anyone can prepare a Bushfire Attack Level assessment in accordance with AS 3959-2009 or develop a Bushfire Management Statement to accompany a planning permit application.

“Understanding of the intent of planning and building controls combined with a scientific understanding of bushfire risk is critical to realising more appropriate development in bushfire-prone areas and increasing the safety of both responding emergency services and the community.”

The course will provide graduates with the necessary skills to undertake designs and prepare alternative solutions in bushfire-prone environments. The course will cover, among other things, land use planning for mitigating bushfire impact, bushfire building design and construction, fuel assessment and management, bushfire behaviour and firefighting techniques.

A/Prof Tolhurst adds, “the integrated nature of the course will mean that most participants will need to develop a greater understanding of areas outside their normal expertise.

“The University of Melbourne intends to offer the course for decades to come, to ensure industries dealing with bushfire-prone areas have enhanced, up-to-date information with which to design and manage infrastructure and environment for the future.” ■

**The Bushfire Planning and Management course begins in early 2013. More details at <http://www.forests.unimelb.edu.au>**

The Black Saturday bushfires were a catalyst for intense discussion on planning and building in bushfire-prone areas.



# FIRE AUSTRALIA CONFERENCE & EXHIBITION

# THE TRUE COST OF FIRE

## Life Property Environment

14–16 November 2012 Melbourne Convention and Exhibition Centre



**THE CONFERENCE**  
Fire Australia 2012 is the premier fire protection industry conference, attracting key personnel, peers and significant representation from businesses, government and associations.

**LIFE PROPERTY ENVIRONMENT**  
The protection and preservation of life from fire and related emergencies across Australia is the cornerstone of FPA Australia's vision.

With speakers from across Australia and overseas, the organisers of this year's Fire Australia conference and exhibition aim to ensure all presentations are topical and current, and provide every attendee additional knowledge and information. Based on feedback from the 2011 conference, the 2012 program will offer more interactive workshops and incorporate a provocative debate session that saw success in Hobart in 2009.

The exhibition in 2012 is anticipated to be the largest to date and will draw many attendees from different industries. The program will incorporate two and a half days of presentations, workshops and social activities, including a cocktail reception, conference dinner and farewell lunch ensuring plenty of networking opportunities.

### Attendees

Fire Australia draws delegates from all states and territories of Australia and from New Zealand and the Asia-Pacific region. The conference format will ensure industry issues are professionally presented. The organisers expect strong attendance from industry professionals including:

- architects, building designers and specifiers
- building surveyors
- environmental engineers and sustainability managers
- facility managers, property developers and building owners
- fire consultants and engineers
- fire equipment manufacturers, distributors and installers
- fire service personnel
- insurance professionals
- regulatory authorities and legislators.

### Conference

A range of peer reviewed presenters will provide insight on the important issues facing the industry and drive discussions across the conference program. Visit the Fire Australia 2012 website [www.fireaustralia.com.au](http://www.fireaustralia.com.au) to download the full conference program and registration guide.

### Exhibition

A wide range of fire protection companies, organisations and associations will be represented throughout the Fire Australia 2012 exhibition. These will include service providers, product manufacturers, design and installation companies, industry associations and many more. All exhibitors will provide essential information to fire protection personnel and affiliated industry members. All related industry members are encouraged to visit the exhibition. Entry is free, however, registration is required.

### Complementary presentations

The opening presentations of the Fire Australia 2012 Conference are free for everyone to attend. This session will include the opening dignitary, Day 1 keynote speaker and another high-profile speaker, plus a burn demonstration to illustrate the effectiveness of residential sprinkler systems.

For an updated exhibitor list and program visit the conference website at <http://www.fireaustralia.com.au>





## Venue and location

Leading the way for events, arts, culture, sport and infrastructure, Melbourne offers something for every conference and incentive group. Famous for its laneways, stunning waterfront precincts and trendy neighbourhoods, the city provides an endless choice of restaurants, cafés and bars in original locations.

Melbourne's rich multicultural history, combined with the drive for innovation, has resulted in some of the most delicious and diverse cuisine in the world. Melbourne is also famous for its many and varied shopping experiences, including those offered in historic laneways, outdoor markets, international boutiques, comprehensive shopping centres and department stores. And what's more, just an hour's drive from the city takes you to stunning surf coasts, picturesque vineyards, historical townships and wildlife reserves.

The Melbourne Convention and Exhibition Centre (MCEC) is located on the banks of the Yarra River, a short walk from Melbourne's central business district. A 20-minute drive to Melbourne Airport connects MCEC to the rest of Australia and the world.



## Keynote speakers

**BRENDAN MACGRATH**  
Manager, International Codes and Standards Group, FM Global (France)

Brendan MacGrath is Manager, International Codes and Standards Group at FM Global, a position he has held since 2007. Based in Paris, France he is responsible for overseeing the company's efforts to support building code and installation standard organisations outside of the US and Canada.

Since joining FM Global in 1994, Brendan has worked as a loss prevention consultant in Barcelona, Spain. He specialises in chemical risks and is a chief engineering technical specialist, serving FM Global's clients in France and the Benelux and Iberian territories.

He graduated from the Cork (Ireland) Institute of Technology with a BSc in chemical engineering.

Brendan's keynote address on the true cost of fire is sure to generate much discussion.

*The major factors impacting our building industry today—green star ratings, sustainable energy, low carbon footprint—are all in the name of sustainability. Many fire safety engineers are finding it difficult to marry in the key requirements for safety of life. What is the true cost of fire if all factors are not taken into consideration?*



**PROFESSOR JOSÉ TORERO**  
Director, BRE Centre for Fire Safety Engineering, The University of Edinburgh

Professor José L Torero is the BRE Trust/RAEng Professor of Fire Safety Engineering and Director of the BRE Centre for Fire Safety Engineering at The University of Edinburgh. Prof Torero is Fellow of the Royal Academy of Engineering and the Royal

Society of Edinburgh, the 2008 recipient of the Arthur B Guise Medal from the Society of Fire Protection Engineers and the 2011 Rasbash Medal from the Institution of Fire Engineers (UK) for eminent achievement in the advancement of the science of fire safety.

Prof Torero is the author of a book and more than 500 technical documents for which he has received many awards. He is the Editor-in-Chief of *Fire Safety Journal*, was Associate Editor of *Combustion Science and Technology* (2005–10) and is a member of the Editorial Board of several other fire-related publications.

Prof Torero is the Vice-Chair of the International Association for Fire Safety Science, Chair of the Fire Safety Working Group of the International Council for Tall Buildings and Urban Habitat and a member of many influential committees and standards development bodies. He consults to many private and government organisations around the world. He is recognised for leading-edge research in a broad range of subjects associated with fire safety and for developing many innovative educational programs in several countries.

Attendees will benefit from Prof Torero's broad depth of knowledge and experience in fire safety when he delivers his keynote address 'Cost reduction, optimisation, sustainability and fire safety—is this an oxymoron?' at Fire Australia 2012.

*The role of engineers, regulators and the fire service in a performance-based framework, where we seek sustainable processes and infrastructure, and optimisation and cost reduction, is revisited. Issues of lack of resources and uncertainty of competence are discussed in an attempt to define a working environment that is coherent with the objectives of performance-based design.*

## CONFERENCE DINNER

Occurring on the second night of Fire Australia, the conference dinner is the key social activity of the event and sees many delegates, exhibitors and industry personnel invite their partners, colleagues and clients for a night of socialising and entertainment.

The evening includes a sumptuous three-course meal and entertainment from renowned comedian Tom Gleeson followed by music, dancing, charity auctions and raffles. *Tables of 10 can be reserved and will receive preferred positioning.*

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# World-class firefighting training facilities

By Geoff Purcell,  
National Training  
Centre and Recruit  
Program Manager, New  
Zealand Fire Service

On 29 March 2012, Stage Two of the National Training Centre in Rotorua, New Zealand was officially opened. Following a traditional Maori welcome and formal opening by the Minister of Internal Affairs, the Hon Amy Adams, guests were treated to a training drill by some new recruits, which included a few fires, a large explosion and a tour of the state-of-the-art facilities.

Photos courtesy of  
Craig Robertson, Full  
Frame Photography



1, 2: The streetscape of the NTC includes several shops, a panel beater, a three-storey tower block with a basement that replicates a ship's engine room, a townhouse and two other houses with a garage and sleep-out. A separate area contains a level crossing and train tunnel set-up. The three-storey tower can be accessed using a gangway to simulate a ship, a hotel or industrial buildings.



**A**t the opening ceremony, new Chief Executive/National Commander of the New Zealand Fire Service Paul Baxter said, “The National Training Centre is available to meet the needs of all our firefighters from around New Zealand, and as an extension to this it is available to other services to exercise here in realistic and safe conditions.”

The first New Zealand Fire Service (NZFS) National Training Centre (NTC) was opened on 6 July 2006. It was established to provide a central venue to deliver standardised career firefighter training within the country. This training was previously delivered through four regional training centres. The previous

national facility, the Fire Service College in Wellington, was used for officer training but was closed down in the mid-1990s because its training facilities were unsuitable.

Retired Chief Executive/National Commander Mike Hall commenced his 10-year tenure in charge of the NZFS while the first NTC was being constructed. Mike had the vision to purchase the vacant land next to the NTC site for future development. End user consultation commenced in 2007 to determine what facilities were required and also to map training outcomes against the facilities for development of Stage Two of the NTC. The conceptual design for



3, 4: The internal gas fires and smoke room are operated from a touch screen located in a control room adjacent to the fire room. This provides the system operator a direct view of crews in the fire room. External LPG-fuelled window fires and synthetic smoke outlets are fitted to ten windows in the tower building. The operator clicks on the PC screen graphics to remotely start and stop individual window fires and smoke. These design features provide realistic building fire scenarios that test the command and control capabilities of station officer candidates.



Stage Two was completed during 2008 with final detailed design and costings. Business case development was completed during 2009.

In April 2009, the Board approved construction of Stage Two of the facility. Work commenced in October 2010 with practical completion of the Stage Two site in December 2011. Connecting and integrating services within the existing infrastructure to existing water mains, the thermal oxidiser, groundwater for treatment, liquefied petroleum gas (LPG) distribution, power and data proved challenging. This work had to be coordinated and completed with as little interruption to training activities as possible. Following the build completion, specialist gas services and props have now been completed and commissioned.

The NZ\$10 M (A\$7.8 M) Stage Two development complements the existing site by providing a streetscape where firefighters can carry out scenario training in a realistic environment. Several tilt slab concrete buildings with solid steel doors and sliding window shutters provide authenticity. Also, some of the rooms are fitted with LPG gas-fuelled fires that

replicate real fire incidents, providing challenging operational scenarios for firefighters. The required infrastructure and room designs have been incorporated into the build so that further internal gas simulations can be installed if required in the future. This forward planning will allow these installations to be completed with minimal interruption to training delivery.

New Zealand now has a world-class training facility that has been distilled from designs in other training centres around the world. The NTC Stage Two design contributes to ensuring the NZFS is self-sustaining and no longer reliant on other overseas organisations to complete training. The result gives the NZFS the ability to provide training for just about any possible incident—from the most basic of recruit firefighter drills through to complex multi-agency incident responses. ■

**For further information on the New Zealand Fire Service National Training Centre contact Geoff Purcell at [geoff.purcell@fire.org.nz](mailto:geoff.purcell@fire.org.nz) or +64 274 600 234.**



7: The entire site is environmentally friendly, using a firefighting water supply that is pumped through the fire mains to be used for training. The water is then captured in a retention pond, treated and reused. All live burn training is conducted indoors and the smoke is treated through a thermal oxidiser to comply with requirements of the nil smoke emission resource consent that is in place for the site. The scenarios consume many resources and take considerable time to prepare. Nowadays the obvious environmental effects of water runoff and smoke are becoming very difficult to defend.



8: In order to provide more realistic scenario environments, training buildings contain galvanized steel furniture that replicates contents of a real building. Firefighters can knock over and bash the furniture around during training.



9: The facility provides a sustainable future for the NZFS training for years to come. Open spaces have been retained in the design for future developments as required. This allows the NZFS to adapt and respond to new training requirements as its role evolves over time. L to R—Chief Executive/National Commander—Paul Baxter; Minister of Internal Affairs—the Hon Amy Adams; Chair of NZ Fire Service Commission—Right Hon Wyatt Creech; National Training Centre Manager—Geoff Purcell.



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# Water—The essential extinguishant, part two

## WATER AND ELECTRICITY

Because water contains impurities that render it electrically conductive, care must be exercised in applying it to fires where electricity is present, particularly when high voltages are involved. In Part Two of Water—the essential extinguishant, we look at water and its use as an extinguishant on Class E fires.

By Barry Lee OAM,  
Past National  
President, FPA  
Australia

The tolerance of the human body to electricity varies. However, it is typically considered that currents up to 3 mA (milliampere) can be tolerated without great discomfort. Nevertheless, water should not be applied to energised electrical equipment if the current conducted back to the operator can exceed approximately 1 mA.

Water-based portable fire extinguishers should not be used on fires involving live electrical equipment. Although tests have shown that, under certain circumstances, foam, water and even soda-acid extinguishers can be safely used<sup>1</sup>, there are problems in defining and recognising such circumstances under field conditions. Such problems justify the recommendation that soda-acid extinguishers should not normally be permitted for fires in energised electrical equipment. The electrical conductivity of a water stream depends on its purity and relative resistivity, the cross-sectional area and length of the stream, the voltage and hence potential current flow from the conductor and the degree to which the stream is dispersed. It is widely appreciated that, whereas a solid stream or jet of water can facilitate electricity flow through the stream, water spray (i.e. a water stream dispersed into discrete particles or droplets) does not.

Since the 1930s, various investigations have aimed to establish the limits of safe approach to energised electrical equipment when applying water from solid stream and spray pattern nozzles of varying size and at varying pressures. Unfortunately, the results are difficult to correlate because of variables including conductivity of the water used, variations in nozzle pressures and sizes, influence of meteorological conditions at time of test and differences in safe clearance criteria. Data published in 1958 by the Research Division of the Hydro-Electric Power Commission of Ontario<sup>2</sup> are reproduced here as

Table 1, below. These data nominate limits of safe approach to energised electrical equipment for 16 mm (5/8 in) solid stream and spray nozzles at 689 kPa (water resistance 600 Ω/in<sup>3</sup>).

In 1960, a valuable report on tests of water streams and sprays on high voltage equipment was published by the Electricity Commission of New South Wales<sup>1</sup>. This summarised the results of work conducted in cooperation with the New South Wales Fire Brigades during 1959–60. Instead of nominating safe approach distances for each voltage, it presented the recommended distances for various nozzle sizes that were considered safe up to 200 kV to earth. Note that the recommended distances are within the effective range of the nozzle concerned, as shown below.

Nozzle	Distance
1/2 in	30 feet (9 m)
5/8 in	40 feet (12 m)
3/4 in	60 feet (18.3 m)
7/8 in	60 feet (18.3 m)
1 in	70 feet (21.3 m)

Notwithstanding the general unsuitability of water-based portable extinguishers for electrical fires (i.e. fires involving live electrical equipment), the data in the box show that hose streams may safely be used, provided the recommended safe distances related to both voltage and nozzle size are observed. Automatic and manual fixed water spray systems are likewise universally accepted for protecting such electrical hazards as oil-filled transformers and switchgear. As far back as 1937, Underwriters' Laboratories Inc, US, published the following statement concerning electrical conductivity and one widely adopted form of water spray protection<sup>3</sup>:

*It is practicable to install these projectors, for protection of electrical apparatus, in such a manner that no hazard to the apparatus or to the operating personnel from electrical conductivity will be involved, without interfering with the effectiveness of this form of fire protection.*

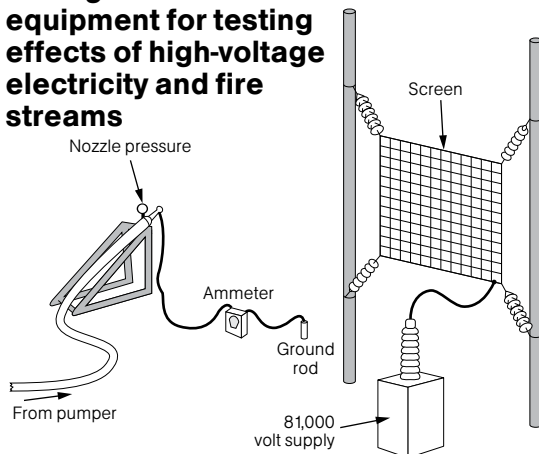
However, minimum clearances from energised electrical apparatus must be observed. NFPA 15 *Standard for water spray fixed systems for fire protection*, for example, requires that clearances between any portion of water spray equipment and unenclosed or uninsulated live electrical components, at other than earth potential, be not less than those

**Table 1: Limits of safe approach to live electrical equipment**

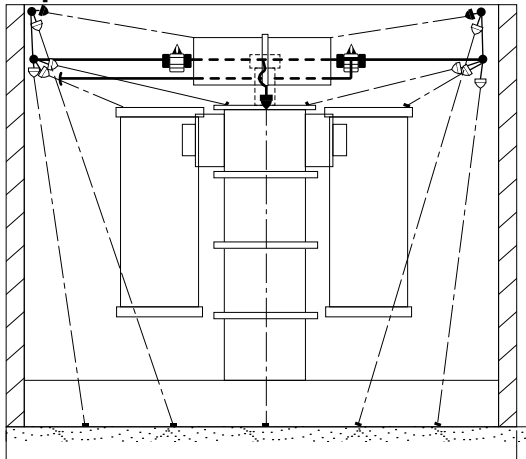
Voltage	Minimum safe distance (feet)		
	Between conductors	5/8in solid stream nozzle	Spray or fog stream nozzle
To earth			
2,400	4,160	15	4
4,800	8,320	20	4
7,200	12,500	20	4
8,000	13,800	20	4
14,400	24,900	25	4
16,000	27,600	25	4
25,000	44,000	30	6
66,500	115,000	30	8
130,000	230,000	30	14



## Arrangement of equipment for testing effects of high-voltage electricity and fire streams



## Water spray protection 5000 kilovolt-ampere transformer



given in Table 2 (for altitudes up to 1,000 m).

The suitability of high-expansion foam for use on energised electrical equipment has been discussed elsewhere<sup>4</sup>. It is clear that the ratio of the specific resistance of a foam to that of its generating solution increases more or less linearly with expansion ratio<sup>5</sup>. From the shock hazard standpoint, however, it is clearly important that electrical equipment be de-energised before entry to the foam is permitted, irrespective of foam expansion ratio. On the other hand, US test results<sup>6</sup> indicate that high-expansion foam can be safely used on complex electronic equipment with minimum damage to the equipment.

A final point on water and electricity concerns the application of water to electrical apparatus such as switchboards and similar hazards at industrial, commercial and institutional premises. The information presented here shows that automatic sprinkler protection is appropriate for such areas and complex high-value electronic installations such as electronic data processing facilities. Fast-acting special hazard protection may be appropriate for the latter class of risk, but it is obviously desirable to back this up with complete automatic sprinkler protection, either conventional or pre-action. ■

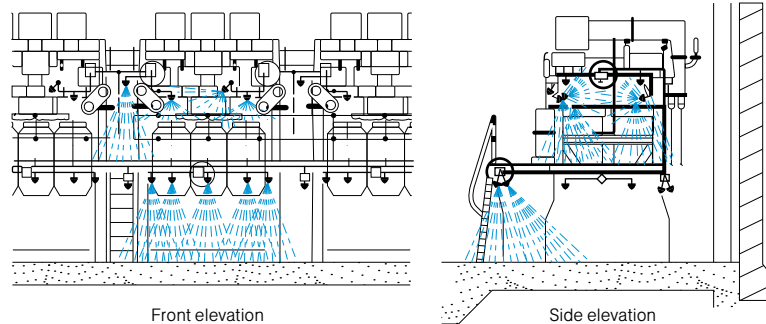
**Table 2: Clearance from water spray equipment to live, uninsulated electrical components**

Nominal system voltage (kV)	Maximum system voltage (kV)	Design BIL** (kV)	Minimum* (in.)	Clearance (mm)
13.8	14.5	110	7	178
23	24.3	150	10	254
34.5	36.5	200	13	330
46	48.3	250	17	432
69	72.5	350	25	635
115	121	550	42	1067
138	145	650	50	1270
161	169	750	58	1473
230	242	900	76	1930
		1050	84	2134
345	362	1050	84	2134
		1300	104	2642
500	550	1500	124	3150
		1800	144	3658
765	800	2050	167	4242

\* For voltages up to 161 kV, the clearances are taken from NFPA 70 National Electrical Code. For voltages 230 kV and above, the clearances are taken from Table 124 of ANSI C2 National Electrical Safety Code.

\*\* BIL values are expressed as kilovolts (kV), the number being the crest value of the full wave impulse test that the electrical equipment is designed to withstand. For BIL values that are not listed in the tables, clearances may be found by interpolation.

## Water spray protection electrical switch unit



**This concludes Water—the essential extinguishant, Part Two—water and electricity. Look out for Part Three—water additives and modifications in the Spring 2012 edition of Fire Australia.**

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# Mapping fire in the TOP END

A Bushfire CRC researcher is changing the way the effects of bushfires are mapped in northern Australia.

By Nathan Maddock,  
*Fire Australia* magazine  
Joint Editor

**B**ushfires in the southern parts of the country may have occupied most of the national attention in recent years, particularly in the media. But a Bushfire CRC researcher has been using satellites and high-tech sensors to map the effects of fire in the delicate ecosystems of northern Australia.

For the past few years, Darwin-based researcher Dr Andrew Edwards has been mapping bushfire severity in the tropical north with the assistance of satellites and a helicopter, as part of the Bushfire CRC *Understanding Risk* program. Dr Edwards completed his PhD with the Bushfire CRC in 2011 and has now begun a Bushfire CRC-funded postdoctoral fellowship to extend and operationalise his previous research.

While northern Australia has approximately one person for every four square kilometres, the tropical savannahs across northern Queensland, Western Australia and the Northern Territory—woodland ecosystems of grass and scattered trees—cover approximately 25% of the country. They receive large amounts of rain, with 90% of their 1,000-millimetre average rainfall occurring during the wet season (October to March). A large amount of fuel grows during the wet season, drying rapidly once the rain stops, resulting in prime fire conditions.

Dr Edwards's PhD research investigated if it was possible to detect the effects of fire in tropical savannahs by using a handheld sensor in a helicopter. He measured the reflected light from land areas that represent various fire severities. The collected data were correlated with ground measurements to determine which of the fire-affected components had a detectable light signal, allowing description of the fire severity.

The effects of a bushfire late in the dry season.



Dr Edwards covered a lot of territory. “Most of the data were collected from the helicopter. I had a handheld sensor as the helicopter hovered, establishing the exact GPS coordinates of the area studied.

“I was looking at the effects fire has on the environment—how severely the vegetation is burnt and relating that to the energy released by the fire.

“Measurements were also taken from the ground of the effects of a fire to validate the data collected from the air. Both sets of data were correlated, and an algorithm established that maps fire severity from satellite images covering hundreds of square kilometres.”

The data are useful for a number of purposes, Dr Edwards said.

“It helps conservation management planning, greenhouse gas emissions accounting and assisting in determining the efficacy of fire breaks.

“With fire severity we’ve got this added parameter that provides a lot more detail across all of these areas, assisting in calculations and modelling exercises,” Dr Edwards added.

Under the extreme climate of the north, prescribed burning is applied widely and strategically to reduce the effect of bushfires.



Dr Andrew Edwards boards the helicopter holding a spectrometer.

Before Dr Edwards's research, fire and land managers had relied on satellite data to detect bushfires and map their extent. Strategic fire management programs were based on the history of past fires, using fire seasonality to estimate the effect a bushfire might have had on the environment. The rule-of-thumb was that bushfires occurring later in the dry season were more severe than bushfires that occurred earlier in the dry season.

Now, thanks to Dr Edwards's research, a reliable means of mapping fire severity will provide much-needed information about the effectiveness of prescribed burns and the quantity of fuel consumed that creates greenhouse gas emissions. His research will also provide a direct correlation between the effects of fire on habitats for a variety of animals.

Australia's tropical savannahs are the largest single source of greenhouse gas emissions in Australia, emitting 2% of our greenhouse gases in 2005. Reducing both the severity and the area burnt by bushfires reduces these greenhouse gas emissions.

From here, Dr Edwards is expanding his PhD research in his postdoctoral work.

"The next step is calibrating the data and

applying it, and then looking to extend it to cover the rangelands. Together with the tropical savannah, this has the potential to cover 75% of the country."

Calibration is a way of training the satellite image information with on-the-ground information to categorise something situated on the ground. This is required to capture as much variation in the effect of a fire as possible.

Dr Edwards added that the success of such a large project will involve many end users of the research, including field ecologists, conservation staff, fire management staff, pastoralists, Indigenous rangers and other land managers.

The Bushfire CRC, Bushfires NT, the North Australia Indigenous Land and Sea Management Alliance, CSIRO, Western Australia's Department of Environment and Conservation and Charles Darwin University have supported the project.

It is hoped that providing timely cost-effective mapping will save time and resources for all of these agencies, and will have the potential to enable fire managers to reduce the area affected by fire.

And in one of the most fire-prone areas of the world, that can only be a good thing. ■



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# Executive Fire Officer Program

Each year the Australasian Fire and Emergency Service Authorities Council (AFAC) invites fire, land management and emergency service agencies to nominate individuals for the Executive Fire Officer Program (EFOP) offered by the US Fire Administration/National Fire Academy at Emmitsburg, US.

The EFOP is designed to provide senior fire and emergency officers and others in key leadership roles within the fire and emergency services with the skills and knowledge to:

- transform fire and emergency services organisations from reactive to proactive, by emphasising leadership development, prevention and risk-reduction
- transform fire and emergency service organisations to reflect the communities they represent
- develop the executive-level knowledge, skills and abilities necessary to lead transformations, conduct research and engage in lifelong learning.

**Mark Dalrymple**, Acting Assistant Chief Fire Officer at the Metropolitan Fire and Emergency Services Board (MFB), completed the program in early 2011. Mark chats to AFAC about the EFOP and how it has contributed to his development as a leader within the emergency services.



Mark Dalrymple MPubPol&Admin, Assoc Dip (Fire Tech), Dip Health (OH&S), EFO (USA), MIFireE, MIPAA

By Shesiedo Ringdahl,  
Fire Australia magazine  
Joint Editor

**SHESIEDO RINGDAHL: What was your experience of the EFOP?**

**Mark Dalrymple:** One of the key aspects of the program was the opportunity to network and meet other people from overseas fire services and to gain an insight into how they operate and the way they apply the learnings and the theories of leadership from a different perspective.

It was interesting to note that as an Australian completing a US-centric program, many of my fellow candidates were very interested in how the Australian fire services operate. Effectively, the structure of all fire services is the same. However the way we operate is extremely different from the US operational systems

and they were very interested in how we do business. I believe that what Australia does in the fire services is world-class.

**SR: How has the EFOP developed you as a leader at the MFB?**

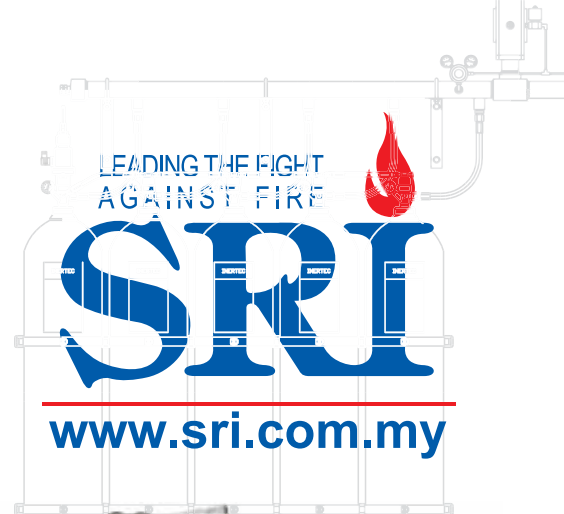
**MD:** The program is a combination of theory and case-study analysis, which I found to be beneficial as it has really helped me to hone and apply the learnings by seeing examples of the different types of leadership styles as applied in an emergency management framework. One of the texts, *Leadership on the line: staying alive through the dangers of leading*, was an invaluable resource as it focussed on adaptive leadership strategies for surviving

and thriving. The text referenced the term 'getting on the balcony', which means stepping back to get perspective but remaining engaged with your team. The program looked at many different case studies encompassing different leadership styles and tactics.

**SR: The program is a significant commitment in addition to your role as a senior operational officer at the MFB. How did you combine undertaking the program in addition to your roles and responsibilities at the MFB? What support did you receive?**

**MD:** The program is definitely a significant commitment, especially as Australian

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candidates complete the program over two years, completing two units a year back-to-back, a month in total. However you are given six months to complete the Applied Research Project (ARP) assessments, which are discussed with your peers and supervisor at the MFB when you return. The ARP is a great opportunity to explore some topic areas that your organisation may want to pursue. The course itself is quite structured, including the ARP, which allows you to plan, prioritise and organise your time effectively. At the completion of each subject and when completing the ARP back home, you are assigned a mentor from the academy, often retired fire chiefs and/or academics, which was incredibly valuable. The mentor relationship allowed you to discuss your ARP and receive feedback before submitting your final project. The evaluation feedback sessions with your mentor helps you keep on track and develop your project. There is a lot of juggling with work and family commitments, and the MFB was generous with allowing me the time off needed to research and write my ARP. Throughout the program I felt supported by both my mentor and my supervisor.

**SR: How did the program translate to the Australian context?**

**MD:** The framework between the two fire services is very similar, but the operational systems are quite different. At times it was difficult translating the learnings in this area into the Australian context, however, it has really helped me look at how the fire

service operates 'from the balcony'. One of the challenges I faced was being able to interpret their operational terms into the Australian fire services context. The US fire services have a lot of operational systems in place that the Australian fire services don't. For example, the majority of US firefighters are also paramedics so there were some challenges in interpretation when discussing legal mandates and how they might apply in this instance. While the course is very US-centric and there are many differences in how the Australian fire services operate, there were also many similarities that I could draw on.

**SR: How have you been able to draw on what you have learnt and apply this to your role?**

**MD:** A highlight of the course for me was the field trip to Gettysburg battlefield where the American Civil War was fought in 1863. The field trip was used as a case study to illustrate the leadership traits and styles of each of the generals in the two armies, the strategies developed and employed, their decision-making processes, how leadership can be used to influence human behaviour and the consequences of your leadership decisions, which I was able to link back to the fireground through our chain of command. It was a great opportunity to look at the leadership styles from a behavioural side and a physical side. The links and similarities between the army and the fire services are quite compelling. It was a different and left-of-field way to finish the course and to

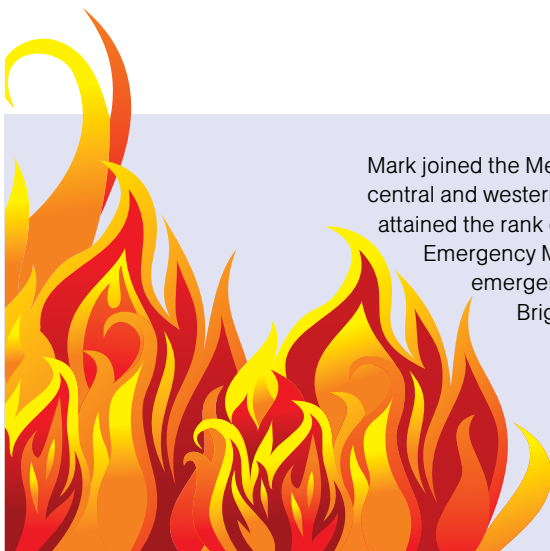
highlight the types of leadership styles used in different services.

**SR: What are you doing to ensure you continue to grow and develop as a leader?**

**MD:** In addition to regularly referring to course materials and reflecting on my research projects, I have found that maintaining a relationship with my peers on an ongoing basis has allowed me to continue to broaden my awareness and understanding of the different operating systems across the fire services.

An outcome I hope to achieve is to be able to go back to the National Fire Academy in the United States as a guest speaker for the EFOP and talk more about fire services on an international level, which I think would broaden course participants' awareness of how we operate and give the course an international perspective. I was fortunate enough to be a part of the selection and interview panel for the 2013 EFOP candidate. It was an opportunity for me to reflect on how far I have come since being interviewed and completing the program. The program has taught me to validate research and confirm my decision-making processes. While it is a huge commitment, the program is highly recommended. ▀

**Further information on the Executive Fire Officer Program can be found on the AFAC Knowledge Web at [http://knowledgeweb.afac.com.au/training/leadership/executive\\_fire\\_officer\\_program](http://knowledgeweb.afac.com.au/training/leadership/executive_fire_officer_program)**



Mark joined the Metropolitan Fire Brigade in 1980 and has worked primarily in Melbourne's central and western districts, which include the CBD and major industrial footprints. He attained the rank of Commander in 2001. Mark's substantive position is Commander, Emergency Management, Office of the Chief Officer. Here, his roles include emergency management reform, and coordinating secondments and the Brigade implementation of the One Source One Message community warning platform. More recently, he has acted in the position of Acting Assistant Chief Fire Officer, Northwest Metro Fire Safety.

During his career Mark has worked in various departments within the MFB, including Operations, Structural Fire Safety, Corporate Governance, Training, Learning and Development, Operational Communication and more recently the newly formed Office of the Chief Officer.

# Experienced Persons Extinguishing Agent Handling Licences in transition

By Carlos Santin,  
Executive Officer,  
Ozone Protection

The Fire Protection Industry Ozone Depleting Substances or Synthetic Greenhouse Gases (ODS & SGG) Board has approved the roll-out of Qualified Persons Extinguishing Agent Handling Licence 2, 3 and 5, which began 1 July 2012. When a technician reissues a Licence 2, 3 and/or 5, a 15-month transition period will be provided to allow them to acquire a Qualified Persons Licence.

All licence holders will be individually notified about their own transition. This will involve a reissue

of the licence, together with a transition information pack to help with the process.

## Qualified Persons—Extinguishing Agent Handling Licence 2 and 3

The 15-month transition period (from the current licence expiry date) applies to holders of Experienced Persons Extinguishing Agent Handling Licences 2, 3 and 5 when transitioning to the equivalent Qualified Persons Licence.

Units of Competency	Licence		
	2—Fixed System Installation and Decommissioning	3—Fixed System Testing and Maintenance	5—Warehouse Maintenance
PRMPFES03C Safely move materials and loads in the workplace	✓	✓	✓
PRMPFES06C Prepare for installation and servicing operations	✓	✓	-
PRMPFES25C Inspect, test and maintain gaseous fire suppression systems	-	✓	-
PRMPFES43A Prevent ozone depleting substance and synthetic greenhouse gas emissions	✓	✓	✓
PRMPFES44A Interpret installation requirements for gaseous fire suppression systems	✓	-	-
PRMPFES45A Install gaseous agent containers and actuation devices	✓	-	-
PRMPFES46A Decommission gaseous agent containers and actuation devices	✓	✓	-
PRMPFES47A Inspect and test control and indicating equipment	-	✓	-
PRMPFES48A Receive and dispatch ozone depleting substance and synthetic greenhouse gas containers	-	-	✓
PRMPFES49A Recover, reclaim and fill operations for ozone depleting substances and synthetic greenhouse gases	-	-	✓
PRMPFES50A Monitor storage operations for ozone depleting substances and synthetic greenhouse gases	-	-	✓
PRMPFES53A Participate in workplace safety arrangements	✓	✓	✓

To find an RTO that may be able to help:

- Type <http://www.fpa.com.au> into a web browser to load the Fire Protection Association Australia page
- On the right side, click the Ozone and Greenhouse tab, and the Ozone Depleting Substances (ODS) and Synthetic Greenhouse Gases (SGG) page appears
- On the left side, click the Registered Training Organisations tab, to load the RTO page. View the list of RTOs that deliver the Units of Competency required for Qualified Persons Licences 1, 2, 3, 4 or 5
- Contact your selected RTO to discuss the next step in the process





For Qualified Persons Licences 2 and 3, the required units of competency are shown in the table on page 40.

### Process of finding a Registered Training Organisation

Contact a Registered Training Organisation (RTO) that offers the units of competency specified for the Qualified Persons Licence you need, and talk to them about:

- applying for partial or full Recognition of Prior Learning (RPL)
- completing a program of 'gap' or whole-of-unit training
- applying for a combination of both of the above.

Contact your selected RTO to discuss the next step in the process.

### Process of applying for a Qualified Persons Licence

Finally, submit your application, together with certified copies of one or more Statements of Attainment listing all the Units of Competency required for the Qualified Persons Licence you need, to:

Executive Officer  
 Fire Protection Industry (ODS & SGG) Board  
 PO Box 1049  
 Box Hill Vic 3128  
 Tel 03 9890 1544  
 Fax 03 9890 1577  
 Email ozone@fpaa.com.au

### Licence transition example

On 4 July 2012, Robert Smith received his reissue of Experienced Persons Extinguishing Agent Handling Licences 2 and 3. Robert knows it is important to send his reissue of licence together with payment to remain licensed and be provided with 15 months to transition to a Qualified Persons Licence. Robert checks the Registered Training Organisation (RTO) list included in the transition information pack and calls one that offers the units of competency he needs. Robert chooses one of the RTOs and enrolls in those units of competency. Robert decides to undergo assessment only as he feels he has the experience and knowledge to be deemed competent. The RTO then arranges for Robert to complete the theory and practical assessments required for competency. Robert undergoes assessment and is later informed by the RTO of his competency in the particular units. He receives Statements of Attainment for each unit by mail. Finally, Robert submits an application, together with certified copies of one or more Statements of Attainment listing all the units of competency required for the Qualified Persons Licences 2 and 3.



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## Principles of fire safety, part eight

# FIRE DOORS—PRINCIPLES OF OPERATION

Building occupants take for granted the inherent safety of a modern building, perhaps only really noticing the active fire safety elements like portable fire extinguishers, fire detectors and automatic fire sprinklers. However, buildings also provide passive fire safety in their design and construction. This article is the first in an ongoing series that sets out the principles of operation of fire doors.

By Russ Porteous, CEO, Firewize

Members of the public may find it difficult to identify a fire door. However, fire doors exist in many forms throughout a building. They are used to separate one fire compartment from another, such as those used to maintain the integrity of a fire-isolated stairwell or a sole-occupancy unit.

### Background—the National Construction Code

Buildings are constructed in Australia in accordance with the requirements of the *National Construction Code* (the Code). The Code extensively sets out the performance requirements and functional statements necessary to satisfy the objectives of the Code.

One of the objectives (CO1) relates to the fire resistance (Section C of the Code). The objective of Section CO1 is to:

- a safeguard people from illness or injury due to a fire in a building
- b safeguard occupants from illness or injury while evacuating a building during a fire
- c facilitate the activities of emergency services personnel
- d avoid the spread of fire between buildings
- e protect other property from physical damage caused by structural failure of a building as a result of fire.

To support this objective, the Code sets out two functional statements. These are:

- 1 CF1 states a building is to be constructed to maintain structural stability during fire to:
  - a allow occupants time to evacuate safely

Damaged fire door.



- b allow for fire brigade intervention
- c avoid damage to other property.
- 2 Safeguards are set out to prevent the spread of fire within a building:
  - a so that occupants have time to evacuate safely without being overcome by the effects of fire
  - b to allow for fire brigade intervention
  - c so that fire does not spread to sole-occupancy units providing sleeping accommodation
  - d so that fire does not spread to adjoining fire compartments
  - e so that fire does not spread between buildings.

The Code then outlines a series of performance requirements necessary to assist architects, designers, surveyors, engineers, builders, contractors and manufacturers to achieve the objective.

### Fire-resistance level

It is worth explaining an important principle describing fire resistance, called the fire-resistance level (FRL). The FRL is the grading period in minutes that describes the structural adequacy, integrity and insulation properties of a fire-resisting structure.

The FRL is expressed in the following order:

#### Structural adequacy/Integrity/insulation

In relation to the FRL, each of these three characteristics means the following:

- Structural adequacy: the ability to maintain stability and an adequate load-bearing capacity as determined by AS 1530.4
- Integrity: the ability to resist the passage of flames and hot gases specified in AS 1530.4
- Insulation: the ability to maintain a temperature on the surface not exposed to the furnace below the limits specified in AS 1530.4.

As an example:

FRL	Structural adequacy	Integrity	Insulation
60/60/60	60 minutes	60 minutes	60 minutes
-/120/30	0 minutes*	120 minutes	60 minutes

\*non-structural (non-load-bearing) elements such as a fire door or fire damper.

## Compartmentation

Buildings are constructed to provide protection for building occupants and emergency services from fire, limit the spread of fire and maintain the structural integrity of a building.

Compartmentation is one method used by building designers to achieve this objective. Compartmentation is the process of separating one part of a building from another through the use of barriers to fire such as walls and/or floors.

In a perfect world a compartment would be completely sealed to prevent the spread of fire. However, as we know, buildings also require services such as plumbing, mechanical ventilation and electrical cabling. These services penetrate through the fire-resisting structure, affecting the integrity of the compartment.

The most obvious openings in any compartment are the doors providing access between areas to the occupants of the building. Protecting these openings is where fire doors come in!

## Fire doors and compartmentation

A fire door is a type of fire-resisting structure to protect an opening in a compartment. There are two main types of fire door. These are hinged doors (arranged as a single door or pair of doors) and sliding doors.

In most circumstances, a hinged fire door is used to protect an opening. However, for large openings, a sliding fire door may be required.

The FRL (commonly called the rating of a fire door) is typically expressed in terms of its integrity and insulation properties, as shown by the table below.

FRL	Structural adequacy	Integrity	Insulation
-/120/120	-	120 minutes	120 minutes

There are many methods and materials used to construct a fire door including timber, sheet metal, and proprietary fire-resisting materials. Typically, each door is constructed to suit the FRL requirement of the compartment it is protecting.

Doors have six primary features:

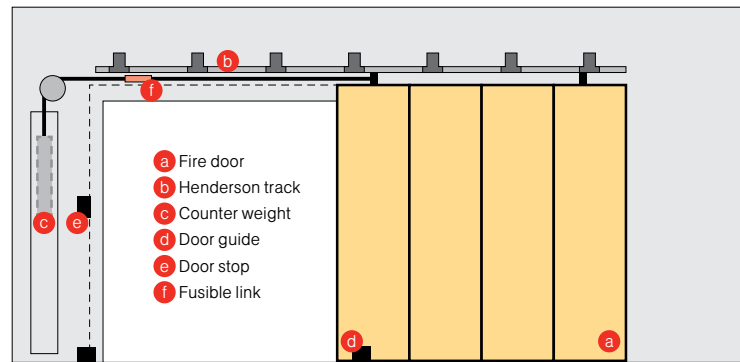
- 1 compliance tag
- 2 door closer
- 3 door frame
- 4 fire door itself
- 5 handle or lockset
- 6 hinge or slide.

These features are labelled on the diagrams showing the principles of operation.

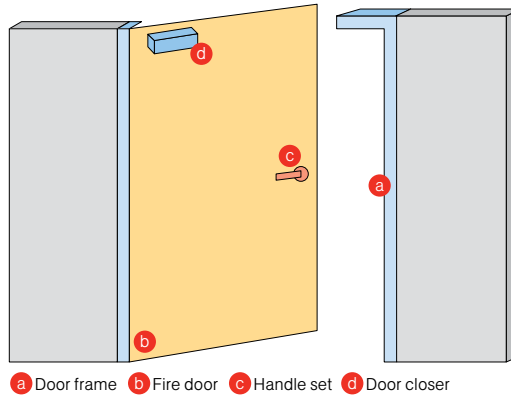
In an area where the door needs to be held in the open position, the door may be fitted with a door hold-open device. These devices release the door so that it closes automatically in an emergency.

The two most common methods to hold a door in the open position are a magnetic door holder connected to a fire detection and alarm system, and a fusible link.

## Fire door sliding



## Fire door hinge



Magnetic door holders are permanently electrically energised devices. In a fire alarm condition, the energy to hold open the door is removed, causing the door to close.

The fusible link, however, is a mechanical device that retains the door in the open position. When a fusible link is exposed to enough heat energy, it releases, allowing the door to close.

## Maintenance requirements of fire doors

Australian Standard AS 1851 sets out the requirements for the periodic survey and preventative maintenance requirements of fire doors. Periodic inspections are undertaken to identify, record and report in a logbook any condition that is likely to adversely affect the performance of the fire door. AS 1851 sets out detailed requirements for these inspections.

## Summary

Fire doors are required components of a building that help maintain the fire resistance of compartments. Fire doors help achieve this because they are manufactured and installed to provide integrity and insulation in a fire. Once installed, fire doors should be periodically inspected to ensure there is no damage or unapproved door hardware likely to affect their performance. ■

**About the author:** Russ Porteous is the CEO and one of the founders of Firewize (formerly Maintenance Essentials). He has over 22 years' experience in the installation and maintenance of fire and essential safety measures. Russ is a contributor to a variety of Australian Standards including AS 1851 for the Maintenance of Fire Protection Systems and Equipment. Russ is regularly invited to speak at industry conferences as a subject matter expert and is also a popular blogger and author.



By Joseph Keller,  
FPA Australia  
Communications  
Manager and Fire  
Australia Joint Editor

## Fire safety at Sydney airport boosted with new Mk8 fire vehicles

In May the Federal Minister for Infrastructure and Transport, the Hon Anthony Albanese, commissioned four high-visibility Mk8 (pronounced 'Mark 8') fire rescue vehicles for its aviation rescue and firefighting (ARFF) operation at Sydney airport. This will boost aviation safety for the 36 million passengers who use the country's busiest airport every year.

The Austrian-built Rosenbauer Mk8 ultralarge fire vehicles, valued at over \$1 M each, are part of a \$124 M investment by Airservices Australia to modernise fire and rescue services at the nation's busiest airports. Airservices Australia is achieving this through upgrading and replacing fire stations, equipment and vehicles.

The Mk8s replace fire vehicles at Sydney airport that are up to 20 years old. As the largest firefighting vehicle in Australia, the Mk8 weighs 30 tonnes when fully loaded with 10,000 litres of water and foam. Able to accelerate to 80 kilometres per hour in under 30 seconds, the Mk8 enables firefighters to respond to any incident at the airport within three minutes. The Mk8s are equipped with roof and front bumper monitors so they can empty their tank in approximately two minutes.

Additionally, Airservices Australia recently completed an upgrade of the fire station's Fire Control Centre, replacing analogue communications with a standardised digital system. The upgrade incorporated the latest technology, integrating communications and incident management resources.

Ensuring fire safety at Australia's busiest airports is critical, given the huge movement of people and the many millions of dollars worth of aircraft and equipment on the tarmac at any given time. In 2010, almost 8,000 aircraft and airport emergency assistance requests were made, 2,000 of them at Sydney airport alone.

The four Mk8s are the flagship firefighting vehicles of the 113-strong fleet of high-performance emergency response vehicles operated by Airservices Australia. This fleet also includes specialised difficult-terrain vehicles and water rescue boats.

Each Mk8 carries a variety of firefighting, rescue and emergency response equipment. This includes hoses, branches (nozzles), breathing apparatus and portable handheld radios. Other equipment includes a powered rescue unit, disc cutter, fire extinguisher, fire blanket, ladder, axe, first-aid kit and a rescue tool box.

The primary monitor on top of the vehicle cabin rotates up to 270 degrees and can discharge 4,800 litres per minute (80 litres per second). It can throw water or foam more than 85 metres. The secondary monitor on the front bumper discharges 1,300 litres per minute (22 litres per second) and incorporates a forward-looking infra-red (FLIR) camera for use in low visibility. ■

**FPA Australia thanks Airservices Australia Media for photos and details featured in this article.**



Federal Minister for Infrastructure and Transport, the Hon Anthony Albanese commissions the Mk8s.

### Mk8 ultralarge fire vehicle

#### QUICK FACTS

- reversing camera
- distinctive 'yellowish green' colour for high visibility in low light
- 8,900 litres of water carried, which can be discharged fully in less than two minutes
- six-cylinder, water-cooled diesel engine (with turbocharger and charge air cooling)
- 489 kW (665 hp) at 2,300 rpm
- four seats (driver, operator and two crew)
- 30 tonnes fully laden
- 225 kg of secondary agents carried
- 120 km/top speed
- 10.87 m long, 3 m wide and 3.6 m high
- 0–80 km/h within 30 seconds
- \$3,000 per tyre.

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# THE CLEVELAND EAST OHIO GAS EXPLOSION 1944

By Barry Lee OAM,  
Past National President,  
FPA Australia



At 2.30 pm on Friday 20 October 1944, an above-ground storage tank holding the liquid equivalent of 90 million cubic feet of natural gas in the East Ohio Gas Company's tank farm began to emit white vapour from a tank seam. The white vapour dropped into nearby sewer lines. The gas in the tank became flammable when mixed with air and exploded at 2.40 pm, followed by the explosion of a second tank about 20 minutes later. Homes and businesses were engulfed by a wave of fire in more than one square mile of Cleveland's east side. The storage tanks had

Left: The remnants of the East Ohio Gas Company's tank farm after the explosion.

Below: One of the two factories destroyed by the fire. The blaze also destroyed 79 homes and eight retail stores.



**“ ... immediately following a spillage of LNG, the vapour is heavier than air because it is at a very low temperature (the boiling point of methane is  $-161.5^{\circ}\text{C}$ ). As with propane at ambient temperature, LNG spills can be very dangerous because the vapour can spread over a wide area.”**

*(NFPA Fire Protection Handbook)*



been built by the East Ohio Gas Company in 1942 to provide additional reserve gas for local war industries.

The fire spread through 20 blocks, involving rows of homes while missing others. The vaporising gas also flowed along gutters into catch basins. Through these it entered underground sewers, intermittently exploding and ripping up pavement, damaging underground utility installations and blowing out manhole covers. 79 homes, two factories and eight retail stores were destroyed. 131 people were killed, 225 were injured and 700 were left homeless. The loss was reported to be between US\$6 M and US\$10 M.

The disaster led to a movement by public utilities and communities around the US and the world to store liquefied natural gas (LNG) below ground. The engineering community reviewed the metallurgy and construction technology for cryogenic gas storage vessels and adopted frequent inspections of LNG piping and accessories. Today's excellent international safety track record for LNG production, storage and transport facilities in Australia, and in other parts of the world, has been greatly influenced by vital lessons learnt from the Cleveland gas explosion. ■



The explosion generated a wave of fire which spread 20 blocks, killing 131 people.

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## **AFAC and Bushfire CRC Conference—Diverse country. Common ground.**

**28–31 August 2012**

### **Perth Convention and Exhibition Centre**

Australia and New Zealand are diverse across their landscape, climate, population and social networks. However, within this context our fire and emergency management industries have common goals and we share each other's challenges. This conference is designed for delegates to explore, examine and debate key issues facing our sector.

The conference brings together staff and volunteers from parks and land management, fire and emergency management, Federal, State and Local Government working in emergency management and recovery roles, incident management, pastoralists, researcher, policy and law makers, and those working in the mining, energy and water sectors.

### **Highlights**

- **Field trips**—Three optional one and two-day field trips have been organised to provide delegates with a broader understanding of the diversity of WA and what is occurring in relation to emergency management in these locations. Field trips will visit the Great Western Woodlands and Wheatbelt, Mandurah and Kwinana.
- **Research Forum**—The Bushfire CRC will host a forum featuring research from across all hazards in the emergency sector. This day is an opportunity for more intensive discussion between researchers and fire and emergency personnel on the breadth of scientific study now underway, not only at the Bushfire CRC, but also in other research centres in Australia and internationally. Be sure to register for the Research Forum in Perth.
- **Two-day conference**—Hear from leading national and international speakers such as The Hon Barry Jones, AO; Demographer Bernard Salt; WA Chief Scientist Professor Lyn Beazley, AO; Chief James Schwartz of the Arlington County Fire Department, MFB CEO Nick Easy and many more high-profile speakers.
- **Gala dinner**—Catch up with old colleagues and meet new ones at the conference gala dinner. With delegates from the US, Europe, Asia and across Australia, the conference is a prestigious opportunity to network, share and learn.
- **Professional development program**—Eight professional development sessions will be held for delegates, including Communicating in Recovery, Ethics and Grant Writing, Incident Management Systems (Australasian Inter-Service Incident Management System or AIIMS), Spatial Technology and many more.

The program features high-profile national and international speakers over the four days.

**For more information and the full conference program visit <http://www.afac2012.org>**

## **Passive Fire Protection—industry update seminars**

**SA 3 September**

**WA 5 September**

**NSW 7 September**

**TAS 10 September**

**VIC 12 September**

**QLD 14 September**

These one-day seminars will provide comprehensive updates on many aspects of passive fire protection.

The seminar program will provide a cross-section of information on important passive topics, including the maintenance revision (AS 1851), bushfire-prone buildings, general procedural changes and specific equipment updates.

Key industry representatives from the FPA Australia Technical Advisory Committee TAC/19 *Passive Fire Protection* will present the topics. Local speakers will present updates on state-

based legislation and changes. The speakers are all leading professionals in their fields and bring a wealth of knowledge and experience to the seminar series. All speakers will be available for questions and discussions during the scheduled panel sessions and at the conclusion of the seminars.

The series will cater to a broad range of professionals, including:

- building consultants
- building owners and property managers
- building surveyors and certifiers
- construction engineers
- electrical contractors
- fire prevention engineers
- fire servicing companies
- fire systems designers
- installation contractors
- insurance underwriters and brokers
- risk management consultants.

## **Fire Australia 2012 Conference and Exhibition**

### **The true cost of fire—Life Property Environment**

**14–16 November 2012**

### **Melbourne Convention and Exhibition Centre**

Fire Australia 2012 is the premier fire protection industry conference, attracting key personnel, peers and significant representation from businesses, government and associations.

This year's theme looks at the impact fire can have on our people, our assets and our surrounding environment.

With speakers from across Australia and overseas, the organisers aim to ensure all presentations are topical and current, affording everyone in attendance additional knowledge and information.

Based on feedback from the 2011 conference the program will expand its inclusion of interactive workshops and incorporate a provocative debate session that saw success in Hobart in 2009.

The exhibition in 2012 is anticipated to be the largest to date and will draw many attendees from different industries.

The program will incorporate two-and-a-half days of presentations, workshops and social activities, including a cocktail reception, conference dinner and farewell lunch, ensuring plenty of networking opportunities.

### **Benefits of attending**

- burn demonstration
- extensive social program
- great networking opportunities with many affiliated industries
- huge range of exhibitors
- industry debate session
- industry-leading presentations and concurrent workshops
- international keynote speakers.

### **Who should attend**

Fire Australia 2012 will draw delegates from all states and territories of Australia, and from New Zealand and the Asia-Pacific region. The conference format will ensure industry issues are professionally presented. The organisers expect a strong attendance from industry professionals including:

- architects, building designers and specifiers
- building surveyors
- environmental engineers and sustainability managers
- facility managers, property developers and building owners
- fire consultants and engineers
- fire equipment manufacturers, distributors and installers
- fire service personnel
- insurance professionals
- regulatory authorities and legislators.

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# FPA AUSTRALIA TAC AND SIG UPDATE

FPA Australia has several Technical Advisory Committees (TACs) and Special Interest Groups (SIGs), which consist of volunteers from the membership. These committees improve the quality of products and services in the industry by:

- ▶ assisting in the preparation of submissions to regulatory bodies
- ▶ contributing to the technical policies and documentation of the Association
- ▶ providing input into the development of industry guidelines and Australian Standards.

This is the first of what is to be a regular update on the main activities and discussions at the TACs and SIGs. This update is based on the May round of TAC meetings. The next round of meetings will be in August 2012.

Note that participating and

corresponding memberships to these committees are available. Corresponding membership provides a more in-depth summary of the TAC or SIG activities. ■

If you would like to find out more or become involved with the TACs and SIGs, visit <http://www.fpaa.com.au/technical> or email [technical@fpaa.com.au](mailto:technical@fpaa.com.au)

**TAC/1 Maintenance of fire protection systems and equipment** This committee is developing documentation to support our members and industry in applying the revision of AS 1851 when released. This includes summaries of each state and territory's legislation for maintenance and a position statement on applying the latest edition of AS 1851.

**TAC/2 Fire detection and alarm systems** The committee is taking an active interest in the FP-002 revision of AS 1670.1 and the adoption of ISO standards. It is also working on a number of documents to complement current standards.

**TAC/3/7 Portable and mobile equipment** The committee has been seeking a revision of the Australian Competition and Consumer Commission (ACCC) mandatory standard for portable fire extinguishers (non-aerosol) so that it requires the current, 2007 edition of the AS 1841 standards. Following discussions with the ACCC, the committee recently sent a letter to them outlining the proposal for this revision.

**TAC/4/8/9 Fire sprinkler and hydrant systems, tanks and fixed fire pumps** The committee continues to contribute to the revisions of AS 2118.1, AS 2941 and AS 2419.1. It is also working on a Good Practice Guide on sprinkler system monitoring requirements.

**TAC/11/22 Special hazard fire protection systems** The committee has developed a cylinder safety (transport) cap Reference Document to help technicians identify the relevant cap needed where cylinders in the field are found to have no cap. This will ensure the safe transport of cylinders.

**TAC/17 Emergency planning** The committee has drafted Information Bulletins on evacuation diagrams and the inclusion of emergency planning in alternative (fire engineered) solutions.

**TAC/18 Fire safety and TAC/19 passive fire protection** These committees have been working on a Good Practice Guide for the specification and application of intumescent coating systems. It is hoped the guide will be completed and released in the next few months.

**TAC/20 Bushfire safety** Discussion has focussed on suggestions for inclusion in the scope of the revision of AS 3959 when it is discussed at the next FP-020 meeting.

**TAC/T Training** The committee is considering the development of training for work on (or for) systems and equipment in hazardous areas.

**IC/SIG Inspectors and certifiers** This SIG is developing documentation on what a fire protection inspector and certifier does, as the term for and role of such people varies greatly across Australia.



## **FP-001 Maintenance of fire protection equipment**

The committee has been through the public comment, Standards Australia has advised the changes and the ballot draft has now been released to FP-001.

## **FP-002 Fire detection, warning, control and intercom systems**

The project proposal for the revision of AS 1668.1, AS 6183, AS 4487 and AS 14520 to move the detection and control elements of these standards to AS 1670.1 and address identified issues has been approved. A number of working groups have been formed and begun to work on this.

Work continues on the adoption of the following International Organization for Standardization (ISO) standards as Australian Standards:

- ▶ ISO 7240-16 *Sound system control and indicating equipment*
- ▶ ISO 7240-20 *Aspirating smoke detectors*
- ▶ ISO 12239 *Smoke alarms using scattered light, transmitted light or ionization.*

## **FP-004 Automatic fire sprinkler installations**

Work continues on the revision of AS 2118.1 *Automatic fire sprinkler systems—general systems* with working groups formed to work on different aspects of the standard.

AS 2118.4 *Automatic fire sprinkler systems—sprinkler protection for accommodation buildings not exceeding four storeys in height* has now been released. The standard specifies requirements for the design, installation and acceptance testing (commissioning) of automatic fire sprinkler systems in accommodation buildings not more than four storeys.

## **FP-008 Fire pumps and tanks**

Work continues on the revision of AS 2941 *Fixed fire protection installations—pumpset systems* with working group meetings held since the original kick-off meeting in February.

## **FP-009 Fire hydrant installations**

Work continues on the revision of AS 2419 *Fire hydrants—system design and installations.* It is hoped that the public comment draft will be released in the next few months.

## **FP-011 Special hazard fire protection systems**

Current FP-011 projects include:

- ▶ revision of AS/NZS 4487 *Pyrogen fire extinguishing aerosol systems* to form a generic aerosol standard and to move the detection and control elements to AS 1670.1
- ▶ revision of AS ISO 14520 *Gaseous fire extinguishing systems* to also move the detection and control elements to AS 1670.1 and to address known issues.

## **FP-018 Fire safety**

The committee has now gone through the public comment for draft amendment 1 to AS/NZS 3837 *Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter.* The document is now with Standards Australia to include the changes to form the draft that will then go to the committee for ballot.

## **FP-024 Bushfire water spray systems**

The committee has been through the public comment draft, Standards Australia has included the changes, and the draft has gone to ballot. A meeting will be held late in June to discuss comments received from the committee on the draft. If approved, it should be published in the next few months. ■



## **AUSTRALIA Fire**

For more details on submitting a contribution or to advertise in *Fire Australia*, please contact the editor.

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