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# AUSTRALIA Fire



## IN THIS ISSUE

SPRING 2014

- 14** Rethinking risk—empowering communities
- 18** Product compliance—the confronting reality
- 22** Preventing fire and protecting assets with oxygen-reduction systems
- 26** Higher than normal risk this fire season
- 28** Learning from adversity at key industry conference
- 30** Sustainable volunteering—how can we do it differently?
- 34** Wormald marks 125 years of fire protection
- 38** Global progress on PPE Standards
- 42** Learnings from the Bushfire CRC—Part 2

### Regular features

- | **5** In this edition
- | **6** News
- | **46** Blast from the past
- | **48** Calendar of events
- | **49** FPA Australia TAC and SIG update
- | **50** Standards Australia update

### ADVERTISER LISTING

- 2** Pertronic
- 4** WBS Technology
- 7** Archer Testing
- 9** CSR Bradford
- 10** Lorient
- 13** Volvo
- 17** Australian Fire Enterprises
- 21** Fire Australia 2015
- 25** FireSense
- 33** Fire Protection Technologies
- 37** Reliable Fire Sprinklers
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- 41** FLIR
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- 52** Viking

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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 and Natural Hazards Cooperative Research Centre (BNHCRC).

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.

**Editorial submissions are welcome and can be sent to joseph.keller@fpaa.com.au.**

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

Our cover: At an emergency, the arrival of highly motivated volunteers not involved with the emergency services is a familiar sight.

PHOTOS: EVE WELCH, UNIVERSITY OF CANTERBURY; BLAZE AID VOLUNTEERS



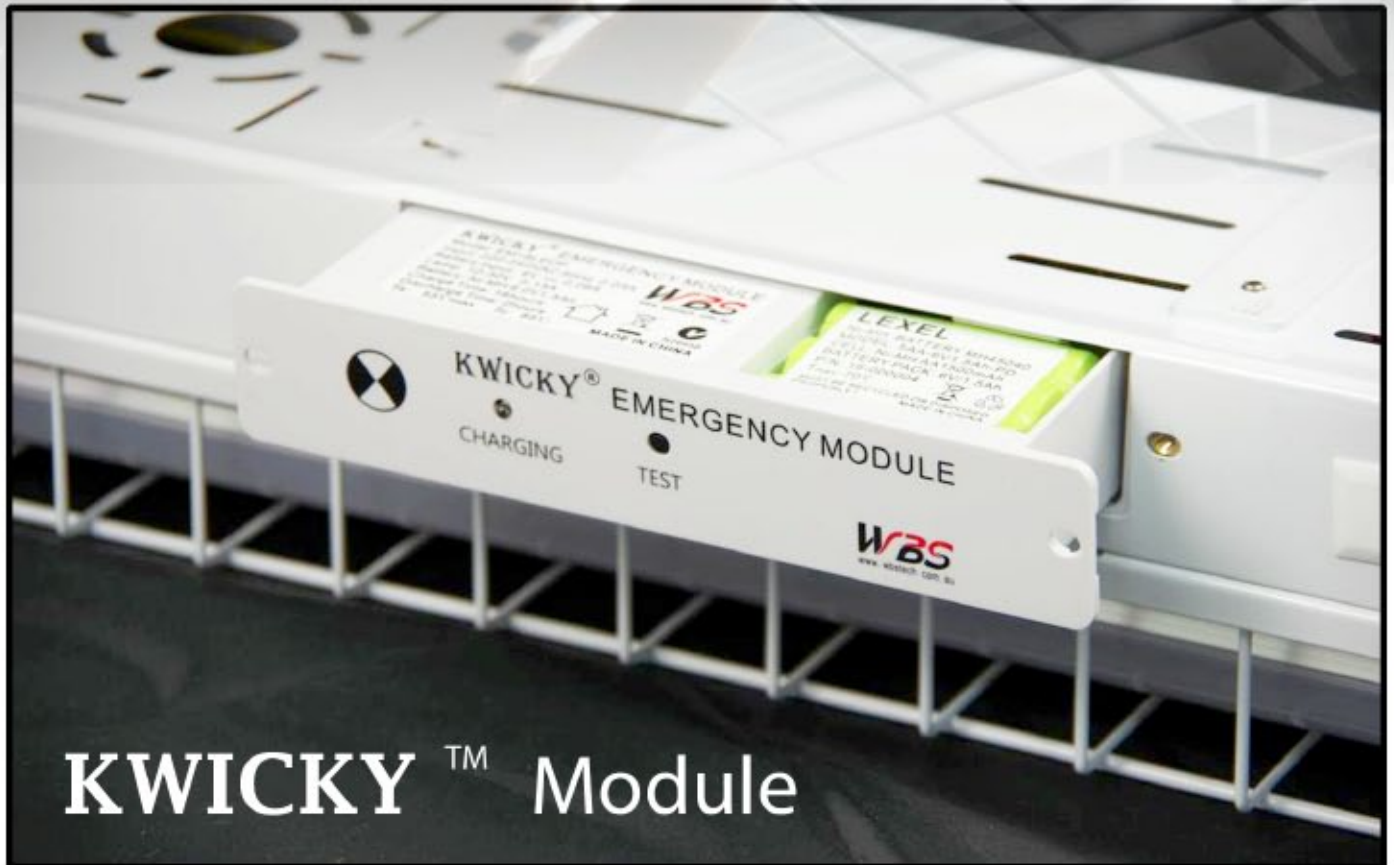
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# WELCOME TO FIRE AUSTRALIA SPRING 2014



**Scott Williams**  
Chief Executive  
Officer,  
FPA Australia

As the national peak body for fire safety, FPA Australia is constantly in pursuit of its vision of leading and supporting a professional industry to minimise the impact of fire on life, property and the environment, for a safer community.

In 2012–13, we delivered on this vision with the introduction and rollout of our Fire Protection Accreditation Scheme (FPAS). The scheme has seen significant support from regulators and industry stakeholders and recently reached an important milestone with more than 500 technicians accredited.

Now the Association is expanding to further raise the professionalism of the industry, with an equal focus on the fire protection products that are imported, certified, sold and installed in Australia.

A strong example of the need for action is the recent nationwide recall of substandard electrical cables by the Australian Competition and Consumer Commission (ACCC). The cables, which were sold through major retailers in 2012 and 2013, are estimated to have been installed in around 40,000 homes and businesses.

This is just one of many potential fire risks from unsafe products sold in Australia. While FPA Australia applauds the ACCC's strong enforcement action, the Association also believes much more must be done to prevent non-conforming products from being sold in the first instance.

FPA Australia has recently released a Position Statement regarding product compliance and evidence of suitability. This Position Statement advocates that fire protection products required to be installed by legislation and/or installed in pursuit of life safety, property protection and environmental protection, must be "fit for the purpose for which they are intended" to achieve minimum safety standards and maintain consumer confidence.

In addition, our lead article in this edition, entitled 'Product compliance—the confronting reality', addresses these issues, explains some of the complexities around product compliance in Australia and outlines the Association's Position Statement.

But our strategy for addressing product compliance does not end there.

The theme of the upcoming Fire Australia 2015 Conference and Exhibition, to be held on Queensland's Gold Coast on 25–26 March, is *Delivering a Fire Safe Future: the right choices for product compliance and approval*.

This conference will focus on the need for making correct decisions from concept to completion and the need for evidence to be provided demonstrating that complying products are selected and installed, to ensure the reliability and longevity of every system.

Fire Australia 2015 will bring together international experts and all relevant domestic stakeholders including regulators, statutory authorities, facility managers, building surveyors and owners, fire safety engineers, certification bodies and, importantly, fire protection companies responsible for the sale of products.

At the conference FPA Australia will also make a significant announcement regarding its plans to better ensure that all fire protection products sold in Australia are fit-for-purpose.

I hope you will join with us as we move towards a more robust and rigorous approach to ensuring fire protection products that are designed to save lives are guaranteed to operate as intended when they are needed.

I am excited to share our plans for addressing this fire safety need at Fire Australia 2015, where we will take this important conversation further as we continue to pursue positive fire protection outcomes for our community. ■

# INNOVATION AND INDUSTRY CONTRIBUTION ACKNOWLEDGED

Now in their fifth year, the Motorola Knowledge Innovation Awards were again highlighted as part of the annual AFAC and Bushfire & Natural Hazards CRC conference. Each year, the individual and agency categories are awarded in recognition of innovation, creativity and contribution to the advancement of knowledge management in the industry over the previous 12 months.

This 2014 Agency Award was jointly granted to the New Zealand Fire Service (NZFS) and the Country Fire Authority, Victoria (CFA). After research showed absenteeism was high within the NZFS, the agency designed and implemented the Absence Management Project, a nationwide knowledge-management and wellness strategy with an innovative multipronged approach. This was the first time in the 38-year history of the NZFS that such rigorous consultation was undertaken to create a procedure and customised system for use by staff.

By making wellbeing and wellness paramount, NZFS now has one of the most favourable absence management figures within the state sector. In addition, the project has had a positive impact on staff



Steve Crutchfield (second from left) of Motorola Solutions with the 2014 Motorola Knowledge Innovation Award Winners.

morale and perception of leadership.

CFA was similarly awarded for developing and implementing their Knowledge Strategy and subsequent Knowledge Innovation Policy. The primary aim of this strategy is to embed evidence-driven decision-making into everyday business, while addressing both the demand and supply of knowledge within the overall context of cultural change. The creation of high-level documents that included consultation across all levels of the organisation, endorsement

from the Executive Leadership Team and implementation of knowledge maturity assessment workshops are just some of the key milestones of the project so far. Already there is evidence of knowledge sharing, positive cultural shifts and improved approaches to decision-making.

The Individual Award was this year presented to Mr Richard Host, Director, Information Technology, Fire and Rescue New South Wales (FRNSW), for the major reforms he has led in information technology (IT) and knowledge management over the past seven years. By communicating, engaging and motivating staff to excel in the introduction of IT systems, Mr Host has contributed to the efficient running of the organisation. His approach has also enabled integrated solutions and service delivery to be developed across NSW emergency management.

Steve Crutchfield, Managing Director, Motorola Solutions Australia and New Zealand, presented the recipients with their awards during the Conference Welcome and Awards Ceremony in Wellington, New Zealand in early September. Congratulations again to this year's winners.

## IAVE 2014 DISASTER AND EMERGENCY MANAGEMENT—A YOUTH PERSPECTIVE



Change It Up volunteers participate in IAVE World Conference.

The AFAC *Change It Up* volunteers were recently given the opportunity to present their ideas on a world stage at the International Association for Volunteer Effort (IAVE) World Conference held on the Gold Coast in September.

Alongside other young volunteers from around the globe, 12 members of the *Change It Up* alumni led small groups in the Disaster and Emergency Management workshop, facilitated by Sam Johnson from Christchurch's Student Volunteer Army and Tam Hoang from Youth Beyond Disasters. This workshop allowed the *Change It Up* alumni to take their ideas to the next level and be introduced to emergency management volunteering in a global, rather than local, context. Partnerships and friendships were formed during this outstanding networking event, with the common denominator of being 'a young volunteer' traversing institutional and cultural differences.

Groups workshopped key themes, drawing on issues that affect young people in disasters, emergency management and

building resilient communities. Issues discussed included the permission to volunteer, international partnerships, education programs, volunteering culture, diversity, and the recruitment and retention of volunteers.

The aim of the workshop was not to just uncover and discuss these common concerns, but also to work on an action plan to address them. At the conclusion of the workshop each group presented their concept and plan for the future. Additionally, volunteers staying on for the extended conference had the opportunity to again present their proposal to the main conference later in the week.

The *Change It Up* alumni have since been offered the chance to present their ideas at the upcoming UNISDR Conference on Disaster Risk Reduction in Sendai, Japan. They are now busy further developing their ideas to ensure they are prepared to make the most of this extraordinary opportunity.



Commissioners, Chief Officers and fire managers from across Australia gathered at the Australian Institute of Police Management (AIPM) in Manly, NSW.

## 2014 AFAC COMMISSIONERS AND CHIEF OFFICERS EXECUTIVE FORUM



AFAC's annual Commissioners and Chief Officers Executive

Forum, now in its fifth year, was held 2-4 June 2014 at the Australian Institute of Police Management (AIPM) in Manly, NSW. Proudly sponsored by Tait Communications, the theme for this year's forum was *Good governance and performance for operational agencies*. The theme was derived from discussions regarding the heavy focus on operational activities in agencies, and the need to

ensure that there is support for senior and executive officers, while considering their additional responsibilities.

Various invited speakers provided personal and professional perspectives from within Australia and overseas. Speakers delivered complementary viewpoints on governance and performance. Among them, Mark Jones of Buckinghamshire Fire Service in the UK, conveyed a passionate account of the strategic issues faced by his agency when managing resources and stakeholder expectations. Chief Fire Officer Jones

demonstrated how an innovative approach to leadership assisted in developing organisational capacity that was able to adapt in a turbulent and challenging environment.

Ray Creen also provided a personal account of his professional development. Mr Creen began as a rescue paramedic before progressing to Chief Executive of the NSW Ambulance Service. Throughout his career he has remained determined to deliver quality frontline medical treatment through new, non-traditional approaches to care.

At the end of the three days, the forum had discussed the need to:

- explore the future fire service role in emergency medical response
- gain a better perspective on leadership styles and culture across the industry
- provide additional agency support during incidents to maximise on real-time lessons learnt
- progress the development of principles for supporting interstate deployments
- better use of *Strategic Directions for Fire and Emergency Services in Australia and New Zealand 2014-2016* and identify measures of success to meet operational outcomes.

AFAC thanks Tait Communications as the major sponsor of this event.

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## STUDENTS WORTHY OF ASSOCIATION



Associate Students have the opportunity to join full scholarship holders, pictured here, at annual AFAC and BNHCRC conferences.

The Bushfire and Natural Hazards CRC has extended support for PhD students to include a wider range of new researchers closely aligned to the CRC's main research program.

Scholarships are being granted to PhD students to support their studies and attendance at the AFAC and BNHCRC annual conference.

For other students who are conducting research in relevant areas but are not

directly involved with the BNHCRC, the Associate scheme has been developed.

To be eligible for support through this scheme, students need to be conducting research that is likely to be of significant interest to BNHCRC stakeholders (including research partners and end users).

Some students are already indirectly connected to the CRC through their supervisors, with their research adding to the depth or breadth of the research projects. These students may benefit from the exposure of being more formally affiliated. The benefits of being an Associate Student are:

- better career prospects in the emergency sector through networking and professional development opportunities
- eligibility to apply for travel support to present at conferences aligned with the goals of the BNHCRC, including the AFAC and BNHCRC conference and other research and sector-wide events
- inclusion of a student bio and research outline on the BNHCRC website.

**If this sounds like you or you know someone who fits the bill then download the application kit at [www.bnhcrc.com.au](http://www.bnhcrc.com.au).**

### GO EINSTEIN!

*Einstein A-Go-Go*, a weekly science radio show on 3RRR FM in Melbourne, recently featured new Bushfire and Natural Hazards CRC research.

The Sunday morning program conducts in-depth and lively discussions on scientific topics of current debate, with the CRC to talk about its research.

BNHCRC CEO Dr Richard Thornton

presented an overview of the whole research program and touched on the issues that led to the formation of the CRC.

End user Dr Martine Woolf, of Geoscience Australia, spoke about the Coastal Management suite of projects looking at storm surge and tsunami incidents that threaten the environment and infrastructure along the Australian coast.



### VALE BOB MACDONALD OAM

FPA Australia is saddened by the news of the passing of Mr Robert (Bob) Archibald MacDonald OAM on Sunday 31 August.

Mr MacDonald had a long and important association with FPA Australia over many years, including as a representative on the NSW State Committee for more than 20 years and as chair of the training subcommittee for almost a decade.

Mr MacDonald was the Managing Director and founder of Adair Fire & Security Consultants Pty Ltd, which this year celebrates its 25<sup>th</sup> anniversary.

Mr MacDonald also contributed greatly to his community, particularly within the Scouts movement in which he was involved since 1946, rising to the rank of State Commissioner, International Scout Fellowships. In 1998, he received the Medal of the Order of Australia (OAM) for services to scouting and the community.

Mr MacDonald will be remembered at the Association as a dedicated and long-serving contributor to the pursuit of fire protection for the community.

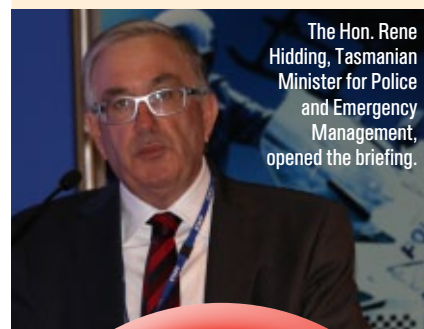
### TASMANIAN EMERGENCY MANAGERS GET RESEARCH BRIEFING

More than 130 Tasmanian fire, police and emergency managers joined land managers and government staff in Hobart on 7 August 2014 to hear from some of the nation's leading natural disaster experts across several scientific fields.

The Bushfire and Natural Hazards CRC staged a research briefing for its Tasmanian partners. Participants gained insights into the research currently underway, along with the previous work of the Bushfire CRC.

The Tasmanian Minister for Police and Emergency Management, the Honourable Rene Hidding, opened the event. The Tasmania Fire Service's (TFS) Chief Officer, Mike Brown, spoke of the value the TFS had gained from its partnership with the Bushfire CRC, and how this will be expanded under the BNHCRC.

Topics covered how research can be used, how communities and emergency managers make decisions under threat, getting the most out of volunteers, sharing responsibility for emergency management, extreme weather, building at the rural-urban interface, hazard fatalities, bushfire mapping and the legal and political implications of emergency management.



The Hon. Rene Hidding, Tasmanian Minister for Police and Emergency Management, opened the briefing.

### SCIENCE ON SOCIAL MEDIA

For all the latest on the research of the Bushfire and Natural Hazards CRC, including regular news, research insights and events, make sure you 'Like' BNHCRC on Facebook and follow on Twitter.







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## RESEARCH UTILISATION MOVES TO AFAC

The research utilisation function of the Bushfire CRC matured and evolved over the term of the CRC. Now the research entity has wound up, it is timely for the end user industry to build its capability in the utilisation of research. This has allowed for a renewed focus on the adoption of Bushfire CRC research outputs, and the development of a capability to support industry readiness for emerging research.

Funds for a three-year plan of research

utilisation activities have been allocated to the Bushfire CRC Trust. A Memorandum of Understanding between the Bushfire CRC and AFAC was signed regarding the delivery of research utilisation by AFAC. It states that research utilisation function must:

- create high quality products to support utilisation
- support agencies to make the research meaningful for their context

- build research utilisation capacity and capability within end user agencies
- nurture a responsive and learning culture within end user agencies.

The leadership and management of the research utilisation function is the core responsibility of Dr Noreen Krusel, who has transferred from the Bushfire CRC to AFAC. Dr Krusel is keen to continue to



## GLOBAL DISASTER ROLE

Australia will now be linked into a global research effort into disaster risk reduction through the Bushfire and Natural Hazards CRC.

The CRC will be the national coordinator for a United Nations backed committee that promotes and supports disaster risk reduction research programs and activities worldwide.

This coordinating role—officially called the Integrated Research on Disaster Risk National Committee for Australia—is sponsored by the United Nations International Strategy for Disaster Reduction, the International Council for Science and the International Social Science Council. It was formed to address the major global challenges of

natural and human-induced environmental hazards.

Dr Richard Thornton, CEO of the BNHCRC, said that Australia now had the opportunity to gain access to and influence the scientific direction of this important research, and take a lead role in promoting a range of activities and events.

"This appointment recognises the role the CRC plays as a major coordinator of disaster and hazard research across Australia and internationally.

"Disasters cause great social and economic loss across all regions of the world, and in Australia and New Zealand we have had our fair share of impacts in recent years. Our membership of this global research committee allows us to



Australia has joined the global research effort into disaster risk reduction through the Bushfire and Natural Hazards CRC, sponsored by the United Nations.

have a real voice at the highest level in influencing the quest for a better understanding of how to reduce these severe impacts across our communities," said Dr Thornton.



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develop and build the capability of the industry to use research. "The industry has come a long way over the past few years—it is my hope that over the next three we gain the confidence and the means to build research utilisation into our everyday business," she said.

The focus over the past few months has been to complete the communication and awareness of the final Bushfire CRC research through the Research to Drive Change online forums. These forums have been supported by the ongoing production of *Fire Notes* and publication of final project reports—all of which will be available on the Bushfire CRC website as a legacy.

## APCC PROCUREMENT GUIDE RELEASED—FPA AUSTRALIA FEATURED



An important new guide has been released to assist in the decision-making processes for the procurement of construction products in Australia,

with a view to elevating levels of compliance and providing a level of confidence to all parties in the supply chain.

*Procurement of construction products—a guide to achieving compliance* has been developed by the Australasian Procurement and Construction Council (APCC). The APCC is the peak body whose members are responsible for procurement, construction and asset management policy for the Australian, state and territory governments and the New Zealand Government.

The Guide is an important and valuable contribution to the efficiency and reliability of the building and

construction industry. It has been jointly developed by 30 key construction industry stakeholders and supported by many others.

FPA Australia was one of these organisations that assisted as part of the Construction Product Quality Working Group alongside other peak industry groups, including the Master Builders Association, Housing Industry Association, Standards Australia and the Australian Industry Group.

Page 68 of the Guide, 'Fire Safety Services', outlines advice developed by FPA Australia in relation to ensuring selected fire protection measures are fit-for-purpose.

This information is in line with the recently released Position Statement *PS05—Product Compliance and Evidence of Suitability*, available on FPA Australia's website.

To download the guide *Procurement of Construction Products*, visit the APCC website at [www.apcc.gov.au](http://www.apcc.gov.au).

To download the FPA Australia Position Statement *PS05—Product Compliance & Evidence of Suitability*, visit [www.fpa.com.au/technical](http://www.fpa.com.au/technical) and select **Technical Documents**.

## CABLE RECALL HIGHLIGHTS REAL FIRE RISKS

The nationwide recall of substandard electrical cables highlights just one of many potential fire risks from unsafe products currently sold in Australia, according to FPA Australia.

The Australian Competition and Consumer Commission (ACCC) recently issued a full recall of the faulty Infinity Cable Co. cable, which was sold by major retailers including Masters and Home Timber & Hardware stores in 2012 and 2013. The cable is estimated to have been installed in around 40,000 homes and businesses.

While the impacted sites will now have the cabling replaced, this comes at great cost and the incident highlights a much larger issue of inferior quality products that do not meet minimum fire and safety requirements being openly sold on the Australian market.

FPA Australia applauds the strong enforcement action taken by the ACCC in issuing a recall in this case, but also believes much more should be done to resolve non-conforming building and construction products from being sold in the first instance.

FPA Australia CEO Scott Williams said non-conforming products were a continuing issue of community safety, especially where fire risks were involved.

"While the action taken by the ACCC is to be praised, it is only the tip of the iceberg with regard to product conformance and is a reaction long after the non-compliant product was sold and installed," he said.

"Inferior and potentially dangerous products have been, and continue to be, sold in Australia for building and construction purposes and these products routinely end up being installed in all types of construction, from family homes right up to major public and commercial buildings.

"Frighteningly, the resulting safety issues are often not picked up until many years later, if at all.

"In instances where such products may dramatically increase the risk of fire, such as the cables that have been recalled, it is easy to see the potentially deadly consequences of such non-compliance. This is why there are established minimum standards in Australia, but there is a current lack of

scrutiny and general complacency at point of sale and installation, which means product may not always meet these expectations.

"The hard truth is that, in the rush to reduce technical barriers to trade and generate import and export opportunities, government has established multiple options for product compliance with varying assessment rigour.

"Some of these options are open to deceptive practices and there are systemic problems with the way some products are tested, certified and approved for sale. This is an issue that must be addressed before lives are lost.

"In the case of the recalled cables, for example, the likelihood is very high that they would have become a significant fire danger within five years. The ACCC has acted to ensure that this risk is minimised, but we have to ask, what else is out there and how was this product approved for sale and installation in the first place?"

FPA Australia is calling for a thorough review of the testing, certification and approval process for all building and construction products sold in Australia.

## ONE YEAR ON— FPAS REACHES 500 ACCREDITED TECHNICIANS



More than 500 individual technicians have now taken up accreditation under the Fire Protection Accreditation Scheme (FPAS)—Inspect & Test class.

The scheme, which was launched in July 2013, continues to go from strength to strength and now includes 20 recognised businesses and the wide-ranging support of regulators and other industry stakeholders.

Recent examples of this support include the NSW Government's acknowledgment of FPAS in its largest tender, and the Victorian Government's upcoming requirement that all Department of Human Services buildings be serviced exclusively by FPAS-accredited technicians.

In order to measure the success of engagement with the FPAS scheme among members and related stakeholders, the Association recently undertook a survey of the scheme's state and territory Stakeholder Consultation Groups.

The survey revealed that more than three-quarters of respondents (76%) have read articles and/or seen advertisements relating to the scheme in recent months. In addition, almost two-thirds of respondents (65%) indicated they had heard conversations about FPAS among stakeholders throughout the fire protection industry and/or other industries.

Finally, most respondents (88%) indicated that the scheme would have even greater impact in the future as it gains further momentum. FPA Australia has also received strong interest from facility managers seeking to reference FPAS in new contracts.

The Association takes this opportunity to thank the 500 individual technicians and 20 recognised businesses that are leading the way by becoming the first to enter FPAS and we look forward to further growth as more of the industry takes up the scheme.

**For more information about FPAS, phone Accreditation & Licensing on 03 8892 3131.**



(L–R) Dr Richard Thornton and Mr Tom Harbour.

### RESEARCH PARTNERSHIP WITH THE US CONTINUES

The Bushfire and Natural Hazards CRC is now a formal partner of the US Forest Service (USFS) through a Memorandum of Understanding that will see a continued flow of research and information between the two organisations.

The CEO of the BNHCRC, Dr Richard Thornton, and the Director of Fire and Aviation Management at USFS, Mr Tom Harbour, signed the agreement at the AFAC and BNHCRC annual conference in Wellington, New Zealand, shortly after Mr Harbour delivered a keynote presentation on the conference theme *After Disaster Strikes: Learning from Adversity*.

The US Forest Service was previously a partner with the Bushfire CRC through an MOU.

### MAINTENANCE NOW REQUIRED IN WA— GOOD PRACTICE GUIDE UPDATED

Following the publication of Australian Standard 1851-2012 in December 2012, FPA Australia produced *Good Practice Guide GPG03*, to provide practical guidance on the regulatory framework relating to the maintenance of fire protection systems and equipment in each state and territory and the use of AS 1851-2012.

Since this GPG was released, the Association has continued to advocate for regulators to amend their regulatory requirements to allow for the automatic adoption of AS 1851-2012 as industry best practice. This advocacy has recently resulted in positive regulatory change in Western Australia where, for the first time, a statewide regulation (Regulation 48A WA Building Regulations 2012, amended 2014) now requires building owners of

existing Class 2 to Class 9 buildings to ensure that safety measures in each part of the building are capable of performing as expected.

This new WA regulation has created the requirement for routine servicing and preventative maintenance of safety measures to be conducted to demonstrate the required performance of safety measures is being achieved and is written in a way that allows AS 1851-2012 to be automatically adopted as industry best practice to perform this task.

Recent changes in Tasmania and Queensland have also been captured in the updated GPG. Other changes include the status of requirements in the ACT, where the previous ACT Fire Brigade Policy FS-05 has been withdrawn.

Changes also capture how the



Northern Territory regulations have been affected by the deletion of Part I and the associated NT part I variation on the Building Code of Australia.

FPA Australia is also advocating for regulatory changes in Victoria, where sunset regulations are now providing an opportunity for comprehensive review, and South Australia, where a working group has been established to consider the adoption of AS 1851-2012.

**Non-members can view a sample of the updated GPG at [www.fpa.com.au/technical](http://www.fpa.com.au/technical) and selecting Technical Documents, while FPA Australia members can download the full document at [connect.fpa.com.au](http://connect.fpa.com.au).**

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# RETHINKING RISK— EMPOWERING COMMUNITIES

**By Brenda Leahy**  
Communications  
Officer,  
AFAC and  
Bushfire & Natural  
Hazards CRC

Listening to communities from the outset when designing disaster management approaches is the key to helping communities share risk and responsibility, ultimately making them resilient.

**M**ore than five years after shared responsibility moved to the front of the disaster and risk management agenda, the concept of it is still raising more questions than answers.

But for an industry focused on action and solutions, taking time to pause, question and discuss the sharing of risk and responsibility should be considered a strategic imperative for the disaster management sector, according to Dr Blythe McLennan, a community safety specialist who researched shared responsibility for the Bushfire CRC. Otherwise, the focus on a resilience-based approach envisioned by the Victorian Bushfires Royal Commission (VBRC) in 2009 will be lost and the wheels left spinning.

With co-researchers from RMIT University's Centre for Risk and Community Safety, Dr McLennan investigated the role, scope and progress of shared responsibility in the context of a disaster resilience approach, first advocated by the VBRC in 2009 and subsequently endorsed by the National Strategy for Disaster Resilience. The national vision calls for a new balance of responsibility between governments, their communities and stakeholders in sharing responsibility for risk, but remains silent on implementation.

"While there is still a lack of consensus on its definition, the general idea is that people accept greater responsibility for risk while

governments focus on empowering them to become resilient," explains Dr McLennan.

"The concept gained widespread support, but stakeholders, from government decision-makers through to householders in fire-prone locations, have grappled with what it all means."

According to Dr McLennan, this type of gridlock is typical of so-called 'wicked problems' that challenge contemporary political systems. "Wicked problems usually take the form of social planning dilemmas that involve elements of the sharing of risk. They are complicated, multifaceted and come with no guide for implementation. Shared responsibility fits squarely within this category, along with the challenge of climate change," she says.

Charting this new terrain requires a fundamental shift in thinking and new approaches across the disaster management sector, according to Dr McLennan. The transition, she says, depends on big strategic conversations across government and within the emergency management sector. It also hinges on more input from the ground up.

"Shared responsibility redefines the relationships between governments and communities and relies on the forging of a new type of social contract," Dr McLennan says. And, as with any contract, each party has to negotiate and accept their part of the bargain.

Blythe McLennan  
presenting her research.



## Leading and driving local change

The concept of shared responsibility underpins the Department of Fire and Emergency Service (DFES) approach to community engagement across Western Australia.

Self-reliance, through the sharing of risk and responsibility for hazard, is a clearly articulated goal of the DFES Community Engagement Framework, an operational guideline for enhancing safety outcomes in the state's physically, geographically and socially diverse communities.

The framework, which aligns with the broader DFES strategic plan, gives career and volunteer emergency services

personnel an outline of ways to engage their communities at the local level and to foster their involvement in planning and decision making.

The main aim is to help these different communities appreciate the risks to life and property and lead and drive their own solutions to reduce those risks, according to the Acting Director of Community Engagement Jennifer Pidgeon. In this way the solution is community led, while DFES provides the support and facilitates the process.

As the approach is fundamentally about behaviour change, it has to be long-term, Ms Pidgeon explains. Success, she says, hinges on the quality of relationships and partnerships at the local level.

Over time, it is expected that the results will be measurable both qualitatively and quantitatively. In the meantime, the indicators are positive.

In one example of community engagement in action, a partnership initiative was formed at the local level between agencies, local businesses and the local council in Dunsborough to reach absentee landlord homeowners. Typically, these had been a hard-to-reach group for risk mitigation and preparedness campaigns.

The partnership approach resulted in a range of solutions to identify and target the information needs of these landlords, including conducting local information sessions.



A neighbourhood community safety briefing.

For individuals, that means accepting responsibility for the risk and acting before, during and after disaster. For governments, it suggests a need to relinquish some control over the risk, together with a rethink of how to empower communities in that process.

There are parallels with the innovation paradox referred to in the corporate world. Under certain conditions, even when the stakes are high, innovation brings about lasting change and transformation once management relinquishes control of the risks, and responsibility is shared among the key stakeholders.

At a governance level, there needs to be an 'opening up of discussions' between the three tiers of government, their agencies, the emergency management industry and citizens to develop interactions and partnerships that promote and facilitate resilience.

In practical terms, Dr McLennan says that means getting input from stakeholders in the agenda-setting, or problem-scoping, phase of the policy cycle.

"If responsibility is to be shared, we need to get past the slogan and into the specifics.

"We are talking about a new process of inclusive governance, which operates at a higher level and is more involved than community or stakeholder engagement," she says.

One of the obstacles to developing an inclusive governance approach is the current policy cycle and framework.

Dr McLennan and her research team found that public input isn't usually factored into the agenda or policy-setting and problem-defining phase of the cycle, as shown by Figure 1.

"The focus of input is usually in the

implementation phase. This is typically after decisions are made and the focus is on engaging the community in delivering the desired outcomes.

"In order to have shared responsibility in disaster governance, there needs to be a clear distinction between these phases."

This finding may also provide some answers as to why, in other disaster-management and risk-mitigation contexts, communities or individuals don't always react or respond to the prescribed plan.

This is no surprise to Dr McLennan, who says the conventional policy and strategy approaches to sharing responsibility may have missed the whole stage of problem defining. "You can't

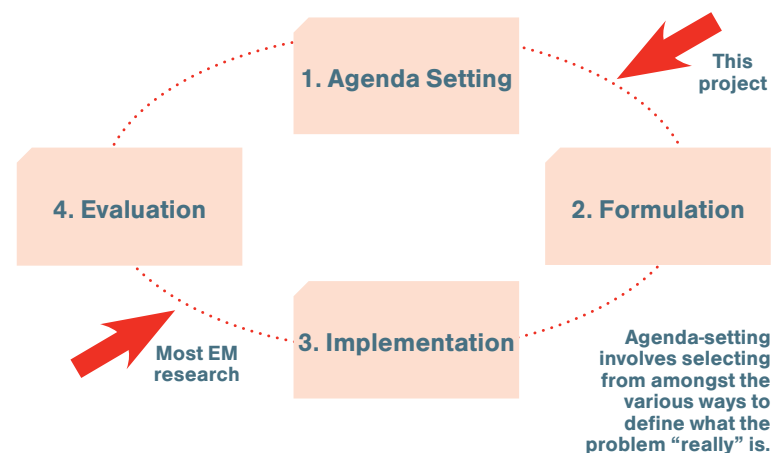


Figure 1 The simplified policy cycle.



PHOTO: CFA AND VISSES

Violet Town residents in Victoria create their own sandbags. The town was part of CFA's Community Led Program pilot.

separately decide what the problem is and then get the community to implement it."

"Everyone has a different perspective on the problem and the solution. That's why we need to question assumptions, seek input and understand the nature and extent of the problems, challenges, threats and opportunities."

The bottom line, she suggests, is 'know the audience'. The logic is that if you understand the different perspectives on the problem and set the processes in place to facilitate action, then you are more likely to get buy-in shaping and delivering the solution.

Dr McLennan's team adopted a non-traditional 'problem-construction'-based approach to the Sharing Responsibility project, which began in 2010 for the Bushfire CRC. As part of the process they conducted a literature review and facilitated a series of workshops with a range of stakeholders on shared responsibility throughout Australia.

"Disaster management is by nature action-oriented, focused on getting the job done, under difficult and urgent conditions. The stakes are high and there is intense public scrutiny of all players.

"As a result, most of the research in disaster management has been focused on supporting the sector with solutions that develop ways to support, enhance or improve practice.

"It is far less common for industry-engaged research to use a problem-construction methodology that explores the ideas and concepts that ultimately underpin and shape the practice.

"Stakeholders regularly wrestle with the recognition and definition of problems from across the spectrum of strategy and policy through to implementation. This is particularly relevant today as emergency services agencies and their industry bodies and networks grapple with making sense of, and responding to, major disaster events and the the public inquiries that follow.

"We found that very little research has been undertaken to critique and support models for reflection on, and the reframing of, problems."

On the positive side, Dr McLennan says there are many examples of shared responsibility in action emerging. These are typically at agency, community or local government levels, where local stakeholders started working collaboratively with a shared sense of purpose and vision to define and address problems, threats or opportunities within their communities.

Examples within Victoria are the Country Fire Authority's Community Led Program (CLP), and Be Ready Warrandyte (a community based program in Melbourne's north-east). Wangaratta Council's Conversation Forums for its Environmental Sustainability Strategy is another example.

In these cases, the organisations took the concept of shared responsibility and made it their own.

"There are hopeful signs of change and examples in practice throughout Australasia," Dr McLennan says. "Hopefully they will inspire continued momentum." ■

### Risk-reduction champions

In Violet Town, a flood- and fire-prone locality in Victoria's north-east, residents embraced the opportunity to prepare their community for hazards.

Their town was part of a pilot project by the Country Fire Authority (CFA), implemented from 2012, to test the capacity of communities to develop their own risk-reduction plans and build resilience to disasters through a process of shared responsibility.

Among one of their first initiatives, Violet Town residents launched a local skills workshop to learn how to create their own sandbags. The idea was that they would be primed to respond in the event of a flash flood. Since the pilot, the group has continued to grow and evolve,

taking charge of the town's own hazards and risk reduction through a range of ongoing initiatives.

CFA facilitated the process and provided the resources and information to empower local people to achieve their goal, says the CFA's Manager of Community Resilience, Gwynne Brennan.

"In our Community Led Program, the focus is on facilitating and enabling. We do less leading and directing and more guiding and facilitating. Communities intuitively know what to do," Ms Brennan says.

"It's about trusting that process and approaching it as a negotiation of shared responsibility."

Ms Brennan says the program was partly inspired by some of the concepts

and models detailed in the Shared Responsibility project, which she was exposed to through initiatives such as AFAC's Community Education Technical Group.

The Community Led Program was rolled out to a total of 18 communities with high fire and flood risk profiles in 2013. Another 20 hazard-prone localities will participate in the community led model under the umbrella of Emergency Management Victoria in 2014.

Additionally, the initiative has inspired some local councils to adopt the principles of shared responsibility.

For further information, see the CFA's website at [www.cfa.vic.gov.au](http://www.cfa.vic.gov.au).



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# PRODUCT COMPLIANCE— THE CONFRONTING REALITY

**By Matthew Wright**

Chief Technical  
Officer and Deputy  
CEO, FPA Australia

Non-compliant building and fire protection products that are not fit-for-purpose can pose serious risks. FPA Australia’s new Position Statement outlines the options and challenges.

Confidence in how well construction products perform has never been more important. The recent recall by the Australian Competition and Consumer Commission (ACCC) of non-compliant electrical cable, estimated to have been installed in more than 40,000 new homes and commercial buildings, warns that checking for and demonstrating product compliance must be taken more seriously in the Australian marketplace.

FPA Australia has heard increasing anecdotal evidence of product compliance issues in the fire protection product sector and, in July 2014, released Position Statement *PS05—Product compliance & evidence of suitability*. This document communicates

the Association’s views and discusses options available for compliance, which include testing, certification, evaluation, listing and conformity assessment; all of which have various levels of assessment rigour.

## Many choices for compliance

But why are there so many options available for compliance? Global economic forces increasingly affect the production and supply of goods and services. So, in order to balance competing objectives associated with demand, capability, cost, market share and acceptance, countries often enter into trading agreements or policies to acknowledge and reciprocate the appropriateness of exported and imported



FPA Australia has heard increasing anecdotal evidence of product compliance issues in the fire protection product sector.

reduction. But this may have come at a significant cost to safety. Fortunately, in the case of the recent non-compliant Infinity Cable Co. cable, questions about compliance were raised before any possible injury, fatalities or property loss occurred. However, it is alarming that this product not only made it to point of sale, but that tradespeople purchased and installed it without question. This suggests an industry culture of product selection that has low respect for compliance, low understanding of what compliance options exist and what to ask for, or all of the above.

It is not only the fire protection industry that struggles with this issue. The Australasian Procurement and Construction Council (APCC) recently launched a guide to achieving compliance when procuring construction products. This comprehensive guide represents the culmination of discussion and contributions from 30 construction industry bodies, including FPA Australia. The APCC guide states “evidence suggests that the market penetration of non-conforming products in several key construction product sectors in Australia may be up to 50%. This is a sobering and alarming statistic.” The guide seeks to assist in the decision-making process for the procurement of construction products in Australia with a view to elevating the levels of compliance and providing confidence to all parties in the supply chain. It also aligns with FPA Australia’s position that evidence must be provided to demonstrate that products are fit for the purposes for which they are intended.

However, the diversity and complexity of issues referred to by the guide reflects the significant nature of the problem. In an effort to expand opportunities and reduce technical barriers to trade in line with the TBT, the requirements for detailed consumer awareness about the differences among compliance options have increased dramatically and it is unrealistic to expect consumers to have this knowledge. Without this detailed awareness, consumers are making uninformed choices with significant potential consequences.

### What can be done?

The construction industry generally has enough trouble navigating and meeting the expectations for design compliance, let alone dealing appropriately with another sophisticated level of compliance options for product.

Abandoning free trade agreements is not a solution, as Australia is more of a global citizen than ever and barriers to trade will continue to be reduced. However, Australia must take more active steps to exercise aspects of the TBT that allow signatory countries to introduce controls to maintain consistent local product performance benchmarks and safety standards, and prevent deceptive practices, in order to reduce the use of non-compliant product. Prescribing product-specific evidence of suitability criteria for fire protection products where the rigour of assessment is commensurate with the risk (probability × consequence) should the product fail would be a good start.

The Honourable Bob Baldwin MP, Parliamentary Secretary to the Federal Minister for Industry, launched the APCC guide. Mr Baldwin mentioned

goods between markets. Australia’s most significant agreement for this purpose is the Agreement on Reducing Technical Barriers to Trade (TBT) sanctioned by the World Trade Organization (WTO).

The TBT’s objective is as follows:

*The Agreement on Technical Barriers to Trade tries to ensure that regulations, standards, testing and certification procedures do not create unnecessary obstacles, while also providing members with the right to implement measures to achieve legitimate policy objectives, such as the protection of human health and safety, or the environment.*

The appetite in the Australian marketplace for access to more products has been driven by a reduction in local manufacturing and the eternal pursuit of cost

that the Infinity Cable Co. cable case had significantly raised the attention of state, territory and federal government Ministers participating in the Council of Australian Governments-sanctioned Building Ministers Forum. Mr Baldwin flagged that the Ministers have resolved to review the current requirements and seek more clarity and consistency for industry about product compliance. FPA Australia will be seeking to influence improved compliance outcomes in this area.

Reflecting on the gravity and impact of product compliance issues, the Fire Australia Conference on the Gold Coast in March 2015 has been given the theme: *Delivering a Fire-Safe Future: the right choices for product compliance and approval*. FPA Australia is approaching key industry figures to give their views on product compliance and options for improvement at this peak industry event.

### What is FPA Australia's Position on product compliance?

FPA Australia advocates the following in relation to product compliance and evidence of suitability for fire protection products used in Australia. This is outlined in detail in *Position Statement 05—Product Compliance & Evidence of Suitability*.

#### 1. Fit-for-purpose

Fire protection products required to be installed by legislation and/or installed in pursuit of life safety, property protection and environmental protection, must be 'fit for the purpose for which they are intended' to achieve minimum safety standards and maintain consumer confidence. Products must comply with all relevant legislation including, but not limited to, building, work health and safety, and consumer laws.

#### 2. Testing

Testing of fire protection products is critical to demonstrating their performance. FPA Australia's position in relation to each of the legislated evidence-of-suitability pathways currently available for fire protection products in Australia is that these are only supported where products are:

- (i) Tested to ACCC Mandatory Standards (where applicable) and relevant Australian Standards, or
- (ii) Tested to equivalent or more onerous International Standards, where equivalence is based on:
  - the accreditation status of the laboratory being appropriate for the test being conducted
  - test conditions, specimen configuration and equipment being identified
  - test duration being confirmed
  - performance and test results being validated.

#### 3. Certification

FPA Australia's position in relation to the certification of products for use in Australia is that they should only be certified if:

- tested in accordance with point 2 above, or
- when varied to a minor degree from a product that has been tested in accordance with point 2, where this variation is specifically assessed and documented.

#### 4. Technical competence

Products for use in Australia should be tested or certified by an organisation able to demonstrate both product-specific technical capacity and testing or certification competence relevant to the product being assessed. Such capacity and competence should be able to be independently confirmed.

#### 5. Documentation

Easily identifiable evidence that the performance of the product has been evaluated in accordance with a recognised pathway is critical to ensuring compliance with relevant legislation, standards and specifications. Documentation provided as evidence of product compliance should clearly and transparently indicate what recognised pathway has been adopted, and what specific performance criteria or standard the product meets or exceeds, including any associated conditions.

#### 6. Accessing international markets and maintaining local performance standards

Acceptance of products manufactured overseas in accordance with Australia's WTO obligations must be balanced with ensuring that the products are suitable for Australian conditions.

Australia, as a signatory of the WTO agreement—Reduction of Technical Barriers to Trade—is obliged to support product import and export opportunities. However, Australia should exercise section 2.2 of the agreement more actively and establish prescribed evidence of suitability criteria for imported and locally produced fire protection products to maintain consistent local performance and safety standards and prevent deceptive practices.

Prescribed evidence-of-suitability criteria should be established specifically for fire protection products by establishing a national product scheme. The rigour applied in demonstrating that a product is fit-for-purpose should be commensurate with the risk (probability × consequence) should the product fail.

The ACCC should exercise specific powers and responsibilities to investigate reported product failures in the field, and product non-compliance and product compliance complaints, resulting in fines and/or removal of product from sale as necessary.

#### Where to from here?

Clearly, significant challenges still exist regarding the current product compliance regime in Australia. FPA Australia will make a significant announcement regarding its plans for addressing product compliance at the Fire Australia 2015 Conference and Exhibition. In the meantime, members and stakeholders are encouraged to review the Association's Position Statement and, for construction materials more broadly, review the APCC guide *Procurement of construction products—a guide to achieving compliance*. ■

Access the Position Statement free at [www.fpa.com.au](http://www.fpa.com.au) and the APCC guide free at [www.apcc.gov.au](http://www.apcc.gov.au).

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# DELIVERING A FIRE SAFE FUTURE

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Fire safety depends on many factors. Critical to this is ensuring that fire safety products are designed, installed and maintained so that they are fit-for-purpose. It is essential that the right decisions are made from conception through to completion and that evidence is provided demonstrating complying products are selected and installed to ensure the reliability and longevity of every system.



# PREVENTING FIRE AND PROTECTING ASSETS WITH OXYGEN-REDUCTION SYSTEMS

**By Martin McGettrick**  
General Manager  
Special Hazards,  
ARA Fire

Australia's first oxygen-reduction fire prevention system stopped an electrical fire at a Sydney hospital by creating an atmosphere that would not support fire.

Australia's first oxygen-reduction fire prevention system was installed in June 2013 at the Sydney Adventist Hospital (SAH). The SAH is NSW's largest single-campus private hospital, with approximately 2,300 staff, 500 volunteers and 750 accredited medical practitioners.

A fault occurred in one of the power factor correction units a few months after a very early smoke detection apparatus (VESDA) oxygen-reduction system was installed. The system protects several rooms at the SAH, including the power factor correction room and the hospital's main switch room, which feeds the operating theatres—a volume of approximately 500 m<sup>3</sup>. The system detected the fault and the oxygen-reduction system prevented a fire starting.

Bernard Jakovac, Director of Engineering Services at SAH, said, "the hospital is very pleased with the oxygen-reduction system and we think it is a great solution for the environment it is protecting. Our insurers are also very keen on the system and we are considering this for other high-risk areas across the large campus. We believe the oxygen-reduction fire prevention system is a wonderful product and a great innovation in fire prevention."

## How does oxygen-reduction fire prevention work?

Oxygen-reduction fire prevention produces oxygen-reduced (hypoxic) air by partly filtering out oxygen from ambient atmospheric air. By contrast, other systems inject pure nitrogen into the area to be protected.

A normal atmosphere contains 21% oxygen. The hypoxic air injected into a protected space

is 15% oxygen and 84% nitrogen (1% is made up of argon, carbon dioxide and other gases). A fire cannot start in this environment: common flammable solid materials and liquids cannot be ignited at an oxygen level below 16%.

## How does oxygen-reduction technology differ?

Oxygen-reduction technology provides a continuous level of prevention rather than discharging an extinguishing agent once a fire starts, as is the case with traditional fire-suppression systems. Oxygen-reduction fire systems also have a straightforward installation process, minimal maintenance costs and a smaller footprint than either a sprinkler or other fire-suppression system.

Cost comparisons indicate the installation and set-up of an oxygen-reduction system is more than a conventional fire protection system on volumes less than approximately 800 m<sup>3</sup>. However, on protected areas greater than 800 m<sup>3</sup>, the return on investment and long-term benefits of an oxygen-reduction system easily outweigh the installation and set-up cost. Factors to be considered include:

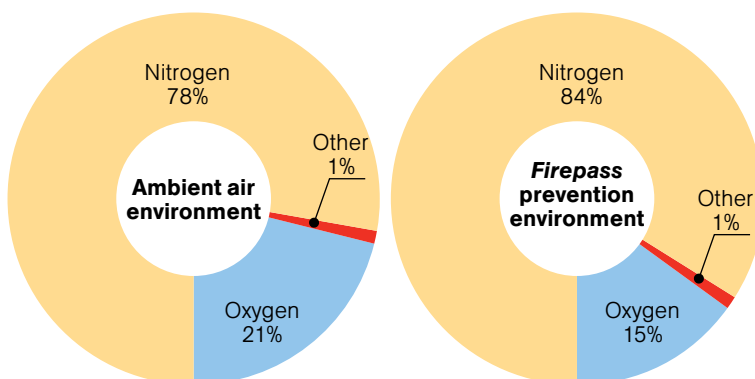
- A traditional fire protection system is only activated once a fire has started, resulting in some form of heat, smoke or water damage to equipment, building, materials and fittings.
- Items being protected may be irreplaceable and the cost incalculable.
- Installing an oxygen-reduction system ensures:
  - no flame—a fire will never start
  - no damage to property or goods
  - no shutdown of business operations from fire damage
  - no annual integrity testing, as the system self-tests
  - no ten-year hydrostatic testing of suppression cylinders
  - no false discharges.

## How is oxygen-reduction fire prevention safe for people and the environment?

Oxygen-reduction fire prevention uses ambient air to produce breathable air for fire prevention—no chemicals or gases are involved. The fire prevention agent is simply oxygen-reduced (hypoxic) air.

Hypoxic environments created for fire prevention are precisely controlled and monitored

**Figure 1** Ambient air environment vs. Firepass prevention environment



reduced-oxygen environments. They should not be confused with other environments where hypoxic conditions can occur in an uncontrolled, unwanted or unexpected way. Oxygen-reduction fire prevention systems are clean-air systems.

There has been extensive medical research in the UK, Europe and Australia to support the safety of working in a hypoxic environment of 16% oxygen and below.

At sea level, 15% oxygen content is equivalent, in terms of human physiology, to normal atmospheric air at an elevation of around 2,700 m above sea level or being on a commercial flight. Millions of people around the world live at altitudes equivalent to exposure at or below 15% oxygen concentration at sea level.

Hypoxic air environments are currently used in medical research and for physical training and rehabilitation of athletes.

### What are suitable environments?

Environments that are best suited to oxygen-reduction fire prevention include any areas that require the highest levels of fire prevention and where uninterrupted operation is essential.

Oxygen-reduction fire prevention systems can be implemented as an alternative, but also as a complementary or supplementary option that enhances conventional fire safety without interfering with their performance.

Suitable applications include:

- archive rooms
- control rooms in power plants
- data centres
- electrical switch rooms
- food storage areas, deep freeze or cold storage rooms
- hazardous materials storage
- laboratories
- libraries
- museums
- power factor correction rooms
- records storage centres
- server rooms
- Telecommunication rooms
- warehouses.

### How does oxygen reduction protect irreplaceable goods?

Documents, rare archives, historic artefacts, museum exhibits—these are all irreplaceable items and usually of high value. They can be destroyed or damaged by fire, water, smoke or chemicals. Oxygen reduction not only prevents the outbreak of fire, avoiding any collateral damage by extinguishing agents, it also slows oxidation and reduces deterioration of irreplaceable items due to the lower oxygen content of hypoxic air.

### How does the system monitor oxygen levels?

Oxygen concentration levels can be continually monitored by a minimum of two independent oxygen sensors, in different locations, in each protected space. The monitoring units are typically placed at eye level, at an appropriate distance from the door of the room. This is to provide for monitoring of oxygen

conditions and alert if doors are wedged open or not closed properly, while minimising the number of false high-oxygen alarms. The oxygen sensors transmit to monitoring and control points (e.g. the fire alarm panel and the building management system) as required.

Performance indicators show, as a minimum, for each protected space:

- oxygen concentration as indicated by each oxygen sensor
- high- and low-oxygen alarm conditions
- an output indicating the operation of any other system alarms.

### Health and safety

The design aim of any oxygen-reduction fire prevention system is to create and maintain an atmosphere in an enclosure that can prevent ignition of combustibles within the protected area, while simultaneously retaining a safe environment for the occupants.

A risk assessment, in accordance with Australian Standard/New Zealand Standard ISO 31000-2009 Risk management—Principles and guidelines, shall be carried out before any installation of an oxygen-reduction fire prevention system to ensure safety of people within and outside the protected area who may be exposed to output air from the oxygen-reduction fire prevention system. Such an assessment shall detail:

1. the safeguards used for people having access to the protected space and oxygen-reduction fire prevention system equipment
2. limitations to the number of people allowed in the protected enclosure and the level and duration of physical activity permitted.

An independent review on working in hypoxic conditions was carried out by thoracic specialist Professor Matthew Peters, President of the Thoracic Society of Australia and New Zealand.

Professor Peters's report and checklist of considerations for anyone working in or visiting a hypoxic environment is at [www.arafirepass.com.au](http://www.arafirepass.com.au).

### Installing an oxygen-reduction fire prevention system

The systems come ready-mounted and tested. Once on site, the system is connected to the room sensors and the power supply. The system is then connected to the rooms via the installed tubing. The byproduct oxygen-enriched air is vented outside.

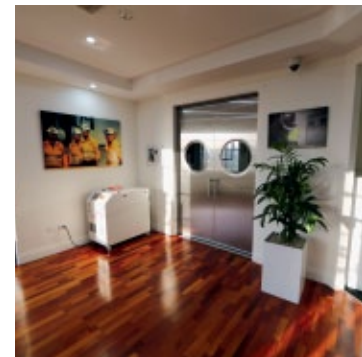
Oxygen-reduction fire prevention systems do not require rigid piping within the protected spaces. The only requirement is simple, minimal pressure piping to each protected area and to the ambient air, along with wiring of the oxygen-monitoring units in the protected areas.

It is recommended that protected areas be equipped with highly sensitive smoke detectors, such as VESDA or equivalent, to ensure any smouldering combustion from cable faults, for example, is reported in its incipient stages.

A comfortable, breathable atmosphere is created inside the protected space by the ongoing ventilation with fresh, hypoxic air.

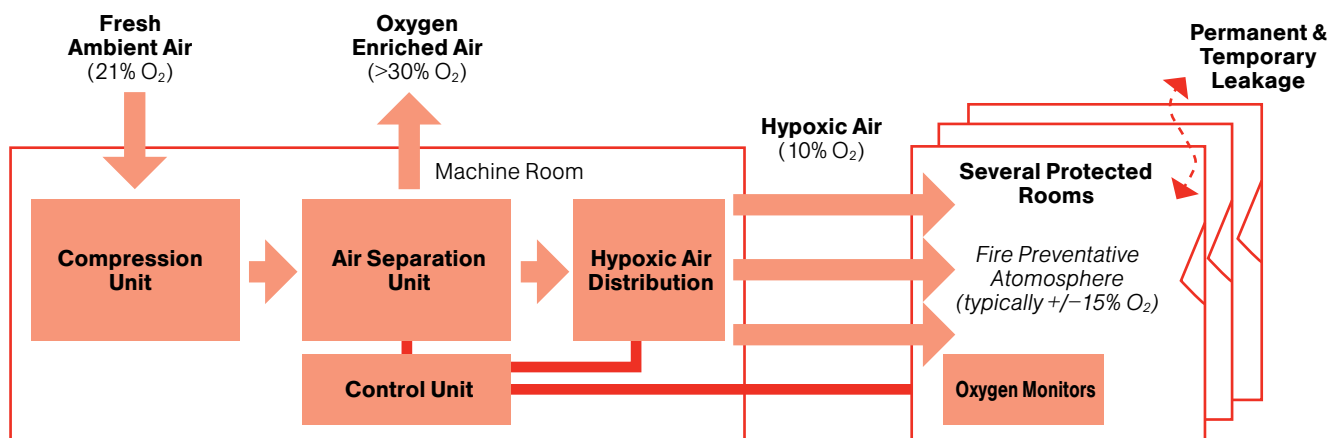


Oxygen-reduction fire prevention system at Sydney Adventist Hospital.



Oxygen-reduction system in the ARA Group boardroom in Sydney.

Figure 2 System configuration



### Sealing the rooms

The protected area must be well sealed to minimise the permanent leakage of air in and out of the room. Leakage is the key factor for running costs (energy consumption and maintenance) of an oxygen-reduction fire prevention system. This is the sum of permanent leakage of the protected area and the temporary leakage created by door openings. Investing in improving the sealing of the protected areas will directly affect running costs, which are directly proportional to the leakage rate. Typically, the payback for such improvements is less than one year.

All spaces in the protected area must have split-type air cooling or closed, dedicated air-recirculation systems.

To evaluate the current leakage of the area to be protected, an integrity fan test that accurately predicts the room's pressurisation and identifies any room leaks is recommended before any works are commenced.

### Venting and cooling

The area housing the compressors and filtration units must be well vented to ensure a permanent supply of fresh, ambient air to the compressors. Alternatively, the room can be cooled with chillers. There is a requirement for a small drain in the machine room for the condensate cleaner wastewater.

### Maintenance

The highly reliable hypoxic air generators require very little upkeep and can operate for decades with proper maintenance. A maintenance cycle of six months is typical. Regular inspections are recommended to ensure a fire-preventative atmosphere is maintained. This cycle applies if the supplied fresh air is compliant with the required quality. If the air quality is lower (in the event of dust, humidity, temperature etc), the filter change cycle needs to be reduced.

### Limitations on installation

Oxygen-reduction fire prevention systems shall not be installed in areas where:

- sufficient infiltration control cannot be achieved
- an alternative source of oxygen is present
- oxidising agents exist that have the potential to reduce oxygen concentration by chemical reaction (e.g. chlorine)

- substances or processes exist that evolve gases capable of modifying the atmosphere and reduce oxygen concentration (e.g. toxic displacement).

### Other installations

A small oxygen-reduction system is installed in the boardroom of the ARA Group's corporate office in Sydney for demonstration purposes. This system has a simple installation—plug and play. It is a self-contained unit protecting one room of up to 200 m<sup>3</sup>.

CeBIT Australia Business Technology Expo was held at Sydney Olympic Park in May 2014. Visitors to the expo had the chance to walk inside a purpose-built room and experience the oxygen-reduced environment.

### Benefits of oxygen-reduction fire prevention

Oxygen-reduction fire prevention benefits include:

- certainty of avoiding the outbreak and spread of fire
- continuous fire prevention without interruption—no refilling or replacement required
- environmentally friendly—no chemicals used
- designed, engineered and manufactured to customer requirements and specifications
- very small footprint and little building space required
- simple to install into existing premises and newly built spaces
- minimal maintenance
- access to protected areas at any time
- scalable to fit any size area, large or small
- slower oxidation and reduced deterioration of documents, materials, equipment and artefacts.

Oxygen-reduction fire prevention systems provide unmatched fire safety and achieve the ultimate goal in fire protection—fire prevention. ■

For further information, contact Martin McGettrick, General Manager Special Hazards, ARA Fire, at [info@arafirepass.com.au](mailto:info@arafirepass.com.au) and visit [www.arafirepass.com.au](http://www.arafirepass.com.au).

FPA Australia TAC 11/22 has established a working group on this subject to provide future technical information. For more information contact [technical@fpaa.com.au](mailto:technical@fpaa.com.au).

#### Countries where oxygen-reduction fire prevention systems are installed

- Australia
- Brazil
- Norway
- Oman
- Portugal
- Russia
- Singapore
- Sweden
- Switzerland
- UAE
- USA



# Fire Rated & TPS Cables

## Design Features

- ✓ Designed for Fire/EWIS and power installations
- ✓ Always in stock
- ✓ Easy to strip and terminate
- ✓ FR Cables of LSZH construction
- ✓ Approved to AS/NZS 3013\*
- ✓ AS/ACIF S008 compliant
- ✓ Third Party tested and certified
- ✓ FR Cables ActivFire Listed



**TPS Cables**

2 Core

2 Core Flat White Stripe

2 Core Twisted

2 Core Screened

Independently audited, certified and approved to Green Building Council PVC Best Practice Guidelines.

**2 HR FR Alarm Cables**

2 Core

4 Core

6 Core

10 Core - 5 Twisted Pairs

2 Core Screened

4 Core Screened

10 Core

**2 HR FR Power Cables**

Single Core

2 Core & Earth

3 Core & Earth

3 Core & Earth Screened

4 Core & Earth

**Halogen Free TPS**

2 Core

**Stainless Steel Ties**

AS/NZS 3013 Approved - ActivFire listed

\* Fire Rated Cables only



A lack of rainfall over a long period means many forested areas across the country are drying out, increasing bushfire risk.

PHOTO: WAYNE RIGGS, CFA

# HIGHER THAN NORMAL RISK THIS FIRE SEASON

**By David Bruce**  
Communications  
Manager, Bushfire  
and Natural  
Hazards CRC

Many areas of Australia will experience higher than normal fire risk this season. What does the science tell us about bushfire risk?

Large areas of southern Australia, especially along the east and west coasts extending inland, face above-normal fire potential for the 2014–15 fire season, according to the *Southern Australia Seasonal Bushfire Outlook 2014–2015*, recently released as Bushfire and Natural Hazards CRC *Hazard Note 2*.

Climatologists and meteorologists from the Bureau of Meteorology met with fire and land managers from across the country at the Tasmania Fire Service headquarters in Hobart in late August to discuss the bushfire potential for the season.

The workshop produced the Bushfire and Natural Hazards CRC's bushfire outlook for southern Australia, below the Tropic of Capricorn. When combined with the northern Australia bushfire outlook, published in July and covering northern Queensland, the Northern Territory and northern Western Australia, the result is the bushfire outlook across the country. The outlooks have been produced since 2006, with the Bushfire and Natural Hazards CRC this year taking over the role previously held by its predecessor, the Bushfire CRC.

## A new normal?

Australia is predicted to experience a trend towards an increasing number of bad fire weather days in its southern and eastern states, with fire seasons that begin earlier and last longer than in earlier decades. As benign fire seasons are predicted to become the exception, the concept of an average or normal fire season becomes less meaningful as historical long-term averages are surpassed by fire seasons that are regularly above normal in either duration, area burnt or in the total number of fires.

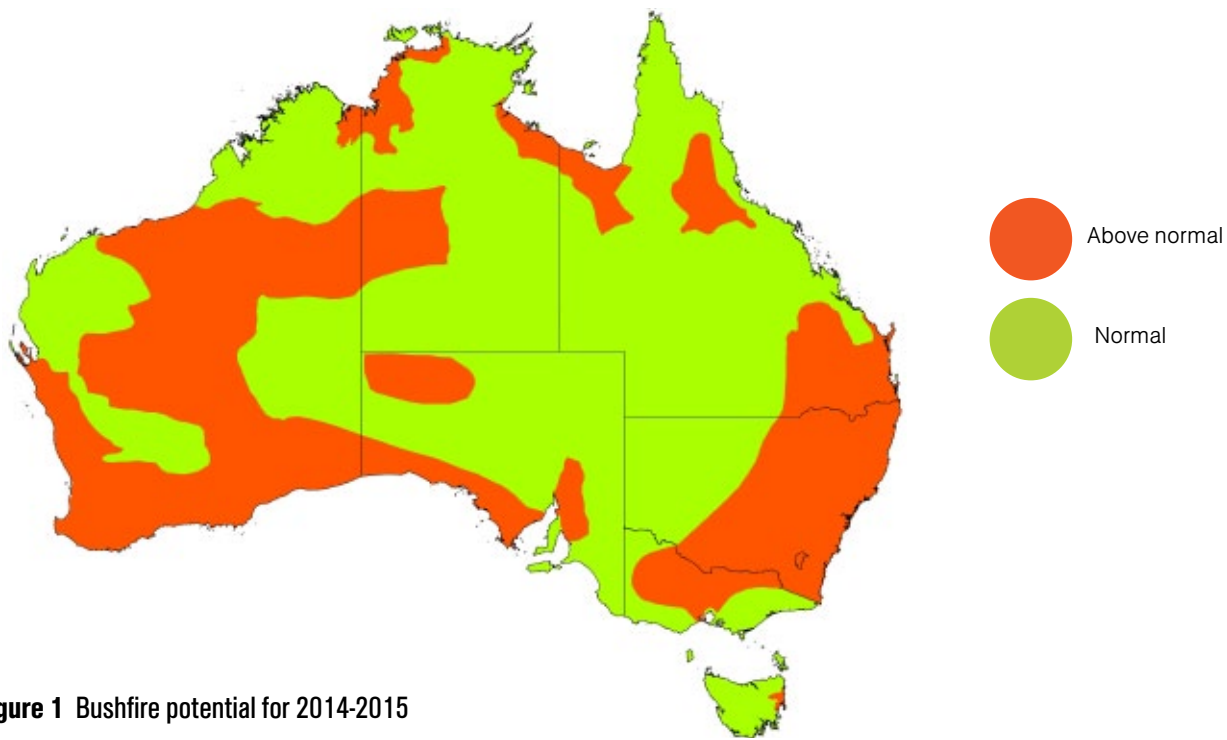
## What about this season?

Fire season potential depends on several factors. The volume, location and timing of rainfall in the period leading up to the fire season are critically important for estimating fuel loads and dryness. The temperature and rainfall outlooks are crucial factors for fire behaviour. Of particular importance are the future tendencies of Pacific Ocean surface temperatures associated with the El Niño–Southern Oscillation, a major driver of climate over much of Australia. Other factors, such as the distribution of firefighting resources, previous fire activity and the amount of prescribed burning, are also considered in the analysis of fire potential.

The *Southern Australia Seasonal Bushfire Outlook 2014–2015* includes a map highlighting bushfire potential. The shaded areas are drawn generally rather than specifically—this is intended as a broad-brush map, not one that tries to predict the outlook for regions or towns.

## Queensland

The overview for Queensland is that grass fire potential has generally been reduced as a result of the drought. Forest fuels continue to dry out, making more of the fine fuels available for the fire season. Recent wet seasons have failed to deliver widespread rains, resulting in significantly reduced rainfall, particularly in inland areas—more than 75% of Queensland is now drought declared. Rainfall from tropical cyclones was patchy last season, and as a result the pasture growth has varied across the state. In general, grassland fuel loads are significantly less than the average and curing across much of the state is ahead of the same time last



**Figure 1** Bushfire potential for 2014-2015

year. Above-normal fire potential has been assessed for much of south-east Queensland, from Bundaberg south-west to Gayndah, north-west to Biloela, south to Miles, across to Roma and down the Carnarvon Highway to the New South Wales border.

**New South Wales**

Much of NSW experienced well below average rainfall in the three months leading up to August. Temperatures have also been above average or very much above average for all of this time. This has resulted in significant drying of the heavy fuels in the forests. Reduced rainfall has also resulted in reduced growth and lower grass fuel loads through much of the west of the state. Under these conditions the drying trend will continue and it is expected to result in above-normal fire activity for the coastal tablelands and central slopes, while the risk of significant fire in the west of the state will be normal.

**ACT**

While the ACT does not have a strong signal for the severity of the coming summer, there are several reasons for expecting above-normal fire potential. These include strong grass growth into early winter, forecast above-average temperatures into summer and reduced rainfall in recent months.

**Victoria**

Victoria is expecting an above-normal season in many areas of central, north and western Victoria. Key factors are an overall rainfall deficit, coupled with the potential for an earlier start to the season. Areas with long-term rainfall deficits run from the west of Melbourne to the central Wimmera and also north through central Victoria into the Mallee. Another band exists extending from the north-east of Melbourne to the northern slopes of the Great Dividing Range. Shorter-term deficits are emerging in a broad band across much of the state's north, extending south to the northern rises of the Great Dividing Range. Similar deficits are emerging in coastal and southern Victoria,

although the exact pattern in these areas is not yet clear. Widespread above-average rainfall conditions are not likely, but even if they occur Victoria may still expect, given earlier conditions, a fire season slightly more active than last summer.

**Tasmania**

A normal fire season potential is expected over most of Tasmania, including the Bass Strait islands. There is above-normal potential in the central part of the east coast between Swansea and St Helens, extending around Fingal. The south of the state is relatively moist, including the Derwent Valley and the Southern Midlands. Forest fires are expected to be relatively normal up to December in the eastern half of the state, while forest fire activity in the west will be suppressed. Similarly, moorland and scrub fuels are expected to be relatively normal, while grassland fire activity will be low during spring and early summer.

**South Australia**

In South Australia, conditions indicate the most likely scenario is for near-normal fire potential across southern agricultural areas of the state, with parts of the North West Pastoral, West Coast, Eastern Eyre Peninsula, Lower Eyre Peninsula, Flinders and Mid North districts likely to show above-normal fire potential. All these areas of above-normal fire potential have experienced above-average rainfall in the period leading up to the fire season, resulting in above-average fuel loads.

**Western Australia**

Many areas of Western Australia are expected to experience above-normal bushfire potential. In the South West, reduced rainfall, a long-term deficit in the soil moisture and high fuel loads have led to above-normal fire potential. In the Mid West and Desert, the above-normal forecast is due to high fuel loads as a consequence of above-average rainfall. High rainfall across the Nullarbor, east of the Fraser Range, has also led to above-normal fire potential in this area. ■



# LEARNING FROM ADVERSITY AT KEY INDUSTRY CONFERENCE

This year's AFAC and Bushfire & Natural Hazards CRC conference showcased 100 top-quality national and international speakers alongside more than 80 leading exhibitors—proving again why this is the industry's largest and most important emergency services event.

**1.** Delegates arrive for the conference dinner at New Zealand's national museum, Te Papa.

**2.** Samantha Colwell, Fire and Rescue NSW, won the Dräger People's Choice Award, presented by Barry Gill, Regional Manager NZ, Dräger. Her research poster was chosen from more than 110 on display.

Nearly 1,100 emergency services representatives and researchers converged on Wellington, New Zealand, in early September for the annual AFAC and Bushfire & Natural Hazards CRC conference. The conference is the leading knowledge-sharing event for fire, land management and emergency services, with delegates attending from across Australia and New Zealand, the US, the UK, South Korea and many Pacific islands.

The conference theme was *After Disaster Strikes: Learning from Adversity*. Unfortunately in our region there is no shortage of disasters to learn from. Last summer, Australia experienced some of its most extreme heatwaves. New Zealand is still coping with the devastating Canterbury earthquakes, while several Pacific neighbours are

“The week was a great opportunity for all emergency management practitioners to learn what we are discovering about the biggest challenges in emergency management across the region, especially learning from New Zealand's Canterbury earthquake experience, and finding ways to use this knowledge every day to make our communities safer,” Dr Thornton said.

## Program

This year's conference saw the BNHCRC partner with AFAC for the first time, taking over from its predecessor, the Bushfire CRC. The CRC's research was on show all week, but kicking off the conference on day one was the sold-out Research Forum. The Forum showed why research and innovation are vital precursors for safer communities and better environmental management.

Close to 60 sessions were scheduled over the two-day main program, with leading experts sharing agency activities, research utilisation and case studies. The impact of disasters, sector capacity building and increasing resilience featured highly, with the program culminating in a closing panel on lessons learnt. Panel members—Paul Fuller, Chief Fire Officer of Bedfordshire Fire and Rescue Service, UK; José Santiago, Fire Chief of Chicago Fire Department, USA; Tom Harbour, Director of Fire and Aviation Management at the US Forest Service; and Robyn Pearce, Director Human Services at Tasmania Fire Service—talked about the opportunities for sharing work across borders and the value of empowerment and mentoring to being a strong leader.

Finally, the week was capped off with four professional development sessions covering an introduction to emergency management for those new to the sector, the Australasian Inter-agency Incident Management System, a mission command master class, and how to navigate emergency intelligence feeds. Four

“Fantastic conference. The networking was excellent. The papers/presentation were fantastic. Posters were great.”

still recovering from cyclones and tsunamis.

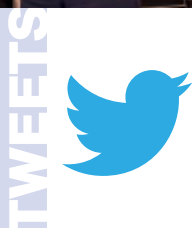
Natural and man-made disasters strike all countries, but particularly in our region, said AFAC CEO Stuart Ellis.

“The conference was designed to bring together and share the combined wisdom of experience, research and analysis from across the sector to enable a deeper understanding of the approaches needed to secure the region's future and prosperity,” he said.

BNHCRC CEO, Dr Richard Thornton, said the conference showed why research and innovation are more important now than ever.



2



- A lovely few days in Wellington, NZ learning from the best in the fire business.
- Impressive fire and emergency trade show now open at #afac2014
- Interoperability at work #afac2014
- A brilliant @AFACnews gala dinner @Te\_Papa Amazing dancers, fascinating artefacts & beautiful culture to boot
- Closing ceremony at #afac2014 – what a hugely educational few days. Thanks for the hospitality #wellington @AFACnews
- Another great AFAC conference. @AFACnews and @bnhcrc – great event, looking forward to Adelaide. #afac2014



field study tours took participants to Christchurch to see the earthquake recovery firsthand, New Zealand's Crisis Management Centre in Wellington, the Fraser Trucks factory, and the upper South Island to learn about the fuel types, typography and fire risks.

### Awards

Several awards were presented to industry personnel throughout the conference. The Laurie Lavelle Award, acknowledging significant contribution to enhancing the knowledge or skills, operations, performance or public profile of the emergency services sector, was jointly presented to Anthony Clark of the NSW Rural Fire Service and Mark Wright from the Tasmania State Emergency Service. The Motorola Knowledge Innovation Awards, recognising innovation, creativity and contribution to the advancement of knowledge management, were taken out by the New Zealand Fire Service and the Victorian Country Fire Authority, with the Individual Award presented to Richard Host from Fire and Rescue NSW (see page 6).

Poster awards, sponsored by Dräger, were also presented. The Judges' Award went to Lisa Langer and Mary Hart of Scion Research, while the People's Choice Award was presented to Fire and Rescue NSW's Samantha Colwell. A special award was also presented to outgoing Bushfire CRC CEO Gary Morgan for his contribution to establishing the national science and research program for bushfires and natural hazards.

Thank you to our major conference sponsor Scania, and supporting sponsors Dräger, Motorola Solutions, VectorCommand GAAM, Luxfer Gas Cylinders and Isuzu for their ongoing support. An extended thank you to all delegates, AFAC and BNHCRC staff and the Conference Planning Committee for all their hard work in making this year's conference such a success. We hope to see you again next year in Adelaide. ▀

**3.** The conference was officially opened with a traditional pōwhiri welcome.

**4.** Closing panel members L-R: Robyn Pearce, Director Human Services at Tasmania Fire Service; José Santiago, Fire Chief of Chicago Fire Department, USA; Tom Harbour, Director of Fire and Aviation Management, US Forest Service; and Paul Fuller, Chief Fire Officer of Bedfordshire Fire and Rescue Service, UK.

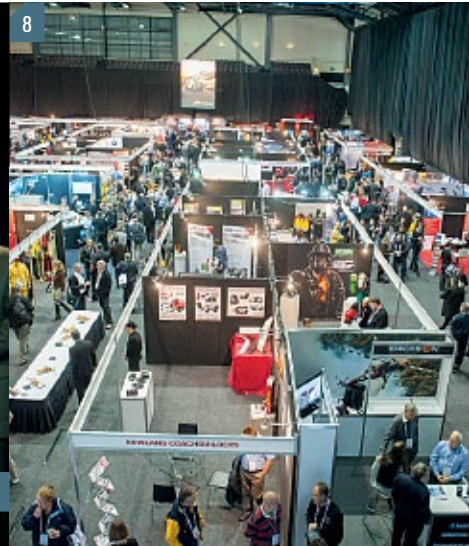
**5.** AFAC CEO Stuart Ellis (R) with conference host Paul Baxter, Chief Executive and National Commander, NZFS (L) and international speaker José Santiago, Fire Chief of Chicago Fire Department, USA (C).

**6.** Professor Kathleen Tierney of the National Hazards Centre, University of Colorado, USA, delivers her address to a sold-out Research Forum.

"It is amazing to see such a high level of participation and engagement from a wide range of stakeholders (researchers, end users, private sectors and policy-makers). And the discussions that were generated during the conference ... truly inspiring!"

**7.** AFAC CEO Stuart Ellis (C) and BNHCRC CEO Richard Thornton (R) present a donation to Angeline Upchurch of the Hutt Burns and Plastic Surgery Unit.

**8.** The 2014 exhibition featured more than 80 leading manufacturer trade displays.



**Proceedings:** Speaker audio recordings, abstracts, papers, presentations and research posters can be downloaded from [www.afac.com.au/events/proceedings](http://www.afac.com.au/events/proceedings).

# SUSTAINABLE VOLUNTEERING— HOW CAN WE DO IT DIFFERENTLY?

**By David Bruce**  
Communications  
Manager, Bushfire  
and Natural  
Hazards CRC

New research is focused on retaining active emergency services volunteers, and better engaging untrained ‘informal’ volunteers who offer to help when incidents and natural disasters happen.

A familiar sight at the scene of a natural hazard emergency is the arrival of highly motivated individuals ready to assist in whatever way they can. There is nothing new in that—our volunteer fire and emergency service organisations were founded in communities of local volunteers.

Over many decades, as the official emergency service agencies have become more professional, accredited and organised, the role of the unofficial and informal volunteer has sat uneasily with the official response.

## Project on informal volunteers

A project in the Bushfire and Natural Hazards CRC will develop new approaches to dealing with the reality of volunteering today—integrating the formal and the

informal volunteer into the full spectrum of incident prevention, preparation, response and recovery.

Project leader Professor John Handmer, of RMIT University, says that although this issue has been widespread for a long time, it has been the subject of little research.

“We know that very large numbers of people quickly converge on incidents saying they want to help. And no one has really looked at this in a research sense in Australia or New Zealand. These people are willing and usually able to help but they don’t want to be a part of the formal response organisations.

“There is a significant and largely untapped opportunity for emergency management agencies to contribute to building community resilience to natural hazards by supporting and engaging with non-traditional emergency volunteers—and volunteering organisations—in new ways,” Professor Handmer says.

The traditional model of emergency volunteering in Australia and New Zealand is based on formally accredited volunteers who are affiliated with state emergency management agencies and are largely involved in response and recovery roles. While this form of volunteering is crucial and has many strengths, it excludes the potentially large number of people who are motivated to volunteer before, during and after emergencies in a less ongoing and formal way.

“One thing that has changed in recent times is that spontaneous volunteering is now not necessarily place specific. It used to be just about turning up at the incident site but agencies are now dealing with networks of remote—mostly online—volunteers harnessing resources and people to respond. Many of these people may be nowhere near the actual incident site but they are having an impact on the response, often over an extended period. They may be organising people or donations, or connecting people with resources, for example,” Professor Handmer says.



PHOTO: EVE WELCH, UNIVERSITY OF CANTERBURY



PHOTO: BLAZE AID VOLUNTEER

Fellow RMIT University researcher Dr Joshua Whittaker notes that almost everyone in society has the potential to volunteer in a crisis.

“In many cases the first people on the scene of an emergency or a disaster are these local volunteers. The initial response is often local—by spontaneous and untrained people. Then later, the emergency services arrive and these initial efforts are often sidelined or stifled. At the other end of the incident, when the formal relief and recovery services have finished, the community is still there dealing with these problems, largely through volunteers,” Dr Whittaker says.

The role of volunteers in increasing community resilience to disasters is recognised in both the priority actions of the United Nations Office of Disaster Risk Reduction’s Hyogo Framework for Action and the priority outcomes of the Australian National Strategy for Disaster Resilience.

“It is pretty hard to implement these strategies if we are saying that everyone should just wait for the emergency agencies to turn up. It is actually about well-prepared and self-sufficient communities.

“And in a lot of communities that capacity already exists. That may be a group that forms with a specific intent like BlazeAid, or it might be an existing sporting or community organisation that responds by drawing on its established resources and networks,” Dr Whittaker says.

Given the growing exposure of people to natural hazards due to rapidly expanding settlements in rural, coastal and fringe areas over recent years, it is likely that non-traditional volunteers will provide the bulk of the additional surge capacity needed to deal with the more frequent natural hazard events occurring under climate change.

At the same time, there are more and more examples of government and non-government

Spontaneous volunteering groups such as BlazeAid, which repairs and replaces fences damaged by bushfires, have formed with a specific intent.

Far left: Christchurch’s Student Volunteer Army in action post-earthquake. The research will develop a model for agencies to better work with groups such as this.

Centre: A BlazeAid volunteer repairs a fence damaged by the Black Saturday bushfires in 2009.

Below: There is a significant and largely untapped opportunity for emergency management agencies to contribute to building community resilience by supporting and engaging with non-traditional emergency volunteers in new ways.



PHOTO: BLAZE AID VOLUNTEER



PHOTO: EVE WELCH, UNIVERSITY OF CANTERBURY



PHOTO: EVE WELCH, UNIVERSITY OF CANTERBURY

Large amounts of people converge to help after a natural disaster, but how formal agencies can best utilise this has not been the subject of research until now.

organisations, and motivated individuals and groups, finding new ways to harness the capacities of non-traditional emergency volunteers. However, these examples are isolated and have not yet been integrated into new and more inclusive models of volunteering for the emergency management sector. The development of new, coordinated models is needed to provide a framework for engaging further with this potential additional workforce.

Dr Whittaker acknowledges that this type of volunteering is not new. “But what is new is the acknowledgement by the emergency services that these people are out there and they are doing good things. How can we best work with them?”

“This is really an acknowledgement of the importance of these people right through from the 80-year-old sandwich maker, to the bloke with a shovel, the person who rushes to free people from the rubble, or the distant internet fund-raiser.”

This project will select case studies to illustrate both the benefits and the problems with non-traditional volunteering. Dr Whittaker explains: “It’s not always positive. Sometimes it can create problems for the emergency services.

“One of the examples that is often discussed is the huge convergence of people on the scene of Ground Zero after 9/11. They had tens of thousands of people descend on New York City—locals, but also people from all around [the USA], all wanting to help. That become a major logistical challenge for the emergency services who had to then manage this. It created real problems. Many turned up wanting to help, but they didn’t know how to help. They couldn’t really help. The best thing they could do was not be there but this created all sorts of tensions and problems from the agencies’ point of view.”

Professor Handmer says the project will develop a model for agencies to better work with non-

traditional volunteers. “But that is a high-level goal. The benefits are not just for the agencies. It will benefit communities because they are the ones most affected.

“Community resilience is about involving communities in emergency management, it is about them taking responsibly for their risk, and preparing and responding in the best way. And to ensure that when they are doing good things on the ground the formal system supports and facilitates the community,” Professor Handmer says.

### Retaining active volunteers

A related project in the CRC is focusing on improving the retention and engagement of volunteers in emergency service agencies.

The NSW State Emergency Service (SES) estimates that the attrition rate of active volunteers is around 20% each year. High attrition rates create high operating costs (recruiting, training and equipping volunteers) and it reduces organisational effectiveness by leaving a small, overworked core of experienced and trained volunteers. This phenomenon of high turnover in the volunteer sector is not restricted to the SES—it is a common problem in most volunteer organisations.

This project, led by Dr Michael Jones at the University of Wollongong, will help volunteer-based organisations better use and manage both their resources and their volunteer workforce.

Findings from this project can be used by comparable organisations across Australia to optimise their workforces and financial strategies to better serve their communities. ■

### Key research objectives

1. Identify how non-traditional emergency volunteering contributes to building community resilience to disasters throughout different phases of emergency management.
2. Identify ways the emergency management sector in Australia and New Zealand can promote community resilience through support of non-traditional emergency volunteering.
3. Develop and evaluate alternative models for emergency volunteering in Australia and New Zealand that are inclusive of non-traditional volunteering and volunteering organisations.





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# WORMALD MARKS 125 YEARS OF FIRE PROTECTION

Wormald started as an Australian company 125 years ago. Since then the company has expanded its services and size, and is now part of the multinational Tyco International.

## Fighting fire—an Australian success story

Fighting fires has come a long way since the days when brigades would form lines to pass down water buckets and hand pumps to put out a fire. While the Industrial Revolution saw more sophisticated modes of firefighting equipment used and the invention of early sprinkler systems, fire prevention today has become a science that is continuously evolving with innovative solutions that make it easier to overcome the most intense blaze.

Wormald is an Australian company with a rich history in fire prevention dating back to 1889, when Joseph Wormald established a fire protection business with business partner Stanley Russell. The company is one of the most recognised names in the industry, known for providing world-class fire protection services, training and equipment, and vehicle fire-suppression systems. Joseph's brother John (later Sir John) Wormald, the eldest of three Wormald brothers, was also responsible for writing a pamphlet outlining the first set of code rules for designing the early automatic sprinkler systems.

## First automatic sprinkler system

The Grinnell sprinkler, a sensitive valve automatic fire sprinkler system developed by Frederick Grinnell,

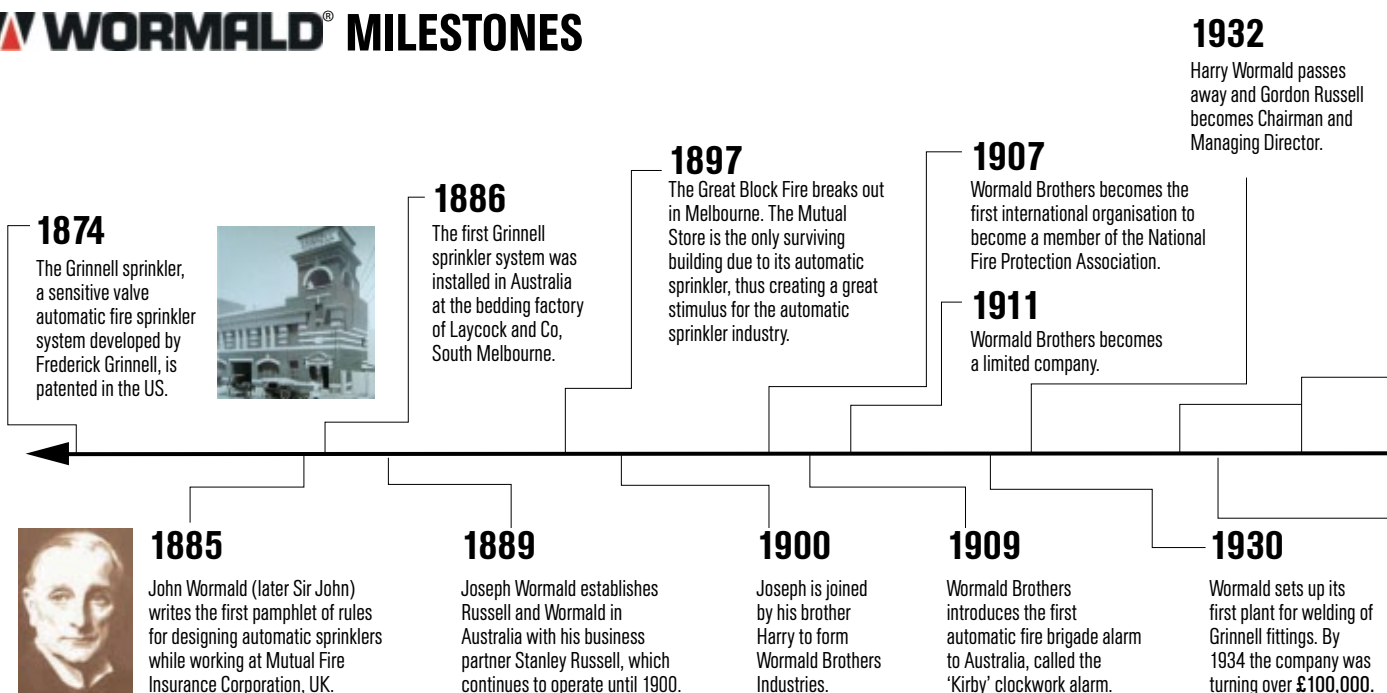
was patented in the USA in 1874 and recognised by underwriters as practically perfect.<sup>1</sup> At the time, John Wormald was working for Mather and Platt, who in 1873 had won the international patent rights for the Grinnell for all areas outside North America.

In Australia, Mather and Platt installed the first Grinnell sprinkler system in 1886 at the bedding factory of Laycock, Son & Nettleton in South Melbourne.<sup>2</sup> This system was put to the test after a fire broke out later that year, with the system saving the building from devastation.

The following year, in November 1897, Melbourne was left shaken by the Great Block Fire. After this devastating fire, The Mutual Store was the only building in the block of 40 to survive because it was the only one that had been fitted with an automatic sprinkler system. Following the Great Block Fire, all major soft goods stores in Melbourne and Sydney had sprinklers installed, creating great stimulus for the automatic sprinkler industry.

In 1889, Joseph Wormald was given the Australian distribution rights for the Grinnell sprinkler head. Together with Stanley Russell, he established Russell and Wormald, which continued to operate until 1900 when Joseph joined forces with his younger brother Harry to form Wormald Brothers Industries Limited.

## WORMALD® MILESTONES



## Early advancements in fire protection

The Wormald founders have been widely recognised as industry pioneers. Joseph Wormald was a passionate advocate for fire protection and an active champion for the importance of keeping up-to-date fire records. He was one of the first people outside the US to become a member of the National Fire Protection Association and later, in 1907, secured Wormald as one of the first overseas organisations to achieve membership.<sup>3</sup>

Throughout the 1900s, Wormald continued to deliver innovation in fire protection systems and equipment. In 1909, Wormald Brothers Limited introduced the first automatic fire brigade alarm to Australia, called the Kirkby clockwork alarm, which was attached to a sprinkler system. At the time this sprinkler system was a ground-breaking development and subsequently installed in numerous railway and tram sheds, buildings and factories throughout Australia. It worked well until it was superseded by the MFB hydraulically operated alarm.

The Roaring Twenties, and the subsequent Depression years, saw the business diversify with new product lines to supplement the business including hand extinguishers, foam systems and specialist systems for aircraft and electrical fire stations. The company manufactured foam fire extinguishers for flammable liquid fires, which included using unusual charging ingredients such as liquorice and a foaming agent from the bark of the South American Quillaja (or soap bark tree).<sup>4</sup>

The onset of World War II saw a time of tremendous growth for Wormald. Production of the company's fire extinguishers dramatically increased from 10,000 a year to a staggering 71,000 a year. It also produced 238 'crash tenders' from prototypes developed for the Civil Aviation Department. These vital machines had the ability to carry at least a tonne of water, a 2,000 litre generator, hose reels and a large quantity of hand extinguishers.

During the six years of WWII, many lives and planes were saved by the operation of Wormald equipment and its contribution of 432,380 hand extinguishers, CO<sub>2</sub> and bromide systems. The company also established air radio firefighting units to work in cooperation with fire brigades. Being a time of rationalisation where supplies were cut, the war years required Wormald to think outside the box to solve issues, including having to formulate a solution to producing foam using sea water, and new technical developments such as electro-pneumatic heat detectors and radioactive smoke detectors. Wormald also continued to design and manufacture marine pumps, crash tenders and crash boats. It provided 20-tonne airport crash trucks for civil and aviation use, installed BCF systems on frigates for the Royal Australian Navy and fitted deluge systems into the Qantas jumbo hangars in Sydney.

## Consolidation and global expansion

Following the war, the business was awarded the rights to distribute a new mechanical foam dispenser from Sweden, and introduced the Walter Kidde Company's new CO<sub>2</sub> product and equipment to Australia. These were years of monumental growth that culminated in registration as a public company in 1949.

While the business continued to acquire a number of products and sprinkler installation companies, Wormald made a significant move in 1960 when it purchased Electric Signals Pty Ltd, a burglar alarm company with 'central stations' (as monitoring centres were known back then), following in the footsteps of its the US counterpart, Grinnell, which owned the largest central station chain in the US, American District Telegraph. This marked the beginning of Wormald's involvement in the security industry.

## Today's fire protection powerhouse

For anyone affected by fire, the impact is devastating

### 1939-1945

World War II sees Wormald increase its production of fire extinguishers from 10,000 a year to 71,000 a year.



### 1978

Wormald purchases Ansul, a manufacturing and distribution company in the US.



### 1990

Wormald joins Tyco, the world's leading fire and security company.



### 2009

The Wormald brand launches in Singapore.

### 2010

Wormald develops the SAPPHIRE<sup>®</sup> MRI Extinguisher, which uses a unique chemical stored in liquid form that when released quickly vaporises and fights fire by absorbing heat.



### 1949

Wormald Brothers Industries Ltd is officially registered as a public company.

### 1941

Wormald New Zealand is registered on 1 July.



### 1960

Wormald supports the establishment of the Australian Fire Protection Association (AFPA).



### 1996

Wormald develops the INERGEN<sup>®</sup> breathable and environmentally friendly gas fire-suppression system for enclosed spaces.

### 2014

Wormald launches an internet-based customer service portal, giving customers round-the-clock access to their fire protection data and service schedules.

The 1897 Melbourne Block Fire, from the La Trobe Collection, State Library, Victoria.



and the emotional and financial implications can make it hard to recover. Research shows that 60% of companies that suffer a serious fire go out of business,<sup>5</sup> and even if nobody is injured, a serious fire can mean people lose their jobs.

The fire protection industry today has become increasingly sophisticated and Wormald has continued to innovate. Its advancements in research and development of modern fire protection solutions and equipment have seen it become a leading voice in fire protection. Wormald is an industry leader in providing education and training, fire prevention programs and fire-risk analysis for a wide range of organisations including mining, marine, industrial, commercial and retail industries, as well as corporate and government bodies.

Emergency response training is mandatory for organisations in order for them to comply with state and territory occupational health and safety legislation, and employers must provide staff with appropriate evacuation training and materials. Trained staff who understand fire, know how a fire spreads, and know which specific fire protection equipment should be used in specific situations are extremely valuable for any business. Nationally accredited training courses and bespoke training programs that address any crisis situation, including fire, gas leaks and bomb threats, have become a core part of the Wormald business.

To keep pace with new technology and industry requirements, Wormald's team of highly specialised engineers has made a number of breakthroughs. Advanced fire protection systems and equipment include fire sprinklers, alarm systems and new environmentally friendly solutions that use Wormald patented chemical agents which emit almost zero greenhouse gas are now standard in many businesses.

The Special Hazards team has also become a core part of the Wormald business, servicing high-risk clients in industries that have production-

intensive assets or live electrical equipment that requires specialised solutions, such as non-magnetic solutions for the MRI industry. Wormald developed the SAPPHIRE® MRI extinguisher, which uses a unique sustainable chemical that is stored in liquid form but, when released, quickly vaporises to fight fire by absorbing heat. This solution protects hazard areas that house sensitive electronic equipment, and is an environmentally friendly, non-corrosive, non-conductive firefighting agent.

Likewise, large oil and gas plants, power and mining operations, switching stations and transmission facilities also require highly specialised and targeted fire-suppression and detection systems, which have dramatically changed over the years. The range of solutions available today can be tailored to large or small businesses, or commercial or residential premises. Solutions include automatic sprinklers, pre-actions, drenched pumpsets and fire hydrant systems, a comprehensive water spray portfolio, foam, dry chemical and gaseous systems for special hazard fire protection risks.

Vehicle fires can also be extremely dangerous and intense. Wormald's advanced foam water spray fire-suppression systems and Ansul chemical powder fire-suppression systems are designed to fight intense engine fires.

Wormald has become a leader in providing state-of-the-art emergency breathing apparatus, and supplies emergency air systems, gas and respiratory masks, communication devices, air compressors, gas detection units and thermal imaging cameras. These have been designed for law enforcement personnel, the military, oil and gas facilities, and mining and utilities industries.

As technology evolves and legislation relating to fire safety is updated, solutions like Wormald Connect, an online portal designed for facility and building managers, are making it easier to keep track of fire safety requirements. This complementary service allows Wormald clients to keep track of scheduled fire safety audits, equipment maintenance and testing.

In 1990, Wormald was acquired by Tyco International, yet the name Wormald remained. The business continues to be a leading provider of fire protection and solutions in Australia. The brand is also a leader in the industry through its extensive representation on legislative and industry boards, and involvement in setting technical standards and advisory committees that help to keep its customers abreast of changing regulations that may affect their businesses.

In 2014, Wormald celebrates its 125<sup>th</sup> birthday, a momentous milestone, and over the past 20 years, Wormald's rapid expansion and public acquisitions have resulted in exponential growth. From modest beginnings with small offices in Sydney and Melbourne, to being part of a major international company under Tyco International, Wormald is proud to be part of the world's leading fire and security business, operating in more than 50 countries around the world. ■

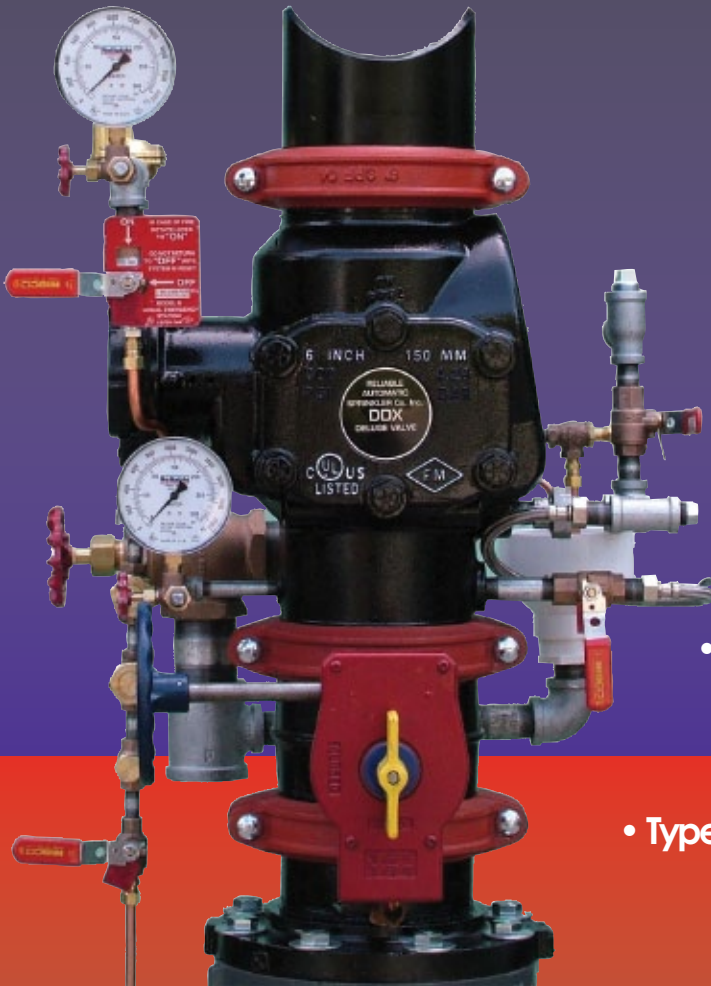
Find us at [www.wormald.com.au](http://www.wormald.com.au).

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# GLOBAL PROGRESS ON PPE STANDARDS

**By Simon Burnett-Boothroyd**

UK Committee representative on ISO/TC 94/SC 14, Sales & Innovation Executive – Protection, AW Hainsworth & Sons Ltd

**and Russell Shephard AFSM**

Chair ISO/TC 94/SC 14, Standards Manager, AFAC

The quality and cost-effectiveness of personal protection equipment for firefighters are set to improve through a collaborative international approach to PPE Standards.

International Standards are becoming increasingly important, as firefighters from different countries routinely attend disasters all over the world, often facing conditions different to what they are used to at home. International Standards help to ensure firefighters are as safe as possible, no matter where in the world they are deployed. With this in mind, members of the Firefighters Protective Equipment Committee helped to ensure that International Standards for personal protective equipment (PPE) took a significant step forward when they met in Sydney at the end of July to continue aligning the work of the industry on a global scale.

More than 40 representatives from 15 countries, and a further 30 observers, attended the International Organization for Standardization (ISO) TC 94/SC 14 meeting, hosted by Standards Australia and AFAC. AFAC has supported the development of Australian and International Standards for many years and through Russell Shephard, AFAC Standards Manager and SC 14 Chair, this important work continues.

During the intensive five-day meeting in Sydney, a number of work programs were either signed off or developed. One substantial development was the decision to create a new Transport Rescue Incident (TRI) Standard. This Standard

Representatives from 15 countries attended the ISO/TC 94/SC 14 meeting in Sydney.



PHOTO: FIRE & RESCUE NSW

Development of International Standards help to ensure firefighter safety is at its highest.

will provide the benchmark for firefighter PPE used in transport-related environments.

After a lengthy discussion and debate, the SC 14 Committee agreed to move forward under the TRI banner. The program, previously discussed at a SC 14 meeting in Edmonton, Canada, will now be developed further to include key items such as clothing, gloves, helmets and boots.

The momentum gained in Sydney will not be allowed to slacken. A strict timetable is in place to ensure that the TRI program is ready to advance when SC 14 meets again in 12 months' time.

This harmonisation of Standards lends itself to an end goal that wherever firefighters are in the



PHOTO: STANDARDS AUSTRALIA

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PHOTO: FIRE &amp; RESCUENSW

Harmonisation of PPE Standards helps ensure that wherever firefighters are in the world, there is a Standard—a vital term of reference.

world, there is a Standard—a vital term of reference. During August, firefighters from Australia were called to support the efforts of exhausted Canadian fire crews tackling large-scale bushfires in British Columbia. Such exercises could be streamlined through uniformed International Standards.

The sense that the world is a much smaller place than it was even 10 or 20 years ago is helping drive the importance of ISO Standards. The impressive attendance, and wide range of countries, at the SC 14 Committee meeting points to a realisation that the global firefighting community needs to work much more closely to ensure the best possible response to incidents. In time, this may mean a comprehensive set of ISO Standards with territorial nuances to take proper account of varying firefighting environments.

### International collaboration

The most exciting and heartening aspect of the recent SC 14 discussions was the appetite of the attending countries to engage in working together for the common good. There was a genuine sense that

delegates understood the responsibility placed on them to educate and inform on a global level.

More countries are noticing the work of SC 14, and new countries are wishing to participate in this important work. With a new injection of international participants it is hoped that with it will come the skills and passion required to assist SC 14 to further develop ISO Standards for our industry. If we are to meet the ever-changing environment and increased number of hazards faced by the industry, as well as develop Standards that PPE can be manufactured to and be fit-for-purpose, we will need this level of support and expertise to continue.

From a manufacturer's viewpoint, meetings like SC 14 also provide the opportunity for leading manufacturers to monitor the latest trends in areas such as firefighting techniques and buying processes. One of the biggest changes we are seeing is the ever-greater collaboration among fire services in sharing intelligence, supporting one another operationally and joining forces for purchasing their PPE.

While collaborative buying will increasingly become the norm, it is clear from various conversations that long-term value rather than short-term cost savings will be a key driver in the market. This is something manufacturers have long argued for—that true value is found in quality products that are still performing as well as ever after several years. The industry preference would appear to be for highly engineered, innovative garments that last as long as possible, providing cost savings over the lifetime of the product.

The recent AFAC and Bushfire & Natural Hazards CRC conference in Wellington, New Zealand, provided leading manufacturers another opportunity to continue the discussion around harmonisation of standards, collaborative buying, cost versus product durability, current and future technologies, and many other topical issues.

There should be complete compatibility between the work of leading manufacturers and the various standards committees around the globe. Both should be about driving quality—in innovation and product design—and improving the survivability of firefighters wherever they are in the world, and whatever firefighting environment they face.

The technologies that are harnessed to develop today's PPE and the discussions that go on around the table of committees such as SC 14 may, at times, be highly complex. However, no one working in the industry should ever lose sight of the very simple brief given to all of us: to ensure that firefighters are able to return home safely to their loved ones.

Manufacturers of firefighter PPE are operating in a very specialist sector, one in which the products they produce can mean the difference between life and death on a daily, indeed hourly, basis. It is a sector that should never operate as a cold transactional business but rather one in which all parties—firefighters, procurement officials, manufacturers, standards committees and others—work in partnership to ensure that fire crews are afforded the greatest possible protection. ■





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# LEARNINGS FROM THE BUSHFIRE CRC

## What have we learnt from the science?



PHOTO: DAMIEN FORD, NSW/FRS

Detailed research investigated how to share responsibility for fire management between agencies and communities.

**By Brenda Leahy**  
Communications  
Officer,  
AFAC and  
Bushfire & Natural  
Hazards CRC

**and Nathan Maddock**  
Communications  
Officer, Bushfire  
and Natural  
Hazards CRC

This concluding part of a two-part feature profiles a selection of the research outcomes of the Bushfire CRC research program from 2010 to 2014.

**A**s emergency management organisations brace for the fire season, Bushfire CRC research offers new knowledge, models and insights to address fire and land management challenges, mitigate risk and improve safety initiatives. In-depth reports, along with four-page *Fire Notes* (research summaries in plain language) are available at [www.bushfirecrc.com/drivechange](http://www.bushfirecrc.com/drivechange).

### Responding to bushfire threat

People facing a bushfire threat typically respond in two ways: by acting on the actual threat or reacting emotionally through fear control. Professor Timothy Skinner (Charles Darwin University) and Professor David Morrison (Murdoch University) led the Information Under Stress: Community Reactions project.

This study provided significant insights into how people respond to bushfire threat and, for the first time, defined and measured 'bushfire preparedness'. Among its key findings, the project showed that householders experience extreme difficulty in deciding

whether to defend or evacuate their homes. This helps to explain why people delay, in certain circumstances, their ultimate decision until the day of a bushfire. When faced with two hard choices, they put off making a decision. This research was profiled in *Fire Australia* Spring 2013 (p.20), and work building on it continues in the Bushfire and Natural Hazards CRC.

### Fire in the landscape

This study comprised four connected projects investigating the effects of fire on water quality and quantity, and the changing nature of above and below-ground carbon pools after bushfire—some of the key issues that land management agencies face in managing bushfires. Dr Tina Bell, Dr Tarryn Turnbull and Dr Malcom Possell (University of Sydney), Dr Gary Sheridan, Dr Petter Nyman, Dr Chris Weston and Dr Liubov Volkova (University of Melbourne) have significantly advanced the understanding of key aspects of fire and ecology and their complex interactions. This study was profiled in *Fire Australia*

Summer 2013–14 (p.34), and related studies are being undertaken through the BNHCRC.

### Leave, stay and defend, or wait and see?

Evidence presented to the 2009 Victorian Bushfires Royal Commission suggested that a significant number of casualties might have been averted if residents had made (and acted on) decisions more appropriate to their situation. This research found that a principal driver of residents' actions under threat of a bushfire was what they intended to do beforehand.

Dr Jim McLennan of La Trobe University advanced the understanding of why community members might choose to either leave, stay and defend, or wait and see what develops after receiving a bushfire warning. This information could influence policies on evacuating, sheltering and defending in the face of hazards and disasters. This research was profiled in *Fire Australia* Winter 2013 (p. 14).

### Communities and bushfire

Led by RMIT University's Professor Peter Fairbrother, the Effective Communication study examined the role and scope of Australian bushfire and community safety communication in preparing householders for bushfire.

The team conducted nearly 250 face-to-face individual interviews, captured insights from 13 focus groups and gained input from 46 fire and other agency personnel responsible for bushfire management and communication.

Among its key findings, the study concluded that a strategic, interactive and tailored communication approach could help build resilience and have a lasting and measurable impact in fire-prone communities.

### Fuels in the interface

Householders living in fire-prone bushland areas recognise the high fire danger on their doorsteps, but many may treat fuel hazard reduction as a low priority.

This research explored how householders perceived the value and risks of living in or near bushland and analysed the complex mix of hazards, risk, benefits and value perceptions that influenced the way they approached fire hazard.

Professor Ross Bradstock and researchers from the University of Wollongong interviewed householders in four fire-prone communities in rural New South Wales to determine their perceptions of forest fuel

hazards and capture insights on the qualities in the natural landscape that they valued. These insights were combined with data obtained from comprehensive statistical modelling of fire risk and estimated the probability of house loss within these communities.

### Improving policy responses

The Mainstreaming Fire and Emergency Management project considered whether conflicting legal requirements and fear of litigation might impede decision-making in emergency management. Professor Stephen Dovers and Dr Michael Eburn of the Australian National University identified the impact of law on fire management and community resilience. The study also asked: What are the objectives of emergency management policy? And what are, or should be, the measures of success that will inform the community, agencies and the next post-event inquiry?

The study showed that Australian emergency management policy suffers from a lack of clear objectives or measures of success. This means that agencies, governments and citizens cannot identify whether or not policy objectives are being met and whether the emergency services are succeeding in their tasks. This research was profiled in *Fire Australia* Summer 2012–13 (p.32), and continues in the BNHCRC.

### Sharing responsibility for risk

In big-picture terms, sharing responsibility for disaster management is about the ways governments and citizens work together to minimise the potential impact of disaster events.

This project, by Professor John Handmer and Dr Blythe McLennan of RMIT University, sought to open up a process of discussion and examination of this widely supported principle. This was achieved by focusing on its meaning, significance and challenges for the way governments and citizens work together to manage disaster risk.

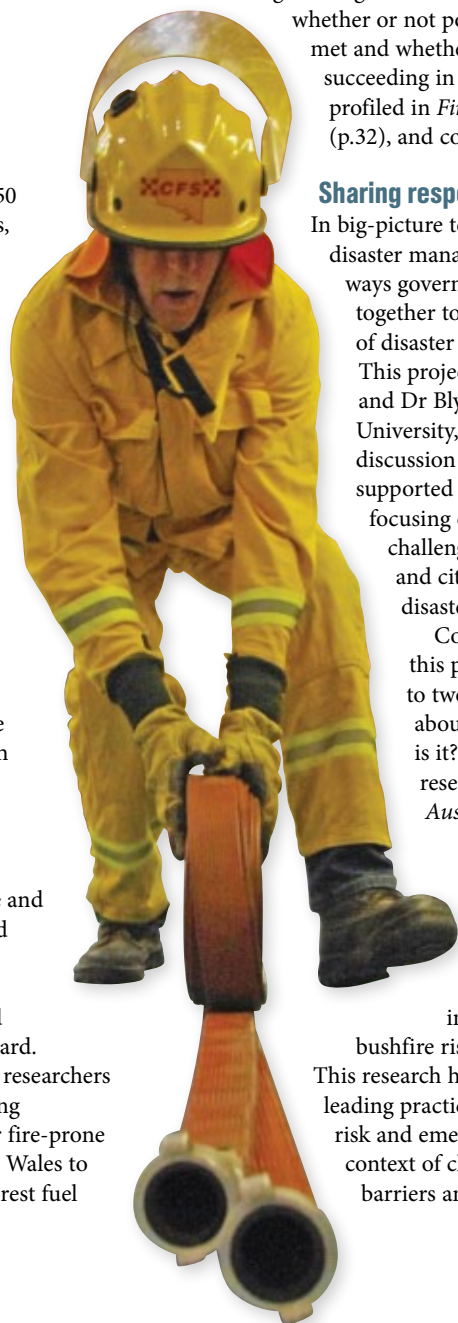
Collectively, the findings from this project provided some answers to two fundamental questions about shared responsibility: What is it? And how do we do it? This research was profiled in *Fire Australia* Autumn 2014 (p. 30).

### Urban planning and bushfire

The contribution of urban and regional planning to managing bushfire risk is increasingly significant, and integrating spatial planning and bushfire risk is a national policy priority.

This research has advanced the identification of leading practice in spatial planning for bushfire risk and emergency management in the context of climate change. It also highlighted barriers and enablers to leading practice.

A realistic simulation was developed to test the effects of sleep restriction and heat on firefighters in a controlled and safe setting.





How fire affects the environment has been significantly advanced thanks to Bushfire CRC science.



PHOTO: CFS PROMOTIONS UNIT

Research identified that Australian emergency management suffered from a lack of measures of success.

The University of Canberra's Professor Barbara Norman led the project, with the research team comprising Dr Jessica Weir and Dr Kate Sullivan. This research was profiled in *Fire Australia* Autumn 2013 (p. 40).

### Firefighter health and safety

Exposure to high temperatures, coupled with little sleep, can impair firefighters' performance on the fireground. The Operational Readiness of Rural Firefighters study, led by Professor Sally Ferguson (CQUniversity) and Dr Brad Aisbett (Deakin University), investigated the combined effects of these stressors on firefighters during suppression.

They studied more than 90 firefighters from crews around Australia in a series of intense three-day lab-based bushfire simulations. The firefighters, wearing full protective clothing, spent the three days living, sleeping and eating within the simulated settings. Understanding the role of sleep was one of the most important outcomes of the research, with shortened sleep impairing firefighters' hand-to-eye coordination and the self-assessment of their work performance. It also elevates their cortisol levels, but does not affect physical work performance. This research was profiled in *Fire Australia* Summer 2012–13 (p. 28).

### Potential toxin emissions

Emissions of toxic chemicals from burning building materials have previously been measured and characterised in laboratory tests, but to quantify the risk that the smoke poses to humans, the emissions need to be translated into exposure estimates. The Air Toxins study by CSIRO's Dr Fabienne Reisen identified, measured and modelled these toxic emissions more accurately than ever before. The research allows for a more targeted estimate of house-specific local toxic emissions, rather than averages over

the footprint of the house or suburb. This information will enable fire agencies to access information about exposure estimates and their likely spread at rural–urban interface fires, resulting in safer deployment of firefighters and providing better advice to the community. This research was profiled in *Fire Australia* Autumn 2014 (p. 18).

### Decision-making in the face of bushfire

The Community Level Influence on Individual Behaviour study, undertaken by Professor Carmen Lawrence (University of Western Australia) and Professor David Morrison (Murdoch University), researched community characteristics relative to property owners' perceptions of risk.

The research focused on how these community characteristics related to a range of physical, social and demographic factors, such as structural conditions (e.g. physical location, rural–tree change and rural–urban interface) and demographic features (e.g. age, number of children), and socio-economic elements such as community networks, social capital and community competence.

The researchers defined the profile of a well-prepared and resilient community and examined whether community-level interventions could improve the overall preparedness of community members.

### Changing thought patterns

The way people feel and think will influence the way they act when faced with a threat such as the possibility of a bushfire in their area. This study, led by Colin MacLeod (University of Western Australia) and Professor David Morrison (Murdoch University) investigated the extent and impact of anxiety, worry and cognitive biases among residents living in bushfire-prone areas.

The study identified the patterns of information processing that lead people to undertake bushfire preparations, thereby reducing their risk of bushfire danger. The work was undertaken in areas affected by the 2011 bushfires in Western Australia. Participants reported experiencing differing levels of anxiety and worry about fire risk. The study assessed a range of cognitive biases in attention, interpretation, memory and mental imagery. This research was profiled in *Fire Australia* Winter 2012 (p. 18).

### Is less actually more?

This research investigated whether shorter, more frequent shifts are better than regular day and night shift rosters currently used by fire and land management agencies in Australia. It was the first study of its kind to evaluate the use of these different shift work systems in a rigorous, controlled environment, using measures relevant to the cognitive demands of incident management and firefighting.

The research team, led by Dr Michelle Short (University of South Australia) and Dr Brad Aisbett (Deakin University), developed a testing procedure that evaluated the fatigue and mental performance implications of these shorter, more frequent shifts over a nine-day period. ■



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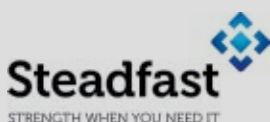
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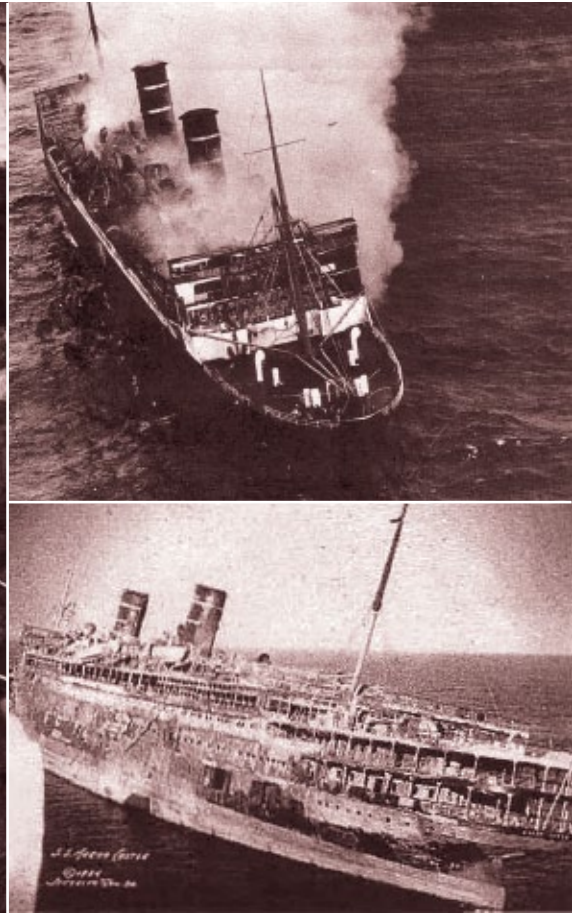
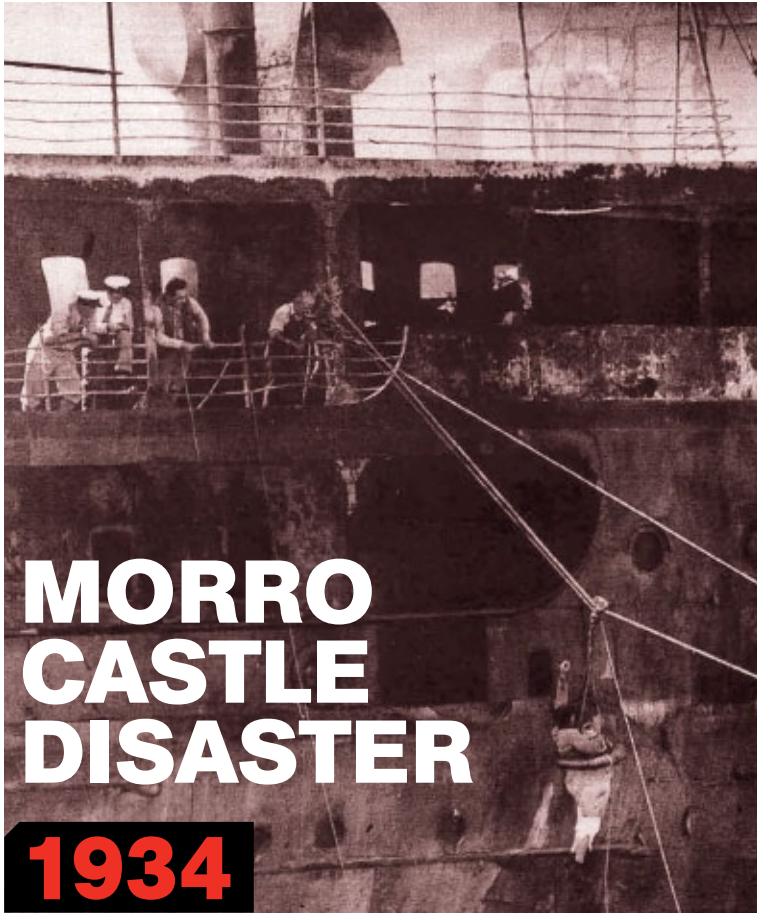


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By Barry Lee OAM

**O**n 8 September 1934, the luxury liner *SS Morro Castle* caught fire while approaching New York City, killing 137 people. The ship had left Havana, Cuba, three days earlier, running into some rough weather along the way. It carried 316 passengers and a crew of 232. The fire was discovered in a storage locker within the first class writing room on B deck at about 2:50 am and it quickly spread throughout the ship. The order was given to abandon ship, but shortly thereafter flames damaged the electrical system, plunging the vessel into darkness.

To further complicate matters, radio communications were impeded (only one SOS message was transmitted) and fire destroyed the hydraulic steering system, making it impossible to navigate.

Panic ensued as those onboard sought safety. Many were faced with death from fire or jumping overboard. Only half of the ship's 12 lifeboats were lowered and on them only 85 people (mostly crew members) sailed to safety. Many who

jumped overboard were killed by their life vests, which shifted when they hit the water, causing massive injuries and knocking some unconscious. The ship eventually beached itself near Asbury Park, New Jersey, and remained there for several months until it was towed off and scrapped.

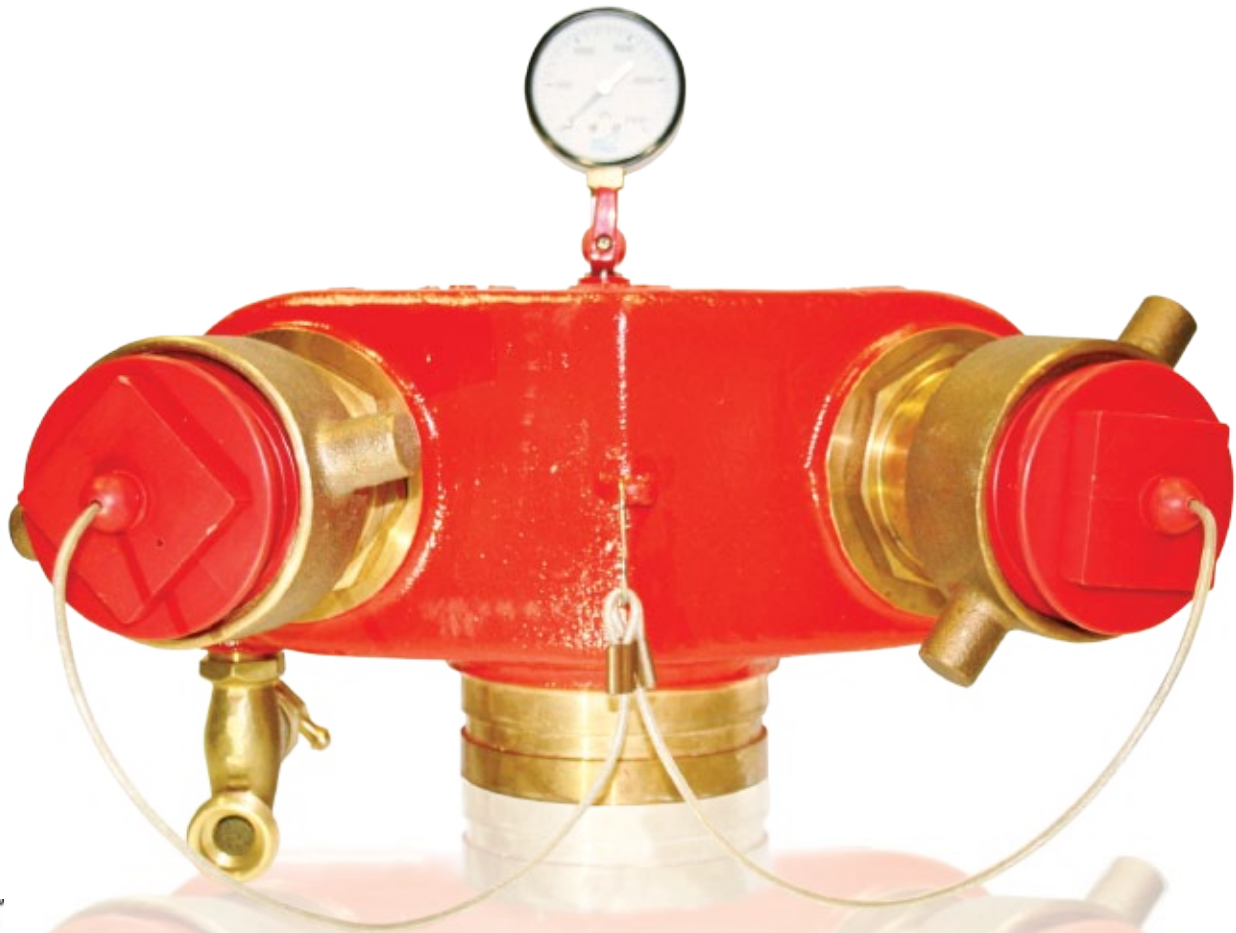
Factors contributing to the *SS Morro Castle* disaster included highly flammable veneered wooden surfaces and glued ply linings, extensive concealed spaces behind the linings, inadequate coverage by fire detectors (which were omitted from lounges and the dance hall, writing room and library) and poor crew training. At the time of the fire the crew opened almost all working hydrants, dropping the water pressure to unusable levels everywhere.

This disaster was the catalyst for improved shipboard fire safety. The use of fire-retardant materials, automatic fire doors, ship-wide fire alarms and greater attention to fire drills and procedures result directly from the *SS Morro Castle* disaster. ■

The *SS Princess Maud*, an LMS cross-channel steamer, was the first British-built ship to be protected by an automatic sprinkler system. A demonstration fire in one of the cabins on the *SS Princess Maud* was successfully extinguished on 15 February 1934—a little over six months before the *SS Morro Castle* disaster.



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### About the conference

Fire Australia 2015 is the premier fire protection industry conference, attracting a wide range of representation from businesses, government and fire safety practitioners.

Regular attendees of the conference will notice it has moved from a November

schedule to March. This is to move away from peak conference season, providing the opportunity to attend to more industry personnel.

Building on the success of the last conference and exhibition, Fire Australia 2015 will once again provide delegates with the option of attending multiple streams over two days.

The streams will provide a mix of presentations focusing on industry-wide and industry-specific topics. The industry-specific streams will cover the key industry sectors of early warning and detection, fire suppression, passive fire protection, evacuation and emergency management and bushfire.

Presentations will address current issues, industry direction and challenges, and technical content relevant to those with an involvement in the fire protection industry.

The exhibition will once again be a main feature of the event, located centrally at the conference. Sponsors and exhibitors have the opportunity to present their products and services within the exhibition hall. These presentations will occur during breaks in the plenary sessions.

With speakers from across Australia and overseas, the organisers aim to ensure all presentations are topical and current, affording attendees across all roles in the fire protection industry additional knowledge and information.

### Who should attend?

- Fire consultants, engineers and technicians
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- Fire equipment manufacturers, distributors and installers
- Regulatory authorities and legislators
- Insurance professionals
- Facility managers, property developers and building owners
- Architects, building designers and specifiers
- Building surveyors
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For more information about Fire Australia 2015, see the advertisement on page 21 of this magazine or visit the conference website at [www.fireaustralia.com.au](http://www.fireaustralia.com.au).

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## By Kevin Burns

Technical Administrator, FPA Australia

### TAC/1 Maintenance of fire protection systems and equipment

The Standards Australia project proposal submitted earlier this year by FPA Australia for a mainly editorial amendment to AS 1851-2012 has now been approved. TAC/1 continues to discuss a number of technical documents in regards to maintenance.

### TAC/2 Fire detection and alarm systems

TAC/2 continues to take an active role in FP-002 projects including submitting proposals for the direct text adoption of ISO 7240-23 *Visual alarm devices* and ISO 7240-24 *Sound system loudspeakers*, providing public comment on AS 4428.16 *Emergency warning control and indicating equipment* and contributing to the ongoing review of AS 1670.1.

TAC/2 also assisted in developing FPA Australia's response to the National Construction Code 2015 public comment draft.

### TAC/3/7 Portable and mobile equipment

TAC/3/7 developed Information Bulletins on the date-of-manufacture stamping of extinguisher cylinders and on the safe handling of extinguishers during servicing. These have now been published. The TAC has also assisted with project proposals to revise AS 2444 and AS 1850.

### TAC/4/8/9 Fire sprinkler and hydrant systems, tanks and fixed fire pumps

TAC/4/8/9 continues to work on documents on isolation valves for fire sprinkler and fire hydrant systems and on fire hydrant testing. The Position Statement on water tanks for fire protection is being finalised for publication.

### TAC/11/22 Special hazards fire protection systems

FPA Australia received confirmation from Standards Australia that our project proposal to revise AS 5062 has been approved. Unfortunately, the project proposal for revision of AS 14520 (which was to be produced as AS 4214) was rejected at this time as the ISO Standard it is based on is currently under revision.

TAC/11/22 continues to work on a number of technical documents, with the Information Bulletin on the selection and use of firefighting foams published in July and the draft Good Practice Guide on oxygen-reduction

fire prevention systems to now be developed as an Information Bulletin.

### TAC/17 Emergency planning

As amendment 1 to AS 3745-2010 has now been published, the draft Information Bulletin on evacuation diagrams is being updated accordingly. The TAC is also involved in the establishment of a new accreditation scheme for workplace emergency response consultants.

### TAC/18 Fire safety

### TAC/19 Passive fire protection

TAC/18 and TAC/19 continue to discuss a number of possible technical documents on

such topics as access panels, penetrations and use of polyurethane foam. The Good Practice Guide on the installation and maintenance of intumescent fire dampers has been delayed but is expected to be published in the near future.

### TAC/20 Bushfire safety

TAC/20 continues to discuss a number of technical documents including topics such as sarking, water spray systems and shelters.

### TAC/T

The TAC/T continues to work on a Technical Advisory Note on working in hazardous areas (explosive atmosphere). ■

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## By Kevin Burns

Technical Administrator, FPA Australia

### FP-001 Maintenance of fire protection equipment

The project proposal for amendment of AS 1851-2012 to address identified technical and editorial issues has been approved by Standards Australia. FP-001 is yet to be re-formed and begin this project.

### FP-002 Fire detection and alarm systems

Project proposals for the direct text adoption of ISO Standards for visual alarm devices (ISO 7240-23) and sound system loudspeakers (ISO 7240-24) have been approved.

Public comment on the Australian adoption of ISO 7240-16 *Emergency warning control and indicating equipment* closed in early September.

The revision of AS 3786 has gone through committee ballot and will hopefully be published in the near future.

FP-002 continues to work on the revision of AS 1670.1.

### FP-004 Automatic fire sprinkler installations

The revision of AS 2118 .1 *Automatic fire sprinkler systems—General systems* is progressing well.

### FP-009 Fire hydrant installations

FP-009 continues to work through the comments on the AS 2419.1 *Fire hydrant installations—System design, installation and commissioning* public comment draft.

### FP-011 Special hazards systems

Unfortunately, the project proposal for the revision of AS 14520 (which was to be produced as AS 4214) was not successful.

### FP-018 Fire safety

Project proposals for the revision of AS 1530.8.1 and AS 1530.8.2 *Testing of elements of construction for buildings to simulate bushfire attack* and for a new document 'Classification system for combustible facades' have all been approved.

### FP-019 Passive fire protection

The revision of AS 1905.1 *Components for the protection of openings in fire-resistant walls—Fire-resistant doorsets* is nearing public comment stage.

### FP-020 Construction in bushfire-prone areas

Standards Australia has approved a project proposal for the revision of AS 3959 *Construction of buildings in bushfire-prone areas*. A kick-off meeting for the project was held in late September.

### FP-022 Fire protection of mobile and transportable equipment

Standards Australia has approved the project proposal to amend AS 5062 *Fire protection for mobile and transportable equipment*.

### LG-007 Emergency lighting in buildings

LG-007 continues to revise the AS 2293 suite of standards for emergency escape lighting and exit signs.



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