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AUSTRALIA Fire



14



26



30

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In this issue

14 Fire Protection Accreditation Scheme—the road ahead

16 Chubb and FPAS—a partnership in professionalism

18 Crisis mapping and its use in disaster management

20 Defend or evacuate? “I’ll decide later”

24 Fire Australia Conference—The Journey to Professionalism

26 AFAC & Bushfire CRC Annual Conference

30 Risk is high this fire season

32 Aspirating smoke detection in industrial environments: Part 3

36 AIIMS-4 Intelligence Course

38 Justifying investments into the future

40 Carbon dioxide—a unique fire extinguishant

SPRING 2013

About Fire Australia

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

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

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

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Our cover: After two years of development, FPA Australia is now accepting applications for the new voluntary Fire Protection Accreditation Scheme (FPAS). Our cover features one of the first Chubb technicians to gain accreditation, Mr Stuart Logan.

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REGULAR FEATURES

- 5 In this edition
- 6 News
- 47 Blast from the past
- 48 Calendar of events
- 49 TAC & SIG update
- 50 Standards Australia update

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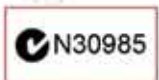
- 2 Pertronic
- 4 Fire Factory
- 9 FireSense
- 10 Archer Testing
- 13 Bulbeck
- 17 Fire Protection Technologies
- 23 Reliable
- 29 FLIR
- 34 Xtralis
- 37 Victoria University
- 41 Brooks
- 43 FPAS
- 45 Victaulic
- 46 Alan Wilson Insurance Brokers
- 51 Firebox
- 52 Viking





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Welcome to *Fire Australia* Spring 2013



By Stuart Ellis AM

Chief Executive Officer
Australasian Fire and Emergency Service
Authorities Council (AFAC)

2013 marks a significant milestone for AFAC, being 20 years since its inception after the Australian Assembly of Rural Fire Authorities (AARFA) and the Australian Assembly of Fire Authorities (AAFA) merged to become the Australasian Fire Authorities Council (AFAC) in 1993.

Today, AFAC has among its membership Australian and New Zealand fire, land management and emergency service agencies, and has close ties with disaster risk management organisations and fire and rescue services within the Pacific. While the acronym has remained the same, in 2006 the name changed to the *Australasian Fire and Emergency Service Authorities Council*. It truly is the peak body for fire and emergency services in Australasia, creating synergy across the industry.

This year the annual AFAC & Bushfire CRC conference, attended by nearly 2,000 industry personnel, not only celebrated AFAC's significant milestone, but also 10 years of the Bushfire Cooperative Research Centre. The Bushfire CRC was formed in 2003 through an Australian Government program to bring together researchers from universities, CSIRO and other government organisations to support the fire and emergency services industry. It also marked 10 years of the National Aerial Firefighting Centre (NAFC), formed by Australian government, states and territories in July 2003 to provide a cooperative national arrangement for combating bushfires.

The need for all aspects of the emergency services to work together collaboratively with our communities and partners from the education, health, business and research sectors and all levels of government to shape our future was the focus of this year's conference, themed *Shaping Tomorrow Together*. For 20 years AFAC has been collaborating on a range of important matters affecting our sector and providing advice to a wide range of stakeholders. Read more about the conference on page 26.

On the back of the conference, the Australasian Inter-Service Incident Management System (AIIMS)-4 Intelligence

course was held in Melbourne from 10 to 12 September. The course was designed to provide participants with an understanding of the Intelligence function within the AIIMS-4 framework, in order to enhance planning, operations and command decision-making. The course was very successful with 19 representatives from the fire and emergency services attending over the three days. I am also pleased to confirm that we will be launching an AIIMS aides-memoire web app in November. The app will be a mobile web application that contains all of the content found in the set of AIIMS aides-memoire and will be accessible on all mobile devices with an internet browser. Further information on the AIIMS-4 intelligence course and mobile web app can be found on page 36.

The AIPM Strategic Command Program was held in Manly, NSW, in mid-September. The program is a professional development opportunity that supports and prepares personnel in senior operational leadership positions at the region, zone or state levels when responding to major incidents. While the final Strategic Command Program has been run for the year, further courses are planned for 2014. Information on AFAC's training programs can be found on the website www.afac.com.au/research/training/program. ■

New CRC takes shape

As detailed in the Winter 2013 issue of *Fire Australia*, there is now a new Cooperative Research Centre, building on the work of the Bushfire CRC.

The Bushfire and Natural Hazards CRC began operations on 1 July 2013 and is off and running with a new chair and new branding.

Dr Laurie Hammond has accepted the appointment as Chair of the new CRC. Dr Hammond brings to the CRC a wealth of experience, having been a working scientist and director at a range of innovative research and development organisations in Australia and New Zealand. Dr Hammond will retain his role as Chair of the CRC for Mining, a position he has held since 2007. He is also Chair of the Australian Government's Commercialisation Australia Board and a member of the Innovation Australia Board.

Until July 2014 there will be two CRCs working in the interests of the community—the final stage under the Commonwealth Agreement of the Bushfire CRC and the start-up year of the Bushfire and Natural Hazards CRC.

Bushfire CRC Deputy CEO and Research Director Dr Richard Thornton has been busy establishing the foundations of the



bushfire&natural
HAZARDSCRC

new CRC in his capacity as interim CEO. Dr Thornton has now accepted a longer contract as CEO of the Bushfire and Natural Hazards CRC.

The new branding for the Bushfire and Natural Hazards CRC draws heavily on the colour and imagery of the fire, land management and emergency services sectors—the yellow triangle of the universal hazard sign, the orange of emergency services and the red of fire. The three-dimensional layers represent digging deeper into complex topics, representing the concepts of research and inquiry. A new website is now live with some basic content on what the CRC is all about. In the coming months there will be a bigger and more functional site—but for now you can visit www.bnhcrc.com.au.

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PHOTO: PHIL HOLT, ESM, VICSES



Members of second-placed South Barwon VicSES using the 'jaws of life'.



Heather Stuart (L) and Commissioner Murray Kear (R) of the NSW State Emergency Service accept their award from Steve Crutchfield (C) of Motorola Solutions.



Inspector Robyn Favelle from the NSW Rural Fire Service accepts her award from Steve Crutchfield of Motorola Solutions.

Excellence and innovation recognised at national conference

For the fourth consecutive year, AFAC, in partnership with Motorola Solutions, has awarded the AFAC & Motorola Knowledge Innovation Award.

Awarded in two categories, the NSW State Emergency Service was the recipient of this year's Agency award for the development of the Virtual Library Project. The virtual library has allowed the NSW State Emergency Service to share valuable knowledge consistently across its 10,000 members it has provided volunteers and staff with essential and unique access to knowledge that previously could not be delivered through traditional means.

More importantly, the implementation of the Virtual Library Project has formed the foundation of the NSW State Emergency Service's knowledge-sharing framework, which is crucial for the organisation and the industry. This work has the commitment of the NSW State Emergency Service and strong executive support across all levels of the organisation.

The second award winner in the Individual category was Inspector Robyn Favelle from the NSW Rural Fire Service. Inspector Favelle was recognised for her efforts in working with volunteer members of remote rural brigades in far western NSW. This included developing an operation response coordination system using social media sites, such as Facebook, to allow individual members of remote brigades to obtain critical fire-related information in a timely manner – something that has previously presented many difficulties for these brigades. Through the development of the communication system, the capability of the NSW Rural Fire Service has been enhanced significantly.

Steve Crutchfield, Managing Director of Motorola Solutions for Australia and New Zealand, presented both recipients with their awards during the welcome ceremony at the AFAC & Bushfire CRC Conference in Melbourne in September.

Sydney crew's top skills win road rescue challenge

High-pressure road crash rescue has to be about the greatest test of skill facing an emergency services crew that you will find anywhere. Although the real thing is not something anyone wishes to witness, Canberra hosted the Australasian Road Rescue Challenge (ARRO) in June, bringing together 16 teams from Australia, New Zealand, Singapore and Hong Kong to compete for the prestigious crash rescue and trauma challenge awards.

This year's overall champions, Fire and Rescue NSW Hurstville, took the Immediate Rescue and Entrapped Rescue events plus gained second place in the Controlled Rescue. It was judged Best Technical and Medical Team and Station Officer (SO) Clayton Allison was judged Best Team Leader. His team comprised Alan Rourke, Steven McDonnell, Tony Waller (City of Sydney), Matt Lynch and Letitia Harris (Wollongong). They will go on to next year's World Challenge in Scotland.

The challenge is not only about how quickly a team of six can get into a wrecked motor vehicle and retrieve a body. The team members all have

set tasks with specific skills for the very specialised and exacting equipment they must use. To those not used to watching some unusual and highly technical gear being deployed, and then hearing the ear-splitting explosion of the jaws-of-life doing its work, it is a strangely exciting spectacle. Experienced ARRO assessors look for departures from best practice in extrication technique, and they provide feedback to improve team performance for real on-road situations.

The imperative for team members to work steadily and calmly is proof that these operators—mainly Fire, SES and Ambulance Service crews, with the occasional mines rescue team—are well trained. It's teamwork to the nth degree, following a leader who must ensure best practice and efficient rescue processes are followed.

However, the event is more than just a competition. "We take away a lot of learnings and techniques from each challenge," said SO Allison. "We get the chance to work on new car technology and test the latest rescue equipment."

Some 70 late-model vehicles were supplied this year from Holden's Victorian

test facility. GM Holden is the only vehicle manufacturer that has been willing to contribute cars for the challenge, despite serious approaches by the ARRO organisers to several other car makers. Holden said the company also benefitted from the challenge, with outcomes shared and team comments about new vehicle safety efforts taken very seriously.

The Australasian Challenge, hosted this year by ACT Fire and Rescue, has been running for 17 years. Lardner Park, east of Melbourne, will be the 2014 challenge venue. *By Alastair Wilson FEMPA MAIES*

Rescue Challenge results

IMMEDIATE RESCUE

1st FRNSW Hurstville | **2nd** VicSES South Barwon | **3rd** Tasmania Fire Service

ENTRAPPED RESCUE

1st FRNSW Hurstville | **2nd** VicSES South Barwon | **3rd** NZ Fire Whitianga

CONTROLLED RESCUE

1st NZFS Whitianga | **2nd** FRNSW Hurstville | **3rd** NZFS Rolleston

TRAUMA CHALLENGE

1st FSTas | **2nd** FRACT | **3rd** CFA Werribee



Ebook first for fire safety

The Bushfire CRC has produced a free ebook for parents on how to talk to children about bushfire preparation and safety.

The ebook *Making a bushfire plan? Involve your kids!* is based on the PhD research of Briony Towers from RMIT University, which has been presented in many research and industry forums in recent years. The ebook is designed as an interactive PDF document that can be read on a computer or any tablet device. Download the ebook from the Bushfire CRC website by searching for 'ebook'.



Visits to non-authorised businesses update

As part of its ongoing compliance activities related to ozone depleting substances and synthetic greenhouse gases, field officers from the Fire Protection Industry (ODS & SGG) Board recently conducted site visits in NSW with a focus on compliance and education.

A total of 45 companies were visited in April, May and June 2013. The Executive Officer of the Fire Protection Industry (ODS & SGG) Board, Carlos Santin, said that the site visits were to raise the awareness of businesses and the technicians on the compliance requirements under the Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995.

"The general approach was to educate and help businesses comply with the regulations. Businesses should be aware that not complying with legislative requirements may result in financial penalties being imposed," Mr Santin said.

The site visits identified several companies that did not possess extinguishing agent trading authorisations even though they were purchasing and selling scheduled extinguishing agents. In some instances, the technicians employed by these companies did not hold the relevant extinguishing agent handling licences.

"At this stage, our efforts are focused on helping companies comply and the feedback we have received from the companies is very encouraging. Generally the board's Field Officer is welcomed and companies are keen to get things right," Mr Santin said.

Mr Santin also pointed out that the site visits are ongoing and checks of non-authorised businesses are continuing in 2013.

If you believe that an individual or business is operating illegally you can report this to the board by forwarding the information to the Executive Officer—Ozone Protection at ozone@fpaa.com.au or 03 8892 3131.

Tasmania adopts AS 1851-2012

Tasmania is leading the way by becoming the first Australian state or territory to formally adopt Australian Standard (AS) 1851-2012 *Routine service of fire protection systems and equipment*.

The adoption has occurred by way of an amendment to the Director of Building Control's Specified List.

In Tasmania, the Building Act 2000, and specifically Regulation 46 of the Building Regulations 2004, provides for the Director to prescribe certain matters including time periods and documents to be provided with applications. They are contained in the Director's Specified List. The newly amended list applies from 1 September 2013 and now references inspection, testing and frequency of fire protection systems and equipment to AS 1851-2012.

The new edition of AS 1851-2012 provides improved outcomes for building owners and delivers the level of fire protection and safety expected by the community.

The National Office and the Tasmanian State Divisional Committee of FPA Australia have worked closely with the Tasmanian Government and all related stakeholders to bring about this important change.

FPA Australia congratulates the Tasmanian Government on the strong leadership demonstrated by adopting this important standard.

For more information on the use and adoption of AS 1851-2012 nationally, FPA Australia members are encouraged to read the Association's newly released Good Practice Guide on the subject or contact the technical department at technical@fpaa.com.au.

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FPA Australia releases new Technical Documents

FPA Australia Technical Documents update

FPA Australia and its Technical Advisory Committees continue to develop Technical Documents to assist the fire protection industry. This update discusses documents that have been recently released and those in development to provide the industry with information, guidance and advice regarding technical requirements for fire protection systems and equipment.

Recently released FPA Australia Technical Documents

Since the last edition of *Fire Australia* (Winter 2013, p. 18), three more documents have been released.

Good Practice Guide (GPG-03) Adoption and use of AS 1851-2012

This is a members-only document, that provides a comprehensive guide to the reasons for adopting and using AS 1851-

2012 as well as detailed information on its application in each state and territory.

Information Bulletin (IB-05) Sprinkler system component fault monitoring

The bulletin highlights the importance of such monitoring to enhance effectiveness of sprinkler systems. It outlines requirements under the Building Code of Australia (BCA) and Australian Standards and provides recommendations for relevant stakeholders.

Position Statement (PS-04) National Licensing – Fire protection work under the plumbing and gasfitting occupations

The statement highlights FPA Australia's support for national licensing, outlines its benefits and emphasises the importance of not only requiring the relevant qualification but also the relevant competencies.

Summary of FPA Australia Technical Documents under development

Figure 1 provides an overview of the number of Technical Documents at each

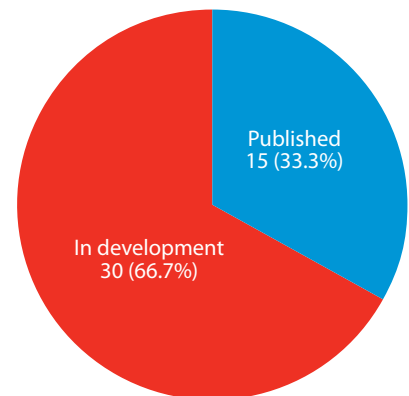


Figure 1 Total number of FPA Australia Technical Documents

Automatic Sprinkler Testing

- Testing of **Standard Response** Automatic Sprinkler Heads to AS1851-2005
- Testing of **Fast Response** Automatic Sprinkler Samples (Sprinklers with an RTI rating of 50 or less) to: AS1851-2005+ (ISO 6182-1)
- Testing of **Foam Concentrate** to NFPA 11A



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stage of development, from discussion through to publication. Figure 2 provides a quick overview of the total numbers of published Technical Documents and those in development.

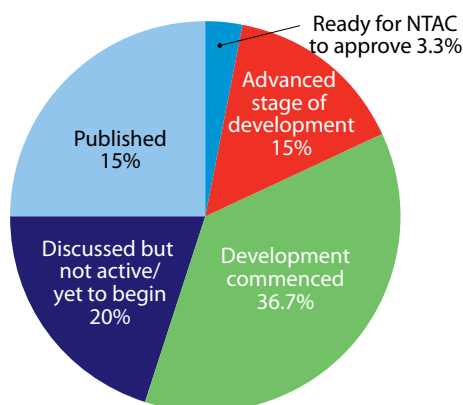


Figure 2 Status FPA Australia Technical Documents

FPA Australia Technical Documents nearing completion

Table 1 highlights some of the Technical Documents that are either ready for National Technical Advisory Committee approval or at an advanced stage of development (i.e. expected to be completed and released in the next six months).

To access FPA Australia's Technical Documents visit www.fpaa.com.au or connect.fpaa.com.au (for FPA Australia members). If you would like any further information or wish to propose a new Technical Document, please contact the Technical Department at technical@fpaa.com.au.

Table 1 FPA Australia Technical Documents nearing completion

Position Statements	Product compliance and evidence of suitability; Performance based design
Information Bulletins	Requirements and installation of evacuation diagrams
Technical Advisory Notes	Requirements for draught excluders in building constructed in bushfire-prone areas
Good Practice Guides	Annual Fire Safety Statements (NSW)
Reference Documents	Evidence of suitability – Options for fire safety product compliance

More research for Victoria

New research covering risk communications, the relationship between science and policy, the environmental and economic impact of fire and understanding how fire affects tourism will be investigated by the Bushfire CRC. This will be part of contract research undertaken for Victoria's Department of Environment and Primary Industries (DEPI).

These research projects are in addition to the contract research already underway into fire behaviour, fire weather, smoke emissions and fire ecology. The studies are targeted to DEPI's requirements, but will provide additional benefit to all Bushfire CRC partners.

Contract research at the Bushfire CRC includes the environmental impacts of fire, such as shown here at Lake Mountain.



New webcast released—new videos page

FPA Australia has recently released the second in its series of webcast videos. These webcasts are designed to provide members and other stakeholders with valuable information about the objectives and activities of the Association.

In the latest video, the Association's Chief Technical Officer and Deputy CEO Matthew Wright discusses FPA Australia's technical activities and

strategy. He outlines objectives and capacity, structure and stakeholders, the Technical Advisory Groups (TACs) and Special Interest Groups (SIGs), Australian legislative and regulatory frameworks and more.

All videos and webcasts created by FPA Australia can now be easily accessed from the videos page of the website www.fpaa.com.au/news/videos.





The innovative concept design vehicles have undergone rigorous testing over the past four months.

Concept firefighting vehicles

AFAC's Fleet Technical Group met in June to review and test-drive the Victorian Department of Environment and Primary Industries' (DEPI's) fleet of concept firefighting vehicles.

The firefighting vehicles are the latest additions to Victoria's arsenal for fighting bushfires and carrying out planned burns. They showcase new technology for water pumping and firefighter safety.

DEPI Project Manager Hanut Dodd said the concept vehicles had nearly finished a four-month tour around the state where local crews have tested them out in bushfires, planned burns and general works.

"The new equipment fitted to the vehicles has definitely proved its worth. The vehicles were called in to help at the Grampians bushfire earlier this year with both asset protection and to fight the fire burning in the national park," Mr Dodd said.

"One of the key improvements that stood out was the high pressure, low water-use hose, which allowed crews to black-out three times the area with one tank of water the previous designs enabled."

Members were looking at the vehicles and testing them practically to see how they might be able to use the technology.

The fleet of concept vehicles is made up of various designs for single cab and dual cab chassis and light, ultralight and heavy tankers.

"Some of the other improvements that have been incorporated into the concept vehicles include innovative emergency light systems, easier to use hose reels [and] GPS mapping and tracking," Mr Dodd said.

"Ergonomics and how different colours can be used to enhance crew safety in low visibility situations also figured heavily in the development of the vehicles.

"The testing around the state that we have been running has been really valuable in fine-tuning the designs. We need to make sure these vehicles we have developed can go where our firefighters need them to, which is in some of the most fire-prone bush and forests in the world."

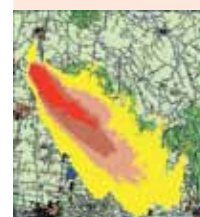
The day was very well attended by the various agency members, who found it to be extremely valuable. The information gathered will assist members to identify new-generation vehicles and equipment for the future.

Fire Decision Support Tool—what does it do?

A short new video on the Bushfire CRC website highlights the exciting developments made by the 'Fire Decision Support Tool' (DST) proof of concept software, and how it builds on existing fire mapping products. The four-minute video aims to explain Fire DST and what the proof of concept has achieved.

Fire DST uses Phoenix RapidFire modelling software to create a much more advanced fire-modelling program. Fire DST can incorporate changes to humidity, temperature, wind speed and direction that might occur, showing the probability of the fire affecting specific areas, taking into account these variable factors. Fire DST helps predict the spread of a bushfire and the uncertainty in its location and consequences.

Developed as part of the Bushfire CRC Risk Assessment and Decision Making project, Fire DST will provide fire agencies with valuable new information into the future. Search for 'Fire DST' on the Bushfire CRC website to watch the video.



Fire DST software shows fire managers the likelihood that a bushfire will spread to specific locations. Different colours represent different probabilities. The 2009 Kilmore East fire is shown.

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Fire Protection Accreditation Scheme—the road ahead

Accreditation classes and categories, business recognition information, training and important terminology for FPAS were outlined in *Fire Australia* Autumn 2013. This final article lays out the steps ahead.

By Joseph Keller,
Communications
Manager, FPA Australia

On 1 July 2013, Fire Protection Association Australia (FPA Australia) began accepting applications into its landmark voluntary Fire Protection Accreditation Scheme (FPAS).

Almost two years in development, FPAS now provides formal, nationally harmonised recognition of the skills and competencies of appropriately trained technicians who inspect and test fire protection systems and equipment and the businesses that support them. More accreditation types beyond 'Inspect & Test' will come onstream from 2014.

In Voluntary National Accreditation Part 1 (*Fire Australia Spring 2012*, p. 14), we addressed the foundations and goals of the scheme, while Part 2 (*Fire Australia Autumn 2013*, p. 14) outlined significant detail about the scheme's structure and requirements. This final instalment, Part 3, considers the achievements of the scheme so far, highlights some of the work being undertaken at FPA Australia in support of FPAS and looks to the future of the scheme.

Recent scheme milestones

Since applications opened in July, FPA Australia has been overwhelmed by the response from the fire protection community. Many technicians were particularly keen to gain accreditation, as these individuals had undertaken significant training but had very few opportunities to have their skills recognised—until now.

One of those individuals was Mr Andrew Hobson of Fire Rating Solutions in Melbourne—the first technician in Australia to submit an application for individual Qualified Accreditation.

In August, Mr Hobson was presented with his official accreditation card and pack by FPA Australia CEO Scott Williams at the Association's National Office in Melbourne.

Mr Hobson said he expected his accreditation to benefit both his employer and his clients.

"It's great for me that there is now a simple way for clients and other industry professionals to recognise the training I've undertaken and the skills I have," he said.

"FPAS clearly highlights properly trained people doing fire protection work, helping clients make an informed choice."

Mr Williams said Andrew should be very proud of his achievement. "On behalf of the whole Association I sincerely congratulate Andrew on his commitment to the scheme and to his own continuing professional development," Mr Williams said.

"Andrew is thoroughly deserving of both his Qualified Accreditation status and also the title of first FPAS accredited technician in the country.

"His leadership sets a great example for other technicians to follow and I thank Andrew for his strong support of the scheme."

Mr Hobson's application was the first of hundreds of individual submissions that have now been received. Based on the level of interest so far, FPA Australia expects to have 1,000 technicians accredited across the country within the first year of the scheme's operation.

The first business to apply for recognised status was Chubb Fire & Security Pty Ltd (Chubb). As part of its application, Chubb has committed to ensuring its technicians are accredited nationwide by the end of the 2013.

As an industry leader, Chubb's commitment to the scheme sends a strong message to other fire protection businesses on the importance of voluntary professional recognition. You can read more about the Chubb-FPAS partnership on page 16 of this issue.

As well as Chubb, many other business recognition applications have been received. Based on current application levels, the Association expects to have 100 businesses recognised within the first year of the scheme.

Committed to professionalism—investing in FPAS

The implementation of FPAS represents a significant milestone for the fire protection industry in Australia.

As previously discussed, until now there has been a very limited framework to validate the competency of individuals working on lifesaving fire protection systems and equipment across the country, posing a significant risk to community safety.

The Board of Directors of FPA Australia understands this, and views FPAS as vital for the future of the Australian fire protection industry. As such, the Board has allocated significant investment, both financially and through existing Association resources, to ensure the success of FPAS.

This investment includes the creation of a dedicated department within the Association's National Office, called 'Accreditation & Licensing', which is now handling all FPAS-related activity. New staff members have been hired specifically to work in this area.

Additionally, substantial funding has been allocated to upgrade existing information technology and database management systems in order to professionally manage and administer the scheme.

This work will allow integrated billing and renewal tracking of all members with Business Recognition and their accredited fire protection technicians, as well as all individual fire protection technicians accredited under FPAS.

Recognised businesses will be listed on FPA Australia's website and promoted over non-recognised businesses. In addition, all individuals with FPAS accreditation will be listed on the website for consumers and industry stakeholders to easily validate an individual's accreditation status.

Significant communications, marketing and promotional activity, including media releases and advertising in many industry publications, is already increasing awareness of FPAS among fire protection industry stakeholders and the public.

These marketing materials encourage all users who require inspection and testing of fire protection measures to ensure they only engage FPAS-accredited technicians wherever possible.

All of the important work outlined above is being directly funded by fees associated with FPAS applications. The Association is reinvesting all funds generated by the scheme back into supporting it, ensuring FPAS is backed up by robust systems and infrastructure.

Thanks to this hard work and investment in support of the scheme, it is expected that, with time, FPAS will become as widely recognised as any successful accreditation or licensing scheme in the Australian building and construction sector today.

Looking ahead—the future of FPAS

Because FPAS encourages customers to only use trained, competent technicians in maintaining essential fire protection systems and equipment in Australia, it has received strong support from government and industry.

To date, FPA Australia has conducted valuable discussions with representatives from each state and territory government, and many related industry bodies.

As a result of these discussions, FPA Australia has already received positive indications from some state and territory regulators that they intend to support FPAS through future regulatory inclusion. This may lead to the mandatory adoption of FPAS for technicians in some jurisdictions.

Until then, Mr Williams said the message for end users of fire protection products and services was clear.

“Be sure to only choose an FPAS Recognised Business employing properly accredited technicians wherever possible,” he said.

“If an FPAS Recognised Business or Accredited Technician is not yet available in your local area, make sure the business you select is, at a minimum, an FPA Australia Code-of-Practice compliant member company.”

Thanks to the strength and rigour of FPAS, customers can now confidently select individuals who are properly trained, skilled and competent over those who are not.

Ensuring that only these competent technicians are engaged to maintain essential fire protection systems and equipment in Australia will go a long way to professionalising the industry as it matures further and will guarantee the highest possible standards of fire safety for the community, now and into the future. ■

More information about the Fire Protection Accreditation Scheme (FPAS), including application forms and fact sheets, can be found at www.fpa.com.au/fpas.



Scott Williams, FPA Australia CEO (L) and Andrew Hobson, the first technician in Australia to submit an application for individual Qualified Accreditation.



- CHUBB—leading the industry as the first company to take up FPAS Recognised Business status
- ALL of Chubb’s technicians to be FPAS accredited by the end of 2013
- 1,000 technicians expected to be FPAS-accredited within the first 12 months
- 100 businesses expected to achieve FPAS Recognised Business status within the first 12 months
- ALL FUNDS derived from application fees are reinvested into the scheme
- STRONG SUPPORT from government regulators and industry bodies around Australia, including indications of future regulatory adoption



Chubb and FPAS—a partnership in professionalism

Chubb is the first company to receive business recognition under FPAS, demonstrating Chubb's commitment to the scheme.

By Joseph Keller,
Communications
Manager, FPA
Australia

Chubb Fire & Security Pty Ltd (Chubb) has committed to the new Fire Protection Accreditation Scheme (FPAS).

The company, which is a Corporate Platinum member of FPA Australia, has achieved business recognition under the scheme, and has committed to transitioning its many technicians to accredited status by the end of 2013.

As of October 2013, Chubb had already submitted applications for a significant percentage of its technicians, with the rest to follow.

Scott Williams, CEO of FPA Australia, said the announcement from Chubb represented a significant vote of confidence in the scheme and its goal of setting minimum competency benchmarks in the industry.

“By committing to FPAS, Chubb has signalled it is an industry leader that is dedicated to ensuring the professionalism and ongoing education of its workforce,” he said.

“I want to formally acknowledge Chubb for the strong leadership it is demonstrating by supporting the scheme in such a wholehearted way.

“In doing so, Chubb has created a competitive advantage for the business, has set the best possible example to the industry, and most importantly, is helping to deliver better fire safety outcomes for the community.”

Dave Marven, Managing Director of Chubb, said the commitment to FPAS was consistent with Chubb's values of responsibility, employee development and customer care.

“FPAS helps to further set us apart as leaders in the industry while ensuring the highest professional standards of technicians within our business,” Mr Marven said.

“While this is a voluntary accreditation scheme, Chubb supports raising standards in the fire

protection industry in servicing essential fire life safety equipment. We are very proud to provide leadership in the industry and to provide industry recognised and certified training to our technicians.

“We also anticipate that large customers, particularly within the government sector, will want to see their fire service providers and technicians accredited under the scheme.

“This is already being shown by early feedback, which is indicating that large customers are very encouraged that Chubb is an early adopter of FPAS.

“Based on this feedback, Chubb expects that large customers will soon begin to include FPAS accreditation as a requirement in their tender requests, and we see this as a positive step for industry professionalism and community safety.

“As an organisation we are very proud to be the first large fire protection company to announce its commitment to the scheme and the first company overall to apply for business recognition status under the scheme,” Mr Marven said.

As part of the commitment by Chubb to FPAS, FPA Australia recently undertook a professional photo shoot at Chubb's training facility in Dingley, Melbourne, featuring some of the company's newly accredited technicians.

Many of these images are included in this issue of *Fire Australia* and will also be featured in upcoming FPAS promotional and marketing materials.

The Association would like to thank each of the Chubb technicians—Mr Stuart Logan, Mr Michael Strachan, Mr Adam Flannagan and Mr Michael Anderson—for volunteering their time in support of FPAS. FPA Australia also congratulates these technicians on successfully achieving FPAS-accredited status.

Mr Williams said every Chubb employee should be proud of the company's commitment to professionalism.

“In taking this step, Chubb has indicated to staff and customers that it is at the forefront of driving positive change, both for the fire protection industry in Australia and for the safety of our community,” Mr Williams said.

“On behalf of the Association I sincerely thank and congratulate Chubb for their strong leadership.” ■

(Left–right) Mr Michael Strachan, Mr Michael Anderson, Mr Adam Flannagan and Mr Stuart Logan are among the first Chubb technicians in Australia to achieve FPAS accreditation.



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Crisis mapping and its use in disaster management

Imagine the chaotic scene in the wake of a disaster. Then imagine an online map with crucial real-time information, reflecting exactly what is happening, what is most needed and precisely where.

By Barry Gray, Acting Assistant Chief Fire Officer, Metropolitan Fire and Emergency Services Board, Victoria

The widespread uptake and use of mobile technology, social networking and the collaborative technologies that characterise web 2.0 have enabled decentralised and participatory forms of crisis and emergency management to emerge in response to conflicts and natural disasters. On the timeline of the internet's evolution, the 2010 Haiti earthquake response will be remembered as the moment when access to mobile and online communication enabled a 'collective intelligence' to emerge—when thousands of citizens around the world collaborated in volunteer and technical communities to help make sense of a large-scale calamity and give voice to an affected population.

A social phenomenon that occurs with nearly every disaster is the convergence of people, information and materials into the geographical region of disaster. In 2013 this is no longer limited by geographical space as people converge via the internet to seek and provide information. Technologies have changed the speed with which people and information can converge, and the distance from which people can participate. The influence of media on our lives and the expanding array of new communications tools, mobile devices and internet platforms that provide ready access to social media portals such as Twitter, YouTube, Flickr, Facebook, blogs and emails are providing citizens with pathways to share information.

A component of this citizen-driven global technological response is crisis mapping. Crisis mapping is where scholars, practitioners, volunteers and communities alike work together to create, analyse, visualise and use real-time data for humanitarian

response and post-conflict reconstruction and development. Following the 2010 Haiti earthquake, Ushahidi, a non-profit tech company specialising in developing free and open-source software for information collection and interactive mapping, launched a crisis map that visualised real-time reports and information generated by the affected community (by SMS/text and the internet) about damage, requests for assistance and the establishment of relief centres. Crisis mapping is being promoted as a new development at the nexus of geographic practices and humanitarianism. It uses various geospatial and new information communication technologies (ICTs) to power effective early warnings or rapid responses to complex humanitarian emergencies.

Crisis mapping—what is it, and what is it not?

Using maps in humanitarian responses is not new. The shift with the application of new technologies is towards live mapping, which enables geographic reference points, events, needs and stories to be presented on a map. Free open-source platforms developed for crisis mapping (e.g. Ushahidi and Sahana) enable collective intelligence to be mapped from the field through humanitarian reports or citizen journalism. The platforms allow information to be disseminated to a broad array of stakeholders and interested persons. By fusing data from disparate sources during the response to the 2010 Haiti earthquake, Ushahidi developed crisis maps (below left) to aid civilians in harm's way and policy/decision-makers several time zones removed from the chaos.

Since the application of crisis mapping for the Haiti response, the term 'crisis mapping' has been used as a catch-all for a diverse set of processes, methodologies and products. A recent example is the Satellite Sentinel Project, where crisis mappers (groups of people) are implicitly linked with crowdsourcing (a methodology), using only the Ushahidi platform (a tool). This association of thoughts with crowdsourcing, crisis mapping and the Ushahidi platform is common; however, it is often misleading.

Crisis mapping as a tool

In 2007–2008, crisis mapping was used to track post-election violence in Kenya; however, the 2010 earthquake in Haiti demonstrated the broader utility of crisis mapping and drew the attention of government and non-government response agencies. Within four days of the earthquake, a crisis map was launched

Crisis map of the 2010 Haiti earthquake, using Ushahidi. Information gathered from reports coming from within Haiti by SMS, web, email, radio, phone, Twitter, Facebook, television, live streams and situation reports was mapped in near real-time.



PHOTO: MEIER'

using the Ushahidi platform. As a testimony to its effectiveness, many reports quote anecdotal examples of calls for assistance that were received and responded to. While several other examples of crisis mapping have emerged, the Ushahidi example is a useful illustration of its ability to collect and disseminate user-generated data much more quickly and directly between citizens and relief workers than the customary assessments of traditional humanitarian entities.

As the process of crisis mapping continues to develop the institutions involved also continue to mature. Platforms such as Ushahidi, Sahana and OpenStreetMap are becoming formalised and more prominent on the humanitarian world stage. Other organisations are also establishing formal support. These include the Standby Task Force (SBTF), which has been launched by the organisation Crisis Mappers. SBTF enlists volunteer GIS mappers to assist crisis-mapping efforts from remote locations via the internet.

A demonstration of the developing links between formal organisations and crisis mapping organisations is the recent example of crisis mapping for Libya. Led by the United Nations Office for the Coordination of Humanitarian Affairs Information Management Unit in Geneva, SBTF was engaged to assist during the peak of the 2011 Libyan political crisis. The global trend in crisis mapping is shifting from involving only volunteer participants, to increasingly towards establishing and including institutions with formal connections to governments and global non-government aid agencies.

Crisis mapping in Australia

To date, few examples suggest that those responsible for front-line emergency response in Australia have adapted to online free open-source software and its capacity to affect the management of disaster or its ability to aid in gaining situational awareness.

From December 2010 to February 2011, Queensland experienced floods that resulted in billions of dollars in damage and the loss of 20 lives. As the multiple flood events unfolded, social media and crowd-sourced geographic information played an important role in keeping people informed.

After the collapse of the Brisbane City Council's website during the flood response, a crisis map that has been described as a dynamic web-based mapping solution was established. Its intent was to enable response agencies to provide up-to-date information and develop a common operating picture. Known as the Brisbane City Council (BCC) Flood Map, the system compiled flood data from across Brisbane—such as flood peaks, road closures and evacuation centre locations—into a map to provide a comprehensive, real-time picture of the flood.

Parallel to the establishment of the BCC crisis map, the ABC established the Queensland Flood Crisis Map (above right). The map was built on the Ushahidi platform and could collect and aggregate information from mobile phones, email and the internet, then create a visual representation on a map with a timeline. The use of social media enabled the public to contribute to disseminating information for which

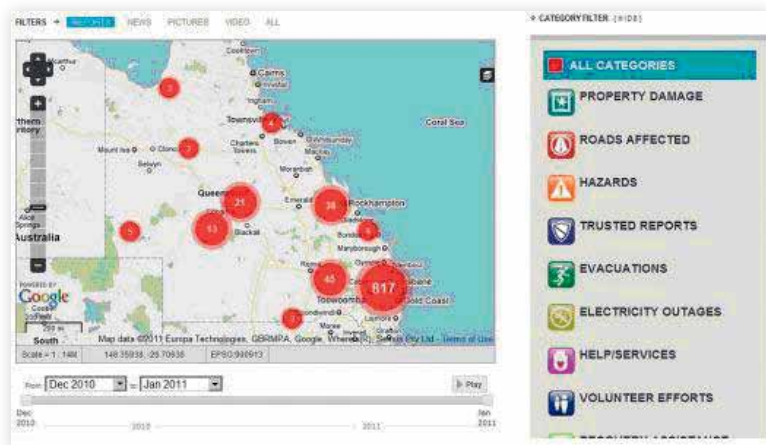


PHOTO: ABC

The ABC's Queensland flood crisis map, using the Ushahidi platform.

the benefits were immediate and obvious. In addition to the direct benefit to the public as an information source, the emergency response agencies identified the power of the information being generated and established channels to support and build their communication and information collection through this medium.

Challenges for crisis mapping

Currently, crisis mapping is complex, involving multiple participants with varying capabilities. The emerging norm of people to communicate directly from the impact zone to the outside world makes them complicit actors who add a further dimension to an already overwhelming scenario. The duality of this situation is that this same set of circumstances also presents solutions to dealing with the complexity. The speed at which information is gathered, aggregated, analysed and transmitted is challenging the capacity of response and humanitarian agencies in their ability to access and incorporate the flood of information from these new non-traditional information sources.

The future of crisis mapping is challenging, both for the formal emergency response and humanitarian systems, and for the informally structured volunteer communities that provide invaluable contributions. More than simply lacking an accepted doctrine or code of ethics, a body has not been designated to convene or coordinate the community of crisis mappers with the intent of developing agreed standards or consensus. If the crisis mapping community does not develop shared ethical standards or responsible practices, it will lose the trust of the populations that it seeks to serve and the policy-makers that it seeks to influence. ■

To read the article with references go to www.afac.com.au/research/newsdetails/2013/10/11/crisis-mapping-disaster-management

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Defend or evacuate?

“I’ll decide later”



It is a critical choice that could have devastating repercussions for residents in bushfire-prone areas. Yet it’s a decision that many will delay until the day of a fire. Why do residents delay their decision to defend or evacuate, and what can be done to help them make more timely, appropriate choices?

Research shows that residents need triggers to take different actions under a variety of conditions.

By Kay Ansell

Bushfire CRC-sponsored research is, for the first time, providing empirical evidence that helps explain the mysterious human behaviour of delayed decision-making. The results will be used to develop effective strategies to support households in preparing bushfire contingency plans.

The study’s findings have uncovered reasoning that could be regarded as counter-intuitive, challenging assumptions about why residents delay a decision that would be more safely resolved ahead of the fire event.

Dr Ilona (Illy) McNeill from the University of Western Australia’s School of Psychology was the lead researcher in the study. Conducted as part of the Information Processing Under Stress: Community Reactions project the team also included Dr Patrick Dunlop (University of Western Australia), Professor David Morrison (Murdoch University) and Professor Timothy Skinner (Charles Darwin University). The results are due to be published in the *International Journal of Wildland Fire*.

Dr McNeill pointed out that bushfires could cause substantial losses, as measured in economic and social terms and in human casualties, as evidenced by the 2009 Black Saturday bushfires in which 173 people died.

She also said that, before each bushfire season, Australian fire agencies encouraged residents of fire-prone areas to decide whether they would defend or evacuate, and to properly prepare for their intended response. “However, when residents are asked how they will respond to a bushfire, many say they’ll wait until the day of the fire to decide.”

Research into decision delay

“This decision delay causes big problems for several reasons,” she said. “We know from earlier research that people who delay this decision tend to carry out fewer preparations for both defending and evacuating, compared to people who have decided on one of these concrete actions.

“We also know that ‘decision delayers’ will need to spend more time deciding what to do during the fire. This may then lead to late evacuation, with all the increased risk that entails. And the duress of the situation increases the likelihood of making poor-quality decisions.”

Given this knowledge, why do so many people delay choosing between what appear to be two clear fire responses?

The researchers looked beyond the subjective nature of previous research to find the answers. “While past research has provided some insights into people’s actions during a fire, we examined what influences people in their response decisions before the fire event,” Dr McNeill said.

“As well, the limited research that has been done has generally relied on participants’ subjective accounts of their decisions, rather than empirical evaluations.

“People can rationalise their decisions afterwards but research has shown they are not always equally capable of determining what actually influenced their decisions.”

An example of this was “a desire for more



information” that many people cited as being the main reason for their delay. Dr McNeill was sceptical about this. “It’s complex. Past research on decision avoidance has found that information requests are often a symptom of decision delay rather than an actual cause of it. Pinpointing the actual causes of delay is important because different causes beg for different strategies to reduce it,” she said.

Resident surveys

To gather empirical evidence, the project’s researchers developed a survey that they distributed to residents of bushfire-prone areas around Western Australia across the 2011–2012 fire season. The participating communities were based at and around Brigadoon, Roleystone, Bunbury, Gelorup, Gidgegannup and Stratham. The survey measured both the anticipated fire response of residents and the plausible causes of decision delay. These plausible causes were derived from social psychology literature on decision avoidance. Surveys were distributed to residents on two occasions: the first in October 2011 (as the bushfire season started) and the second in March 2012 (as the bushfire season ended).

The October 2011 survey was sent to 1,700 households, resulting in 350 completed responses—a 20% response rate. The March 2012 survey measured behavioural change and was therefore only distributed to the 350 households that completed the initial survey. The researchers received 189 usable responses—an excellent response rate of 54%.

The October 2011 survey measured several plausible causes of decision delay. Two were personality factors: general indecisiveness and ‘need for cognition’. Need for cognition has been defined as ‘the tendency of an individual to engage in and enjoy thinking’. The survey also measured the lack of perceived relevance of the decision (i.e. low risk-perception), and ‘decision difficulty’ due to a lack of difference in attractiveness between the option of defending a house or evacuating. To gauge this decision difficulty, researchers measured how much value people expected to derive from defending their house compared with evacuating early.

The March 2012 survey measured another plausible cause of indecision—the avoidance of responsibility

for bad outcomes. It asked respondents who would be responsible for saving their house and their lives during a fire: the government, themselves or a mix of both.

The respondents’ intended response to a bushfire was measured both before and after the bushfire season. The overwhelming majority of the survey respondents indicated they would delay their decision of whether to defend or evacuate and the rate was highly consistent: 68.1% in October 2011 and 67.2% in March 2012.

Across the two survey periods, about 23% expected they would defend their property throughout the fire, and about 6% expected to leave as soon as they knew there was a fire threatening their town or suburb. Less than 1% would not be at home because they would leave their property on days of extreme and catastrophic fire danger. Less than 2% ticked the ‘other’ box—these were all volunteer firefighters who would be out fighting any fire.

The most important finding was that decision difficulty as measured by the relative attractiveness

The research measured residents responses both before and after the bushfire season. In both cases, the overwhelming majority of respondents indicated they would delay their decision.

An overwhelming majority of the study respondents indicated they would delay their decision of whether to defend or evacuate until a fire occurred.



Residents were not likely to delay making a decision on their action due to a lack of risk awareness or avoiding responsibility.



PHOTO: CREDIT DEPARTMENT OF FIRE AND EMERGENCY SERVICES WESTERN AUSTRALIA.

of defending or evacuating was the only significant predictor of why people delayed deciding on their action in response to a fire threat.

“If defending held significantly higher perceived value to the householder than evacuating, then they were more likely to anticipate defending,” Dr McNeill said.

“If defending held significantly lower perceived value to the householder than evacuating, then they were more likely to anticipate evacuating. However, when they perceived defending and evacuating as being equally valuable, then they were very likely to delay their decision until the time of an actual fire threat.

“People were not more likely to delay this decision because they lacked risk awareness,” Dr McNeill said. “Nor were they more likely to delay in order to avoid responsibility. And measured differences in personality did not play a role in the decision delay.

“Our study showed that householders who delay their decision are not avoiding the reality of bushfire threat. It is the extreme difficulty of making the decision itself—whether to defend or evacuate—that causes their paralysing indecision.”

“Our study showed that householders who delay their decision are not avoiding the reality of bushfire threat. It is the extreme difficulty of making the decision itself—whether to defend or evacuate—that causes their paralysing indecision.” DR ILLY MCNEILL

End users of the research

Damien Killalea is Director of Community Fire Safety at the Tasmania Fire Service and the study’s lead end user. “I see this research as valuable to agencies that are responsible for minimising risk to people in bushfire-prone areas because it offers more detailed insights than we’ve had before into the reasons why residents are not making decisions,” he said.

“It’s going to help us to reshape our messages in order to reach this large group who are failing to respond appropriately when bushfires threaten,” Mr Killalea said.

He saw the research results as potentially applicable Australia-wide, and possibly even for other natural disaster scenarios where decision delay might cause risk to safety, such as floods.

The researchers concluded that the most important solution to decision delay was to have brigades advise residents on how to identify appropriate decision triggers and therefore appropriate actions to take under a variety of conditions.

Mr Killalea said these triggers might vary from person to person. “For some, the trigger may be a predicted fire danger rating, such as a warning of extreme fire danger. For others, the decision trigger might be a fire actually breaking out within, say, five kilometres of their home when the fire danger rating is ‘severe’, 10 kilometres if it’s ‘extreme’, and 20 kilometres if it’s ‘catastrophic’ or ‘code red.’”

The appropriate actions would vary according to the intensity of the fire and the time until impact, he said. “However, all fire agencies in Australia urge people to leave their homes if there is a fire burning in the vicinity and the conditions are catastrophic.”

Mr Killalea could envisage the research findings being incorporated into a kit for householders to help them identify triggers, the appropriate actions to take and to avoid decision delay. “It could be quite helpful in our efforts to have people in bushfire-prone areas make a decision about what to do ahead of time.

“It will encourage them to identify a trigger, a tipping point for action—because the research is telling us that most people don’t do that until it’s way too late.” ■

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Fire Australia conference— The Journey to Professionalism

The Fire Australia 2013 Conference and Exhibition, to be held on 20–21 November at the Sydney Convention and Exhibition Centre, will be a landmark event for the fire protection industry in Australia, with a strong focus on professional recognition and the future of the industry.

The fire protection industry is evolving. Not simply in the development of new technology and practices, but in the level of professionalism of those employed to design, approve, certify, install, maintain and update life-saving systems and equipment.

In an age of risk and accountability it is imperative that standards are met by the equipment being installed, and equally by those individuals conducting the work.

The Fire Australia 2013 conference

theme *The Journey to Professionalism* addresses the growing need for industry personnel to gain professional recognition of their abilities and explores the various means for achieving competence as a basis for career development.

In addition, the 2013 event will feature a string of innovations to keep the conference and exhibition fresh and relevant, including a targeted two-stream conference format.

Conference

The 2013 conference sees some significant innovations introduced into its structure. For the first time ever, Fire Australia 2013 will feature two different presentation streams. This will provide highly relevant content for policy-makers, fire engineers and non-government organisations as part of the 'strategic' stream; while relevant practical and technical guidance for technicians, contractors and tradespeople will be provided within the 'technical' stream. Visit the Fire Australia website at www.fireaustralia.com.au to learn more about the content within each stream.

The Journey to Professionalism theme highlights the growing need for recognition of skilled and qualified people operating within the fire protection industry. The extensive program of keynote speakers at Fire Australia 2013 will address the need for industry recognition through several topical presentations and will be supported by some international approaches on professional recognition from well-known international subject matter experts:

- ▶ **Deen Sanders**—CEO, Office of the Professional Standards Councils—'The recognition of professional standards in a competitive market'
- ▶ **Wilhelm Harnish**—CEO, Master Builders Australia—'The evolution of a highly recognised accreditation scheme and organisation'
- ▶ **Lindsay Walker**—Director Regulatory Reform, Building Codes Queensland—'The government perspective of recognition schemes'
- ▶ **Chris Summers**—Managing Director, Chris Sommers & Associates—'How to maintain and develop a comprehensive accreditation scheme'.

In addition, Fire Australia 2013 will feature notable presentations from international speakers on the conference theme:

- ▶ **Don Bliss**—Vice President, Field Operation, NFPA (USA)—'The US perspective on accreditation in the fire protection industry'
- ▶ **Debbie Scott**—Principal Fire Engineer, Onfire Consulting (NZ)—and **Nick Saunders**—Senior Adviser, Building Standards, Ministry of Business, Innovation & Employment (NZ)—'New Zealand's quantum leap in fire engineering—increasing the professionalism'.

This year's keynotes and international speakers represent some of the foremost experts in the world on their subjects and the conference organisers expect these sessions to be particularly well attended.

Fire Code Reform Centre Forum

A highlight of the Fire Australia 2013 program will be a dedicated forum on the Fire Code Reform Centre. The discussion will address a brief history of the centre, its achievements and goals, and look to the future. The panel will be open for questions following the main discussion forum.

The forum will feature a host of knowledgeable and highly respected industry professionals:

- ▶ **Stephen Grubits**—Managing Director, Stephen Grubits and Associates
- ▶ **Ian Thomas**—Industry Consultant
- ▶ **Hamish MacLennan**—Director, HolmesFire
- ▶ **John Clampett**—Director, JC Consulting
- ▶ **Jose Torero**—Head, School of Civil Engineering, University of Queensland
- ▶ **Marianne Foley**—Principal, Arup
- ▶ **Brian Ashe**—Director, Major Projects and Research, ABCB
- ▶ **Greg Buckley**—Assistant Director, Built Environment, FRNSW
- ▶ **David Barber**—Fire Group Leader, Arup
- ▶ **Paul Bailey**—Associate, CH Group.



Showcase Theatre

Adding to the string of innovations at Fire Australia 2013, the all-new 'Showcase Theatre' will be a dedicated space within the exhibition hall that features a program of free presentations to all trade show attendees, conference delegates and exhibition staff.

Topics and speakers will be drawn from the exhibitors and sponsors of Fire Australia and will showcase the latest technologies, products and services on display in the exhibition hall.

A full program of presentations within the Showcase Theatre will be available on the Fire Australia website before the conference and in the booklet at the event.

Conference dinner

This popular night of networking and fun returns in 2013. The dinner is the perfect opportunity to relax and enjoy time with your industry colleagues and friends with some entertainment thrown in. The night will include a sumptuous three-course meal and a presentation by guest speaker Steven Bradbury, speed skating gold medallist at the 2002 Salt Lake Winter Olympics. Steven's amazing and engaging story has seen him become one of Australia's best known public speakers and is sure to be a highlight of the conference dinner.

The evening will also feature a live jazz ensemble and the opportunity to support the wonderful work of the Westmead Children's Hospital Burns Unit by direct donation and a raffle.

Tables of 10 can be reserved and will receive preferred positioning within the ballroom. In addition, tickets to the conference dinner can be purchased separately—attendance at the conference and exhibition is not required in order to attend the dinner.

For more information and to register for the conference dinner contact the FPA Australia events team at events@fpaa.com.au.

Sydney Convention and Exhibition Centre Parkside Ballroom (Level 1)

Wednesday 20 November 2013; 6.30 pm for 7.00 pm

Cost: \$150 per person (included with full conference registration)



Who should attend?

The Fire Australia conference attracts attendees from all around Australia, New Zealand and the Asia-Pacific region. The contemporary conference format and highly relevant content will ensure industry issues are professionally presented. As such, a strong attendance of industry professionals is expected, including:

- fire protection consultants, engineers and technicians
- fire service personnel
- 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
- environmental engineers and sustainability managers.

For more information about everything at Fire Australia 2013, visit the conference website at www.fireaustralia.com.au. Alternatively, contact an Events team member by calling 1300 731 922 or email events@fpaa.com.au.

Venue and location

As Australia's leading business events venue, the Sydney Convention and Exhibition Centre is superbly located on the Darling Harbour waterfront.

The Centre comprises three major buildings: Convention Centre Parkside, the Exhibition Centre and Convention Centre Bayside, where Fire Australia 2013 will be housed.

A thriving precinct on the edge of Sydney's central business district, Darling Harbour is home to some of Australia's most significant tourist attractions and myriad restaurants and shops, all attuned to the interests and needs of conference delegates and visitors.

As Australia's largest and most vibrant city, Sydney combines a bustling CBD with beautiful scenery and exciting cultural experiences, enticing countless visitors to its shores, time and time again, for a taste of that special 'Sydney-something'.



Exhibition

One of the permanent highlights of Fire Australia is the exhibition hall, which showcases a wide range of products and services from fire protection companies, organisations and associations, and affiliated regulatory and non-government bodies.

All exhibitors will provide essential information about the latest industry-related products and services to both fire protection personnel and affiliated industry members.

This year, which promises to be one of the largest exhibitions in the history of Fire Australia, will also feature a

unique 'Meet the Speaker' lounge. In the lounge conference attendees will be able to directly engage with conference speakers following their presentations.

The exhibition hall also features a large dedicated café seating area for attendees to use during catering breaks or as a meeting space with clients and suppliers.

All related industry members are encouraged to attend and peruse the exhibition. Entry is free, but registration is required. All exhibition attendees will receive a complimentary trade show bag.

13
fireAustralia
conference & exhibition



AFAC13
Shaping Tomorrow Together
melbourne 2-5 september



Opposite: (L-R) Vijith Randeniya of the West Midlands Fire Service in the UK, Philip Stittleburg of the La Farge Fire Department in the US, and Laurie Lavelle (retired) of the Emergency Services Foundation on the panel 'Collaboration—what can be achieved?'

AFAC & Bushfire CRC Annual Conference

The AFAC and Bushfire CRC conference was one of the best yet, representing a milestone for the partner organisations of the conference. Top-quality keynote speakers and sessions were accompanied by award presentations that recognised some of our best researchers and practitioners.



“The conference is well worth attending.”

Above: Craig Lapsley, Fire Services Commissioner of Victoria.

Above right: MFB demonstrate its unmanned aerial vehicle.

Above far right: Magic at the 20th Gala Dinner.

The leading knowledge-sharing event for fire, land management and emergency services, the annual AFAC & Bushfire CRC conference, was attended by nearly 2,000 delegates in Melbourne from 2–5 September, making it the largest all-hazards conference in Australasia. With delegates attending from around Australia, the US, the UK, New Zealand, Israel, South Africa and the Pacific Islands, delegates had the opportunity to network, share knowledge and collaborate on international matters.

Celebrating partnerships

The theme of this year's conference *Shaping Tomorrow Together* recognised the need for emergency services to work together collaboratively with the community and

other partners from the education, health, business and research sectors, and all levels of government, to shape our future.

Victorian Fire Services Commissioner Craig Lapsley said the timing of the conference was important for the sector.

“As we move towards an integrated, all-hazards and all-emergencies model of emergency management, it is more important than ever to share and build on existing and new knowledge to ensure the fire and emergency management sector statewide and across Australia continuously improves the way we operate together for the benefit of the community,” Mr Lapsley said.

Bushfire CRC Chairman Len Foster highlighted the successful partnership between AFAC and the Bushfire CRC.

“It's important to reflect on this partnership as it has been crucial to the success of both organisations. The successful integration of research into agency culture wouldn't be possible without it, as the research needs have been driven by the end users,” Mr Foster said.

Sessions and presentations

The latest research into fire and natural hazards was presented during the Research Forum, which kicked off the conference. Showing why research and innovation were vital precursors for safer

“Keep up the excellent work. Your use of the web services awed me as this is new and the experience and exposure to be able to make information and registration readily accessed added to the value you delivered with your overall conference program.”



Delegates at the Research Forum.

Below: AFAC President and Commissioner Queensland Fire & Rescue Service, Lee Johnson [R], presents a donation to Tracey Petrie (L) and Yvonne Singer (c) from the Victorian Adult Burns Service.



Below: Conference Steering Committee Chair Euan Ferguson, Chief Officer of the County Fire Authority, opens the conference and acknowledges the milestones for the industry.



Gary Morgan, CEO of the Bushfire CRC (centre), addresses media about the seasonal bushfire outlook for Australia.



Joint winners of the Prestigious Laurie Lavelle Award Supt Greg Reynolds of Queensland Fire and Rescue Service (L) and Geoff Brown and the Corio District team of the Country Fire Authority.



The 2013 Trade Exhibition covered 6,000 square metres of the Melbourne Convention & Exhibition Centre. More than 114 trade displays featured.

communities and better environmental management, 30 presentations took place throughout the day, emphasising the diversity of research being conducted across all hazards.

Professor Tim Flannery, [then] Chief Climate Commissioner, opened the conference on the Tuesday by presenting on extreme weather events and how climate change was making many types of extreme weather events worse in terms of their impact on people, property, communities and the environment. More than 40 sessions were presented on the Tuesday and Wednesday of the conference and four interactive panel discussions.

Awards

Several awards were presented at the conference including the prestigious Laurie Lavelle Award, presented to joint winners Supt Greg Reynolds from Queensland Fire and Rescue Service and Geoff Brown from the Country Fire Authority, and the AFAC & Motorola Knowledge Innovation Awards. In acknowledgement of the Australian Government's ongoing support to NAFC and Aerial Firefighting capability across the country, Mr Mark Crowweller, Director General at Emergency Management Australia, presented the award to acknowledge 10 years since the inception of NAFC to Richard Alder, NAFC General

Manager, and Stuart Ellis, AFAC CEO.

The Excellence in Utilisation of Bushfire CRC Research Award was presented to the NSW Rural Fire Service for both using and further developing Bushfire CRC research on fire behaviour modelling, grassland curing and smoke plume modelling to improve their operational tools. As this was the final conference for the Bushfire CRC, it was fitting that the contribution all researchers have made to the Bushfire CRC over the past 10 years was acknowledged. Two researchers were specifically recognised for their consistently high-quality research outputs, reflected in their publications and high research uptake by agencies. Blythe McLennan from RMIT University and Fabienne Reisen from CSIRO were both awarded the Outstanding Contribution to the Bushfire CRC Award.

Poster awards, sponsored by Dräger, were also presented, with the Judges' Award for best poster going to Bushfire CRC PhD student Sondra Dickinson from the University of Melbourne. The People's Choice Award was presented to Elliott Simmonds from the NSW SES. Congratulations to all award winners.

“The conference program was very informative and allowed a lot of interactions from participants.”



Tweets

► Reading through the tweets from #AFAC2013 conference this week. Some great info to be used this fire season to help communities.

► A great few days at #AFAC2013—see you next year!

► Crowweller: Inevitability. Back it up with science. We can't control natural events. Prevention is a misnomer. #AFAC2013

► A fantastic #AFAC2013 conference.

► Fantastic spatial PDP session today. Lots to think about and many questions for my EMSINA [Emergency Management Spatial Information Network Australia] rep next week. Thanks all.



David Kaufman from the Federal Emergency Management Agency, the US, addresses the audience on the many factors driving change.



Director-General of Emergency Management Australia, Mark Crossweller (L), NAFC General Manager, Richard Alder (C) and AFAC CEO, Stuart Ellis (R).



(L) Supt Greg Reynolds accepts his award from Laurie Lavelle.



Above: Founding AFAC CEO Laurie Lavelle, Bushfire CRC Chairman Len Foster and Bushfire CRC CEO Gary Morgan.



Above: (L-R) Simon Heemstra, NSW Rural Fire Service and Gary Morgan, Bushfire CRC.



Raymond Crowe on stage at the 20th Gala Dinner.



Sam Johnson, founder of the New Zealand Student Volunteer Army, presents on mobilising and leading volunteers in the wake of the NZ earthquakes.



Above: (L-R) Commissioner Shane Fitzsimmons of the NSW Rural Fire Service, AFAC CEO Stuart Ellis, AFAC Director Operations & Support Erin Liston-Abel and Commissioner Lee Johnson of the Queensland Fire and Rescue Service.

Milestone

This year's conference marked a significant milestone for the industry, celebrating 20 years of AFAC, 10 years of the Bushfire CRC and 10 years of the National Aerial Firefighting Centre (NAFC). Signifying this important milestone, AFAC took the opportunity to recognise several people who have made a valuable contribution to the industry over the past 20 years, including:

- Tony Blanks AFSM—Forestry Tasmania
- Ewan Waller AFSM—Department of Sustainability & Environment Victoria
- Bob Conroy—National Parks & Wildlife Service NSW, Office of Environment & Heritage
- Paula Beever—New Zealand Fire Service
- Michael Gallagher—Tasmania Fire Service
- Dieter Gescke ESM—NSW State Emergency Service
- Stephen Oppen ESM—NSW State Emergency Service
- Rob Taylor—Metropolitan Fire & Emergency Services Board

- Jim McLennan—La Trobe University
- Mary Omodei—La Trobe University
- Christine Owen—University of Tasmania
- Bushfire CRC researchers and students.

Concluding the three-day conference was a debate 'Is it only a disaster that brings us together?', moderated by Jon Faine from ABC Radio, Melbourne.

Six professional development workshops were attended by almost 300 industry personnel on the Thursday following the conference.

Thank you to our major conference sponsor Scania and supporting sponsors Dräger, Motorola Solutions, GAAM, Luxfer Gas Cylinders and Isuzu for their ongoing support. An extended thank you to all delegates, AFAC and Bushfire CRC staff and the Conference Program and Steering Committees for all their hard work in making this year's conference such a success. Thank you also to the 114 trade exhibitors.

Conference proceedings

Speaker audio recordings, abstracts, papers, presentations and research posters can be downloaded at www.afac.com.au/events/proceedings.

To access the proceedings you will need to log in to your AFAC web account or create one.

If you have any issues doing this please contact member.services@afac.com.au. ■

“The trade exhibition was fantastic. There are a lot of new products on the market and the reps were very knowledgeable of their products, and there was a lot of information to take away to show other staff members.”

More than 140 research posters were on display in the Dräger Knowledge Lounge.



“This was a great display of information and I collected a lot of information from the Dräger Knowledge Lounge.”



FLIR K-Series: Handheld thermal imaging cameras for firefighting applications

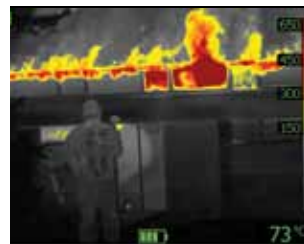
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Fast-running fires can occur in any fire season, and communities need to prepare.

Risk is high this fire season

Bushfire is a part of life in Australia. But according to the science, what areas have been assessed as having an above-normal fire potential this season?

By Nathan Maddock,
Bushfire CRC
Communications Officer

Large areas of Australia face above-normal bushfire potential this southern bushfire season, according to the *Southern Australia Seasonal Bushfire Outlook*, recently released as Bushfire CRC *Fire Note 117*.

Climatologists and meteorologists from the Bureau of Meteorology met with fire and land managers from across the country at the ACT Emergency Services Agency (ESA) headquarters in late August to discuss the fire potential across Australia.

The workshop produced the Bushfire CRC's bushfire outlook for the fire season across southern Australia, below the Tropic of Capricorn. When combined with the northern Australia bushfire outlook, produced in June in Darwin and covering northern Queensland, the Northern Territory and northern Western Australia, the result is the bushfire outlook across the country. These seasonal outlook workshops, supported by the Bushfire CRC, have been held each year since 2006.

Reasons for the above-normal forecast

Rick McRae, Special Risk Analyst at the ACT ESA, chaired the meeting. Mr McRae said that there were a few reasons for the above-normal forecast this year.

"Across the middle of Australia, through to the north-west, the above-normal bushfire prediction is mainly due to the abundant grass growth arising from above-average rainfall in May 2013. These conditions, coupled with above-average temperatures across the country since January 2013, have resulted in a build-up of fuel.

"These higher temperatures have also seen forests around the country begin to dry out," Mr McRae said.

Bushfire CRC CEO Gary Morgan said the seasonal outlook assisted fire and land managers in their fire season preparations.

"Based on the science, agencies can ensure

that additional preparedness is undertaken where appropriate to reduce the impact of fires when they start," Mr Morgan said.

"It is important to remember that the outlook is not a prediction of where fires will occur. Fire is part of the Australian environment, and occurs across the country when conditions are right.

"Normal fire seasons may still produce fast-running fires," he stressed.

"What this tells us is that being prepared for a bushfire is not just a summer job—by summer it can be too late. Communities in bushfire-prone areas, and in the ever-expanding urban-rural interface surrounding our cities and major towns, need to prepare for fire year-round.

"The bushfire outlook is also a useful tool for the media, and for politicians, to help the fire agencies get the messages out, encouraging people to be aware of their fire risk and to take action. Make sure you have a bushfire plan, and that you have practised your plan as a household. Do not be one of those people who, after a fire, wish they had planned appropriately beforehand," Mr Morgan added.

Map of bushfire potential

A key output from the Canberra meeting was the map of Australia, highlighting which areas can expect above-normal bushfire potential and which can expect normal bushfire potential. The shaded areas are drawn generally rather than specifically—it is meant to be a broad-brush map, not one that tries to predict the outlook for particular towns or regions. As such, no cities or towns are named on the map.

In **Queensland**, vast areas with moderate to abundant grassland fuels and low stock levels could experience large-scale, fast-running grass fires. An above-normal fire potential has been assessed for areas

between Dalby and Warwick, south to the NSW border and west to Goondiwindi. The area to the west between Wallumbilla and Dulacca, south to St George and an area extending from the Sunshine Coast Hinterland into the western areas of the Wide Bay Burnett region are also assessed as above-normal fire potential.

Above-average rainfall for much of the preceding three years across **New South Wales** is likely to continue the trend of heavy grass fuel loads. The grassland areas include those west of the Great Dividing Range, the Tablelands and the Upper Hunter. Above-normal fire potential is expected to continue in these areas. Over much of the forested areas, below-average rainfall since July has resulted in a drying trend in forest fuels. If this trend continues, above-normal fire activity conditions are expected for the forested areas of the central and southern NSW coast and ranges. Normal fire conditions are likely in far west NSW.

The outlook for the grasslands in the **ACT** reflects the vigorous grass growth that has continued into spring. As a result, above-normal fire potential has been assessed for the grasslands. The recovery of fuels since the 2003 fires continues to be monitored and managed. However, should the forests dry out heading into summer, there are concerns for the potential for above-normal forest fire activity.

Victoria's forests are expected to be more flammable than normal due to the lingering effect of last summer's extreme dryness and heat, with dry underlying soil profiles and more abundant dead, elevated, near-surface and bark fuels. Despite some chance of above-average spring rains and reasonable

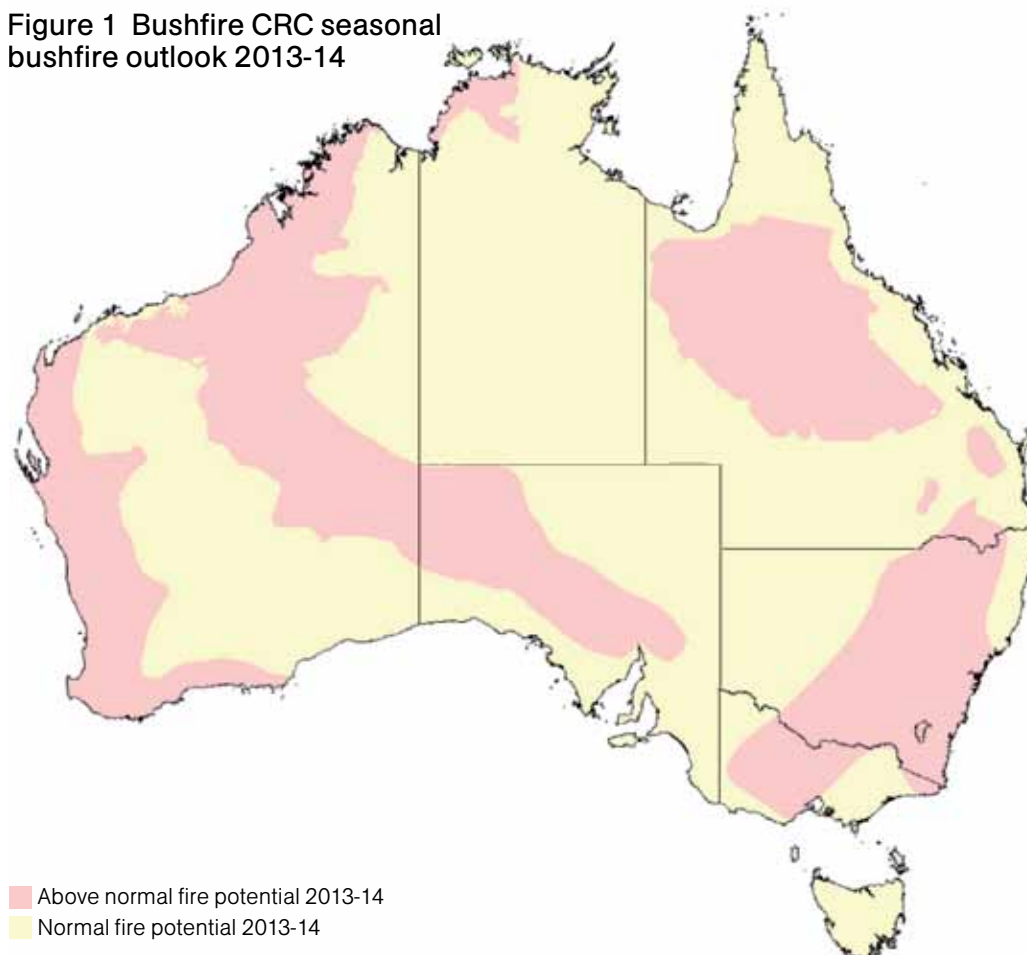
winter rainfall, significant underlying dryness is likely to continue in many western and central forests. These areas can expect above-normal fire potential. Strong drying of soils and fuels has also commenced in East Gippsland, which may result in early bushfire activity if this trend continues. Current expectations are for average to above-average grass growth in western Victoria and the north-east of the state.

Normal fire potential is expected for the lead-up to summer in **Tasmania**, except for small areas in the Derwent Valley and the mid-East Coast, both of which are drier than usual. Most of Tasmania has either average or above-average soil moisture and this will reduce fire activity while promoting growth, which may become a risk for large fires in the New Year.

In **South Australia**, above-normal fire potential is predicted in the North-West Pastoral and Flinders districts due to abundant and continuous grass fuels. This is as a result of the previous season's growth remaining, and the rainfall received, linked with good growing conditions. For the remainder of the state, including the agricultural areas, the most likely scenario is for near-normal levels of fire activity.

Western Australia's Mid-West and Desert regions are expecting above-normal fire potential as a consequence of high rainfall, which has resulted in very high annual grass growth and high fuel loads. Above-normal bushfire potential is also forecast in the South West, which has seen reduced rainfall, soil moisture deficit and high fuel loads. The Wheat Belt and Nullarbor have been assessed as normal fire potential. ■

Figure 1 Bushfire CRC seasonal bushfire outlook 2013-14



■ Above normal fire potential 2013-14
 ■ Normal fire potential 2013-14

Attendees at the seasonal bushfire workshops were from:

- Australasian Fire and Emergency Service Authorities Council
- Australian Capital Territories Emergency Service Agency
- Bureau of Meteorology
- Bushfire CRC
- Bushfires NT
- Charles Darwin University
- CSIRO
- New South Wales Rural Fire Service
- Northern Territory Fire and Rescue Service
- Parks Australia
- Queensland Fire and Rescue Service
- Queensland Parks and Wildlife Service
- Queensland Rural Fire Service
- South Australia's Country Fire Service
- Tasmania Fire Service
- Victoria's Country Fire Authority
- Victoria's Department of Environment and Sustainability
- Western Australia's Department of Fire and Emergency Services
- Western Australia's Department of Parks and Wildlife.

Aspirating smoke detection in industrial environments: Part 3

By Paul B Leslie,
Special Practices
Manager, Xtralis

In the final of three articles, the application of aspirating smoke detection in harsh environments and the importance of selecting the correct technology are discussed.

It is no secret that aspirating smoke detection (ASD) was conceived and developed for use in clean environments such as telecommunications, data centres and computer rooms. However, let's not forget that ASD has proven itself in hostile environments, and although there are still views within the fire industry that ASD is unsuitable for these environments, thousands of systems have been installed globally for more than 25 years.

Detector contamination

Any detection equipment used in industrial environments will suffer the effects of wear and tear—and particularly contamination. Regardless of the technology, whether it is photo-optical point, ionisation or laser, equipment deterioration is inevitable—even with ASD systems.

Because these systems actively draw in air, and thus contaminants, the management of contamination is essential. Minimising the impact on the equipment requires good physical filtration. Unless this is addressed correctly, contamination will ultimately compromise performance and the serviceable life of the equipment.

With the increase in ASD products globally, each manufacturer has developed ways in which to deal with contamination. Some detectors draw in 100% of the environmental air without filtration, relying on

complex algorithms and other measures to manage dust contamination. Others use minimal or basic mechanical filtration methods and only apply pre-filters in applications that really warrant it.

Any aspirating smoke detector not designed for the environment will draw in contaminated air and, without the proper filtration, will experience the effects.

Pre-filters have become a part of ASD systems used in many hostile environments. However, one important fact must be kept in mind: pre-filters are not monitored. When they accumulate a certain level of contamination they will not allow smoke to be drawn to the detector. This phenomenon is termed 'smoke attenuation'. The pre-filters can become contaminated to such an extent that only air will pass through. It is difficult to say how long this phenomenon will continue before an airflow fault is raised, since all ASD systems are different. It will also depend on the type of contamination. Anywhere from a week to months is not unusual. The issue arises when the maintenance regime applicable to the pre-filters is not strictly followed. The required level and frequency of maintenance depends on the application and the environmental conditions, but the underlying concern is that time can pass where the ASD system will not effectively detect smoke.

The answer is a specific detector that incorporates a monitored 'intelligent' filter within a purpose-built detector designed with contamination in mind.

ASD system maintenance

Because of the different environments and conditions, the degree of preventive maintenance for each system must be considered in line with the type of contamination and concentration level within the area. Environments with low levels of background contamination may only require preventive maintenance as set down by the manufacturer. However, where contamination levels are more severe, additional preventive maintenance will be required.

In addition to the detector and pipe network, attention must also be given to any other ancillary equipment associated with the system, for example:

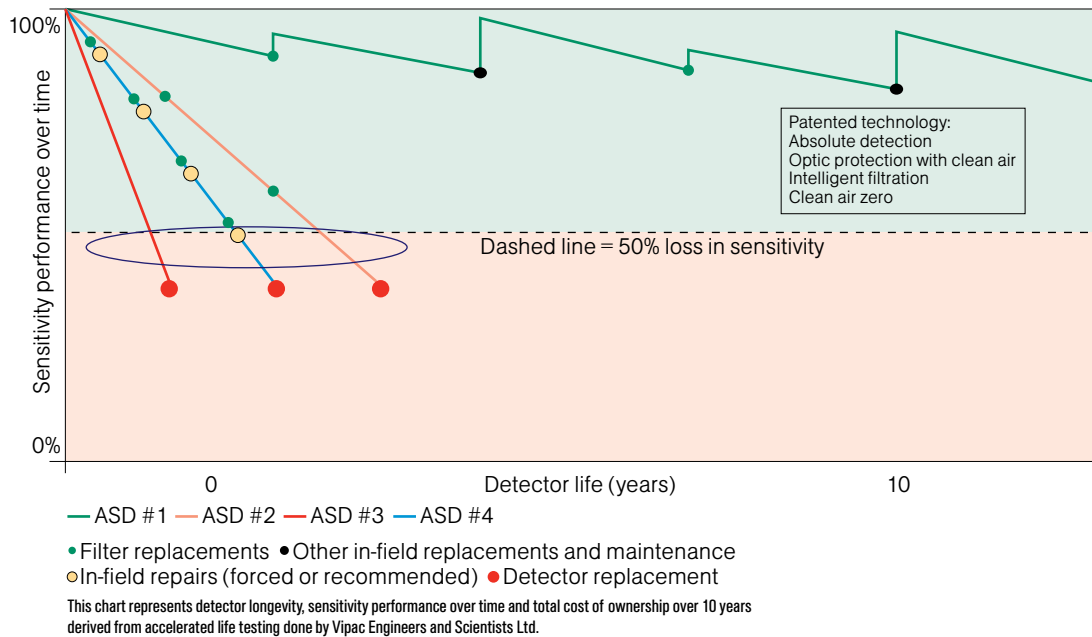
- Chemical pre-filtration—media must be checked and changed regularly.
- Water traps, coalescing filters and driers—must be checked periodically to monitor water build-up and evaporation.
- Back flushing—must be regularly implemented to clean the pipe network in hostile environments.

This equipment may be manual or automatic and any components associated with it will need servicing.

Example of contamination at the exhaust air outlet of an ASD with no pre-filtration.



Figure 1 ASD products – Relative robustness accelerated testing results using ashrae52.2



The original installer or an authorised distributor or well-trained service contractor can carry out the maintenance. Industrial sites will require a more rigid level of maintenance and service than cleaner applications.

Are all ASD systems suitable?

This is a question that can only be answered after properly evaluating the various ASD products available. Having stated that any fire detection equipment used in hostile environments will suffer the effects of contamination, it is important to recognise that even among ASD products all is not necessarily equal. Each manufacturer's equipment must be carefully analysed to ensure suitability for the application and conditions.

Hughes Associates Inc. (Fire Science & Engineering) (HAI) in the US conducted a webinar in 2012 entitled 'Testing and verification of ASD products in different environments'. HAI witnessed and verified the testing of several manufacturers' ASD products.

Testing was undertaken to assess ASD performance under different environments. Several product brands were tested with varying results. Not only were products tested for clean environments but also for industrial environments. The focus for industrial application testing was determining the performance of ASD as a technology in these environments by evaluating:

- detection performance in moderately high airflow environments
- test performance of ASD with automatic alarm threshold adjustment algorithms to slow the smoke growth scenario
- test performance of ASD in moderately low ambient background smoke levels

- test ASD long-term performance to the impact of contamination on hardware
- comparative assessment of detection response to smoke and dust sources.

In a further attempt to establish the suitability of ASD products in industrial or hostile environments, the consultants VIPAC Engineers and Scientists also tested current ASD products. The testing was very specific, relating to 'accelerated life testing' using ASHRAE S52.2-2012 *Method of testing general ventilation air-cleaning devices for removal efficiency by particle size—standardised loading conditions (dust)*.

Four ASD products were chosen and tested. Detectors were selected where the respective manufacturers marketed their products as being 'suitable' for use in industrial environments and conditions that could be considered harsh or hostile.

Subsequent to the VIPAC testing, the chart of the relative robustness of aspirating smoke detectors, (above), was developed. The four detectors tested have been indicated only as ASD#1, #2, #3 and #4. The outcome is surprising and certainly shows that not all detectors offer the same performance when exposed to dust.

Testing showed that ASD#3 had a relatively short life cycle and could only sustain operation over a

“Any aspirating smoke detector not designed for the environment will draw in contaminated air and without the proper filtration will experience the effects.”

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- » Hydrogen Sulphide (H₂S) 0-100 ppm
- » Sulphur Dioxide (SO₂) 0-10 ppm
- » Nitrogen Dioxide (NO₂) 0-10 ppm
- » Methane (CH₄) 0-100% LEL
- » Propane (C₃H₈) 0-100% LEL



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marketing-apac@xtralis.com.



Any aspirating smoke detector not designed for the environment will draw in contaminated air, such as that found in a dusty environment such as the one shown here, and, without the proper filtration, will experience the effects.

short period before replacement was required. ASD#4, while having a slightly longer life cycle, required both frequent filter replacement and repairs. Repairs typically related to diminished performance or failure of the aspirator and/or sensing chamber. ASD#2 experienced better performance than ASD#4 and #3 although its life cycle was also less than desirable. Only one detector, ASD#1, could sustain a substantial life cycle and at the same time deal with the effects of dust.

Perhaps the most critical aspect of this testing was deteriorating detector sensitivity. Three out of the four detectors showed significant sensitivity loss during testing. This is certainly a major concern when selecting equipment for these environments. After all, this is about detecting fires early and effectively, isn't it?

So, what is the aim of all this? The results of any independent third-party testing should establish the suitability of fire detection equipment to do its job in the application and environment for which it is intended. Educating practitioners about the correct selection of any product, including ASD, can only lead to better installed and performing systems with ultimately fewer likely problems and nuisance alarms.

Summary

Air sampling smoke detection has come a long way since its inception. Today there are many global manufacturers with a host of products. The detector is only one part of an ASD system. Managing performance in both clean and difficult or dirty environments with this technology requires knowledge and experience.

To provide the best possible fire protection for an industrial environment, the correct technology and product must be purpose-built and able to withstand the conditions onsite, providing efficient and effective contamination management. The detector must maintain its sensitivity over its life cycle and provide a low total cost of ownership.

“The best possible fire protection for an industrial environment means selecting the correct technology and the most appropriate product in the first instance.”

A practical and cost-effective design that includes the pipe network is also a significant factor if the system is to offer performance with low maintenance.

Most importantly, the system must be installed, commissioned and maintained correctly with follow-ups to make the necessary adjustments that were both known or unknown at the design stage. A good system, designed with adequate capacity, will be able to be ‘fine-tuned’ post-installation to ensure the expected performance for the end user.

Finally, ASD systems can perform in industrial environments, but should only be designed and installed by people with knowledge and experience. If you don't have the knowledge and experience, get it. ■

Paul Leslie has more than 35 years' experience in security and fire, 20 of which have been spent in the area of aspirating smoke detection. Paul Leslie is the Chair of the FPA Australia Queensland State Divisional Committee. He has a dedicated interest in the fire industry and strong involvement in the Association. He also serves on several Australian Standards committees. His knowledge and expertise have involved the global design and support of ASD systems in many wide and varied applications.

AIIMS-4 Intelligence Course

By Sandra Lunardi,
Director, Workforce
Development, AFAC

The fourth edition of the AIIMS Manual now includes incident intelligence. A pilot Intelligence Course was recently held in Melbourne to help participants understand this function within the AIIMS-4 framework.



AFAC initiated the development and delivery of a pilot Intelligence Course in Melbourne.

The 4th edition of the AFAC flagship incident control system, the Australasian Inter-Service Incident Management System (AIIMS), was published in April 2013, and is the industry standard. This release was the culmination of a comprehensive, year-long review of the AIIMS Fundamental Doctrine and involved more than 70 of Australia's most experienced and credible incident management practitioners.

Informing the preparation of the AIIMS-4 doctrine were the findings of a comparative analysis between AIIMS, other incident management systems within Australia and internationally, and the international standard ISO 22320-2011 *Societal security—Emergency management—Requirements for incident response*. This analysis phase was timely, as it provided an opportunity to learn from the experience of emergency management practitioners within Australia, and to build on the extensive experience and good practice found in the US, the UK and New Zealand. Significantly, this provided opportunity to embed findings from the Bushfire CRC research programs into incident management doctrine and to learn from reviews of emergency service performance and their subsequent recommendations.

Including the Intelligence function

Led by the AIIMS Steering Committee, a significant outcome of the review was the inclusion of the Intelligence, Investigation and Finance functions. The need for better intelligence has been a common theme in a number of the findings from reviews of incidents across Australia. The decision to introduce the Intelligence function within AIIMS is an acknowledgement of the need, within an Incident

Management Team (IMT) to: build better situational awareness and a Common Operating Picture; improve information flows; provide access to and engagement with local expertise and knowledge; improve the approach to predicting incident development; and provide the best possible support for decision-makers.

While the introduction of the Intelligence function within AIIMS is a significant development, it is not entirely unexpected. Some fire and emergency services have already commenced embedding an Intelligence function into their operations. The inclusion of the Intelligence function within AIIMS-4 is recognition that Intelligence is central to the planning process and is dependent on the scale, complexity and nature of the hazard and the operation's tempo. This may warrant the elevation of the Intelligence task from within Planning to a separate function.

Emergency managers recognise that intelligence relies on the application of critical thinking to the task of gathering, compiling, analysing and presenting information to assist decision-makers in dealing with uncertainty. The very nature of the environment in which incident managers operate is characterised by uncertainty, friction, non-linearity and disorder. Intelligence helps decision-makers deal with this by shaping their understanding of the situation and possible future developments.

With the AIIMS third edition, some aspects of Intelligence were covered by the 'Situation Unit' within Planning. This new Intelligence function can act as a standalone capability if required.

AFAC recognises the need to train personnel to manage the Intelligence function within an IMT, either as an Intelligence Unit leader reporting to the Planning Officer, or in large and complex incidents as an Intelligence Officer running a separate section and reporting directly to the Incident Controller.

Pilot Intelligence Course

In recognition of this capability gap, AFAC initiated the development and delivery of a pilot Intelligence course in Melbourne from 10 to 12 September 2013. Facilitated and developed by Noetic Solutions working closely with AFAC, the course was designed to provide participants with an understanding of the Intelligence function within the AIIMS-4 framework. The aim was to improve planning, operations and command decision-making. The target audience was personnel who were experienced in using AIIMS and who had operated in Level 2/3 IMTs in a Planning, Operations or Situation Officer capacity.

The course comprised a series of modules delivered over three days. It explored concepts such as the role of Intelligence in incident management, how the Intelligence function is organised, and how it supports the other functions to develop and maintain a Common Operating Picture. The theory was supported by practical activities, case studies and a series of scenarios in which participants applied the concepts and performed the function of Intelligence.

The 19 participants who attended the course were of a high calibre and came from a range of fire and emergency services across Australia. Their engagement and participation contributed significantly to the further development of the course, which may in future be delivered by agencies internally, potentially supported by facilitators with intelligence experience.

Other AIIMS-4 initiatives

Other initiatives relating to the implementation of AIIMS-4 include the release of the AIIMS-4 Training Resource Kit (TRK). The AIIMS-4 TRK incorporates all of the latest updates to the AIIMS 4th edition and provides 'awareness training'. Embedded within the AIIMS-4 TRK are many of the concepts associated with human factors and incident management. This is an example of end users and Bushfire CRC researchers

working together to achieve beneficial outcomes for the industry. The TRK also includes an electronic tutorial on human factors. In addition, the Bushfire CRC has included the option for facilitators and participants to access a Help Desk (until June 2014) to seek further guidance on questions relating to the human factors tutorial.

AFAC is working towards the release of its new AIIMS aides-memoire web app in November. This will be a mobile web application that contains all of the content found in the set of AIIMS aides-memoire and will be accessible on all mobile devices with an internet browser. After the initial download has completed, the app will be fully installed on the smartphone or tablet and will no longer require an active internet connection for users to access the full content. The hard copy AIIMS-4 aides-memoire pocket-book and A4-sized laminated cards are available now, including new aides for the Intelligence, Investigation and Finance sections.

AFAC continues to support the implementation of AIIMS-4 and is committed to building capability and ensuring that all AIIMS users are assisted to build their incident and emergency management capability, to keep communities safe and strengthen their resilience. ■



Intelligence course participants undertaking scenario exercises as a group.

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The PhD study attached to this project is investigating if there is an optimum amount of money to spend on prescribed burning that sees a reduction in the number of bushfires or the cost of suppressing bushfires.



Justifying investments into the future

By **Nathan Maddock**,
Bushfire CRC
Communications Officer

The ability to rationalise decisions economically, and to understand how future bushfires will affect communities, the environment and the economy are necessities in fire and land management.

The fire and land management sector has been accused in the past of forever looking backwards. The swathe of reviews and inquiries over the past decade has seen agencies caught up in implementing recommendations based on that last big fire, rather than preparing for the next one. But forward thinking is exactly the aim of the two-part 'Future Scenarios and Economics' project at the Bushfire CRC.

Future scenarios

"We are exploring the effect of global and climate change on future fire regimes," explained project leader Dr Geoff Cary from the Australian National University.

"We are looking at understanding the effects of change. How temperature and precipitation are changing, changes in atmospheric carbon dioxide concentration and how we might use the land differently. These will all affect future fire regimes in our landscapes."

"What will the length of the fire season be in different parts of the country? How intense will fires be, and will they occur more frequently? Understanding these issues will have important consequences for assets that matter to society.

"Understanding what fire may look like in our environment in the future can be used to understand future risk to communities," he said.

Understanding changes in demographics, population, vegetation and land use, coupled with

how cities and interface and peri-urban areas develop, is essential for fire and land management moving forward, believes Andrew Stark, Chief Officer at the ACT Rural Fire Service and project lead end user.

"These issues are important for us to be able to understand," Mr Stark said.

"If agencies are going to be able to evaluate, using our economic models of the future, a range of decisions that are made with some really long-term outcomes, we need to recognise what our environment is going to look like in the next 20, 30 or even 50 years.

"This comprehension will enable agencies to play a role in influencing land use planning, building codes and other parts of regulated government," Mr Stark said.

Economics

What does the study of economics offer the fire and land management sector? Quite a lot, according to economics project leader Professor Steven Dovers.

"Fire and land management agencies need to be able to make good investment decisions and to be able to justify those to their stakeholders," said Professor Dovers, Head of the Fenner School of Environment and Society at the Australian National University.

The increasing demands on the fire and land management sectors have really driven this project.

"The research has been looking at the role that different economic modes of analysis can play in

Table 1
Applying the categorisation of decision framework to prescribed burning

Management/policy question	Economic methods
Which fuel management strategies offer the best use of a given budget for mitigating bushfire risk to public good assets?	Benefit-cost, decision-support.
What are the trade-offs (unwanted costs) associated with prescribed burning?	Benefit-cost, decision-support.
How does the fuel management on private land affect the benefits of prescribed burning on public land?	Decision-support, institutional-behavioural analysis.
Should public funds be used to support private fuel reduction activities?	Institutional-behavioural analysis.
To what extent does political pressure and direction influence the net benefits from prescribed burning?	Political-economic analysis.
How much should be invested in prescribed burning compared with other prevention strategies?	Decision-support.
What is the optimal level of prescribed burning (accounting for different burn strategies and their effect on suppression effectiveness and cost)?	Decision-support.

helping to inform decisions, make trade-offs and really pointing to the best areas to be invested in.

“This could be a cost–benefit analysis that looks at all the different assets—both built, and things like water catchments and biodiversity—to try and look at how economics can actually help management decisions. Part of that is to really look at the many different decisions that are made in fire and land management, and therefore what are the questions we really need to be able to answer,” Professor Dovers said.

Andrew Stark agrees, but added that many economic models played a part.

“Models beyond the standard cost–benefit analysis have been analysed by the research team. Models such as decision-support frameworks, political–economic analysis and institutions and human behaviour all can add value.

“It is really all about how agencies can use these different frameworks to answer their questions and inform decision-making,” he said.

The aim is to provide a tool for end users to identify where different economic methods can assist their fire management and policy challenges across diverse decision-making contexts. Table 1 outlines an example using prescribed burning to illustrate the links between critical management and policy questions and the areas of economic analysis that could be applied to evaluate and support decisions.

Also helping to inform decision-making is Bushfire CRC PhD student Veronique Florec.

Based at the University of Western Australia, Ms Florec is exploring the application of economic analysis to prescribed burning strategies.

“I’m looking at different investments in prescribed burning. We want to know what the implications of changing a particular strategy are, and what comes out as a result in terms of suppression cost and damages when prescribed burning strategies are modified,” she said.

“What I’m looking for is what strategy minimises the sum of all the costs—prescribed burning costs, suppression costs and damages,” Ms Florec said.

To put it another way, what is the optimum amount of money to spend on prescribed burning to see a meaningful result in the reduction of fires or the amount of money spent on suppression?

“It is important to see that there is a point where too much investment in prescribed burning might actually offset the potential benefits,” cautioned Ms Florec.

“What I have found so far is that there is a wide range of strategies that are near optimal in terms of minimising total costs,” she said.

Bringing it all together

Andrew Stark believes the research conducted under this two-part project will enable agencies to present long-term plans to government and the community with confidence.

“The research is highly regarded because of all the fiscal pressures the states and territories are under,” Mr Stark said.

“The ability to go forward to government and the community with really robust, long-term proposals that are cost–effective and will produce great outcomes is vital.

“The next step for agency end users is to develop our capacity to understand which economic frameworks to apply to which question, and how to ensure quality data is sourced for the models to ensure robust outputs,” he said. ■

For more information on this research, visit the Bushfire CRC website at www.bushfirecrc.com/research/program-3.

A Fire Note and research posters are also online.

Carbon dioxide —a unique fire extinguishant

Carbon dioxide, long known as a fire extinguishant, saw less use with the advent of commercial halocarbons. Carbon dioxide is now used for many fire-extinguishing applications, but care must be taken with its use and storage.

By Barry Lee OAM

Heighted concern about the suffocation risk associated with systems totally flooded by carbon dioxide, particularly in complex enclosed spaces (shipboard machinery spaces, for example), coupled with lower installed cost and versatility of Halon 1301, saw a distinct decline in the popularity of carbon dioxide fire extinguishing systems. The demise of the halons rekindled interest in carbon dioxide, at least until the commercial availability of the halocarbons FK-5-1-12 and non-asphyxiating inert gas systems.

But don't write carbon dioxide systems off just yet. They remain eminently suitable for protecting aluminium and steel rolling mills and hydraulic pits, printing presses, rotating electrical equipment, pulverised coal plants, machining centres, dip tanks (using tankside discharge nozzles), foundry quench tanks and textile processing machinery (including mud pickers, garnett and drying and carding machines), to name a few. Carbon dioxide is also used in servo packages designed to actuate other special hazard systems and has long been used for life jacket, life raft and aircraft escape slide inflation.

“Carbon dioxide flooding for a pulverised coal plant is typically accomplished through heat exchangers (vaporisers). Liquid carbon dioxide is first passed through a vaporising unit consisting of a set of coils immersed in a stored-heat water bath. The warmed vapour is then injected through special low velocity nozzles.”



Carbon dioxide high-pressure cylinders

Some historical notes

One of the first references to carbon dioxide as a fire extinguishant dates back to 1877 when Dr Hendryk Beine in Groningen, Holland, took out a patent on the production of liquid carbon dioxide by heating sodium bicarbonate. Dr Beine was interested in the liquid carbon dioxide, which he called 'carbolem', and in his discussion on its advantages he said: "It can be used for locomotives, for steam boats, in fire extinguishers as a gas or solution ...".

While this was probably the first specific reference in such detail, an Australian, Dr William Bland, put forward his theory dealing with carbonic gas as a fire suppressant as early as 1839. Dr Bland's original experiments in Sydney in this field were based on laboratory experiments undertaken in Europe during the previous century on the effects of sulphuric acid on limestone. The gas produced from the combination of these materials was observed by Bland "... to expand rapidly and one-seventh of the gas was ample to render the remaining six parts of atmospheric air incapable of supporting combustion".

So the advantages of carbon dioxide gas for fire extinguishing have long been known. However, it was

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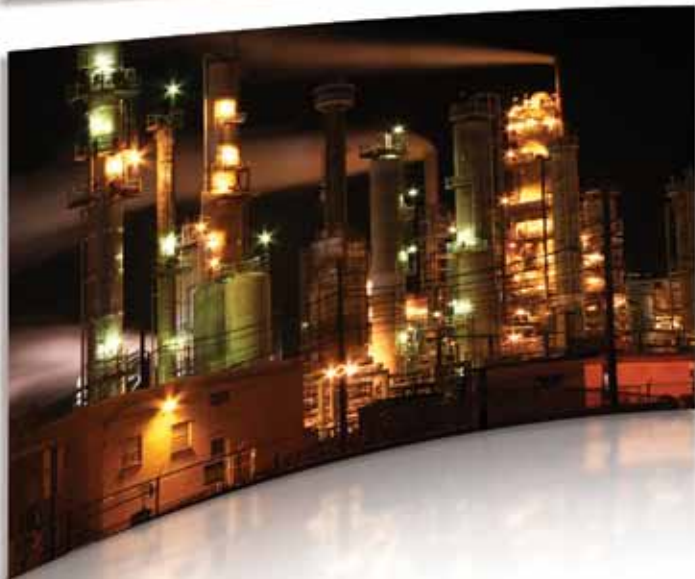
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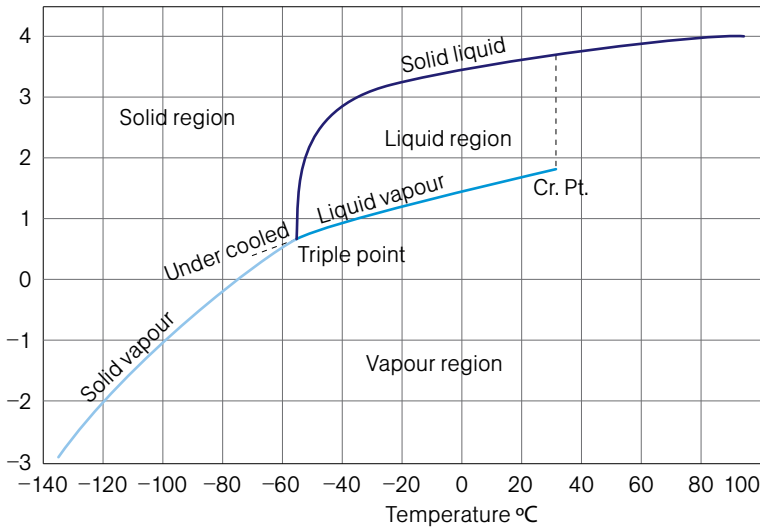
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Figure 1 Carbon dioxide properties

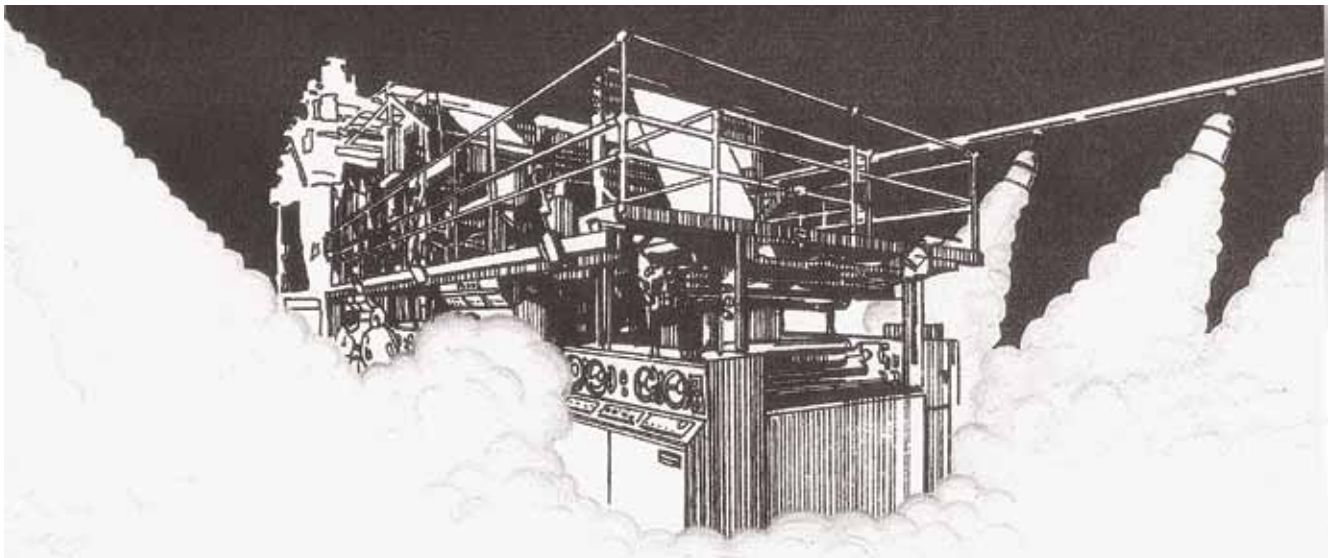
Pressure Log. p Atmos.



not until the growth of the telephone system in the US that attention became focused on the special fitness of carbon dioxide for certain types of fire extinction. In 1914, the Bell Telephone Company of Pennsylvania recognised the desirability of avoiding damage to wiring by extinguishing agents and installed seven-pound capacity hand extinguishers. In the decade following the Great War, it was recognised that either syphon tubes were necessary as proposed earlier by Camus, or the carbon dioxide cylinders needed to be inverted as described by Luhmann, in order to conduct liquid rather than gaseous carbon dioxide from cylinders. Some sizeable installations followed; for example, the boiler room of the original RMS Queen Mary was protected by a battery of cylinders containing 1.5 tonnes of carbon dioxide.

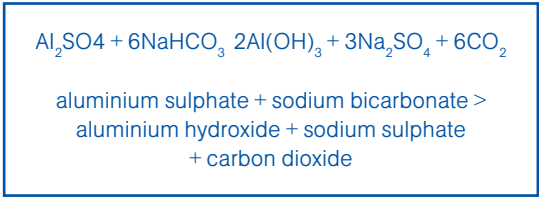
Right through World War II, carbon dioxide fire extinguishing systems performed yeoman service in the US in light marine, diesel-electric locomotive and intercity bus protection. During and after the war it was installed on patrol boats and on aircraft fire and rescue trucks.

Local application of carbon dioxide fire extinguishant.



In the early 1930s, the first carbon dioxide fire extinguishing system was installed on a single-engine US Navy aeroplane. It proved successful and was considered an early step towards realistic protection of aircraft in flight. DC-2, DC-3, DC-4 and DC-6 aircraft were equipped with carbon dioxide extinguishing systems. With the increased airflows necessary to cool larger radial engines, it became necessary to develop high-rate discharge carbon dioxide container valves and directional (selector) valves. Lockheed Constellations and some Super Constellations were provided with standard carbon dioxide systems for engine fires, fires in cabin heaters and fires in auxiliary power units. On later model Super Constellations, jet and turboprop aircraft, the weight penalty associated with carbon dioxide resulted in phase-out in favour of methyl bromide (De Havilland Comet 4), bromotrifluoromethane and dibromodifluoromethane.

As a further illustration of the ubiquity of this gas, it is worth noting that chemical foam and soda-acid extinguishers used chemically liberated carbon dioxide as the expellant. A typical reaction applicable to chemical foam is:



Similarly, the acid-alkali reaction in soda-acid extinguishers generated sodium sulphate and, you guessed it, carbon dioxide. Even today, a significant proportion of the world extinguisher production uses carbon dioxide cartridges for agent expulsion. Carbon dioxide is also an important component of one popular inert gas fire extinguishing system.

Characteristics of carbon dioxide

Carbon dioxide is a relatively inert, colourless, odourless and tasteless gas that is approximately



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Carbon dioxide cylinder.

State of CO₂ with temperature

Below -56.6°C (the triple-point)

CO₂ exists as a solid and vapour.

At -56.6°C

CO₂ exists as solid, vapour and liquid.

Between -56.6°C and 26.7°C

CO₂ exists as vapour and liquid. At -56.6°C the CO₂ has a density greater than that of water and occupies about 67% of the cylinder volume. The vapour density is approximately one-tenth that of water. As the temperature is raised from -56.6°C to 26.7°C, the liquid level rises until it reaches the top of the cylinder at 26.7°C. During this temperature rise the liquid density decreases and the vapour density increases.

Between 26.7°C and 31°C

All the CO₂ exists as a liquid. In this temperature range the liquid has considerable compressibility—the increase in pressure per degree increase is not much greater than the rate existing before the cylinder became liquid filled.

At about 31°C (critical temperature—sources quote slightly different temperatures)

All the CO₂ changes from liquid to gas.

Above 31°C

All the CO₂ exists as a gas.

1.5 times heavier than air. Its presence at time of discharge is indicated by a white vapour or snow. It is non-reactive with most substances, is a non-conductor of electricity and leaves no residue. Fire extinguishment occurs by oxygen reduction with a minimal cooling effect. Carbon dioxide is present in the atmosphere at approximately 0.03% and is expelled by animals and humans during respiration.

Strictly speaking, carbon dioxide cannot be described as an inert gas because it is physiologically active and fatal at low concentrations (approximately 9%). At 4% to 7%, respiration noticeably increases; that percentage is the limit before harmful effects are noticeable. At 25% to 30% concentration in air, breathing stops as the result of a narcotic-like effect. Thus the health and safety of personnel must be considered.

Storage of carbon dioxide

Carbon dioxide systems are classified according to the manner in which the gas is stored—either low pressure (bulk storage) or high pressure (individual cylinders). Low-pressure systems use a large insulated and refrigerated storage tank. The carbon dioxide is maintained at 300 psi (2068 kPa or 20.7 bar) by keeping the temperature at approximately -18°C. Low-pressure tanks are normally provided when the quantity of carbon dioxide exceeds around two tonnes, and are designed to be filled to more than 90% of their volume with liquid carbon dioxide. Units storing more than 100 tonnes of carbon dioxide have been built.

High-pressure systems use one or more seamless cylinders manifolded together. The vapour pressure at 21°C is approximately 850 psi (5860 kPa or 58.6 bar). Storage cylinders are typically carbon steel, chromium-molybdenum lightweight steel or aluminium alloy. Some cylinders intended for fitting in combat equipment are wire-wound to confer non-shatterability. Most carbon dioxide cylinders used in Australia for fire extinguishing contain a 66.6% filling of carbon dioxide. The weight of the carbon dioxide charge is 66.6% of the water weight capacity of the cylinder. In a 66.6% filled cylinder, the condition or state of the carbon dioxide depends on the temperature.

Typically, carbon dioxide cylinders are provided with burst discs designed to release the gas if the pressure exceeds 2850 psi (194 bar).

During the discharge of a high-pressure carbon dioxide system many changes take place. The discharge from the cylinder is isentropic (creates no change in entropy). In an average system, 70–80% of the cylinder contents are discharged at a high and nearly steady rate, after which the rate tapers to zero. The discharge from the nozzles consists of snow (dry ice) of particle size approximately 1 µm and temperature -79°C. Snow formation has been observed from discharge nozzles when the cylinders were at 71.1°C. At 21°C, approximately 25% of the discharge will occur as snow, but will sublime (change directly from solid to gas) rapidly. ■

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TEXAS CITY HOLOCAUST 1947



Around 8.00 am on 16 April 1947, fire was detected in a cargo hold of the ammonium nitrate-laden French-registered freighter *SS Grandcamp* docked in the Port of Texas City. At 9.12 am the ship blew up, setting off a chain of explosions and fires. The detonation was felt 160 km away. The exact loss of life will probably never be known, but it has been estimated at 580 people, including 27 members of the 47-member Texas City Volunteer Fire Department. The number of injured ran into the thousands. More than 1,200 families were made homeless by

the explosions, which also caused serious damage to business and public buildings.

Another ship, *SS High Flyer*, in dock for repairs and also carrying ammonium nitrate, was ignited by the first explosion. It was towed 30 metres from the docks before it too exploded at 1.10 am on 17 April.

The Texas City waterfront was also home to the vast Monsanto Chemical Company plant. The *SS Grandcamp* explosion caused the Monsanto plant to vibrate violently on its foundations (18-m piling), which in turn ruptured pressurised operating unit interconnections, resulting in further explosions and fires. Almost half of the Monsanto employees working at the time were killed or missing, and almost all of the remaining employees were injured, many critically.

Property losses from the incident were estimated at US\$100 M. Three freight vessels and their cargoes, more than 500 railway freight cars and 1,500 motor vehicles were destroyed. The combined losses of lives and property forever marked the Texas City Holocaust as the worst industrial accident in US history. ■

“The exact loss of life ... has been estimated at 580 people. The number of injured ran into the thousands. More than 1,200 families were made homeless.”

Ammonium nitrate

Chemical formula NH_4NO_3

Occurs as white, grey or brown odourless beads, pellets or flakes

Melting point 169°C (decomposes at 210°C)

Specific gravity 1.72

Soluble in water

Used as a commercial fertiliser

Strong oxidiser; may explode if heated under confinement. When contaminated with oil or other organic materials, it should be considered an explosive capable of detonation by combustion or shock.

Ammonium nitrate —a repeat offender

The massive explosion that killed at least 14 people, mostly firefighters, and injured another 160 in a West Texas fertiliser plant in April 2013 occurred 66 years (almost to the day) after the Texas City disaster—and was almost certainly caused by vast quantities of ammonium nitrate. According to Reuters, “the plant was storing 1350 times the amount of ammonium nitrate that would normally trigger safety oversight by the US Department of Homeland Security”.



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20–21 November 2013
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- insurance professionals
- regulatory authorities and legislators.

For more information and to register your attendance at Fire Australia 2013, visit the conference website at www.fireaustralia.com.au. Alternatively, contact an FPA Australia events team member by calling 1300 731 922 or email events@fpaa.com.au.

HazMat 2014—Achieving a Productive and Resilient Industry

How workplace best practice can promote professional growth
14–15 May 2014

Darebin Arts and Entertainment Centre, Preston, Victoria

The HazMat 2014 theme will explore the means to ensure your business or organisation continues to expand and contribute to a productive and resilient industry. It will address the needs of workplace safety and incident prevention for long-term planning and stability. The aim is to achieve this through presenting case studies and incident analysis and focusing on new and best practice methodologies.

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For more information about HazMat 2014 visit www.fpaa.com.au/hazmat or contact an events team member by calling 1300 731 922 or email events@fpaa.com.au.

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AFAC: www.afac.com.au/events

Bushfire CRC: www.bushfirecrc.com/research/events_2013

Technical advisory groups and special interest groups

By Kevin Burns,
Technical
Administrator,
FPA Australia

TAC/1 Maintenance of fire protection systems and equipment

The Good Practice Guide (GPG-03) on the adoption and use of AS 1851-2012 has now been published. TAC/1 continues to work with the NSW State Committee and FPA Australia Technical Department to develop the Good Practice Guide on NSW Annual Fire Safety Statements.

TAC/2 Fire detection and alarm systems

TAC/2 continues to contribute to FP-002 projects, such as the adoption of ISO 7240-16 *Sound system control and indicating equipment* and the revision of AS 1670.1.

TAC/3/7 Portable and mobile equipment

TAC/3/7 continues to work on the Information Bulletin on extinguisher cylinder date (MM/YY) stamping.

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

The Information Bulletin (IB-05) on sprinkler system component fault monitoring has now been published. TAC/4/8/9 continues to work on the Technical Advisory Note on the demarcation point between the water supply and the fire system in an AS 2118.1-compliant sprinkler system.

TAC/11/22 Special hazards fire protection systems

The ozone depleting substance and synthetic greenhouse gas (ODS & SGG) Good Practice Guide—which is to replace the current ODS & SGG code of practice—is in its final stages of development. Work has also begun on a Reference Document on gaseous fire suppression system actuators similar to the existing Reference Document on cylinder safety (transport) caps.

TAC/17 Emergency planning

The Information Bulletins on evacuation diagrams and consideration of emergency response in alternative solutions are in their final stages of development. TAC/17 continues to work on a document based on NFPA's emergency evacuation planning guide for people with disabilities.

TAC/18 Fire safety and TAC/19 Passive fire protection

The Technical Department has finished migrating the draft document on the specification, installation and maintenance of intumescent fire dampers into the Good Practice Guide template so it is now ready for TAC/18 and TAC/19 to review and endorse. TAC/18 and TAC/19 continue to provide input to the revision of AS 1905.1 as well as conduct their own projects, such as the Good Practice Guide on smoke barriers.

TAC/20 Bushfire safety

The Technical Advisory Note on requirements for draught excluders in buildings constructed in bushfire-prone areas is in its final stages of development. TAC/20 members are also preparing a draft Technical Advisory Note on sarking boards for TAC/20 to review at the October meeting. ■



Standards Australia

By Kevin Burns,
Technical
Administrator,
FPA Australia

FP-002 Fire detection and alarm systems

The revision of the smoke alarm standard (AS 3786) based on ISO 12239:2010 *Smoke alarms using scattered light, transmitted light or ionization* has now been through public comment, which closed on 18 July. FP-002 met in October to resolve the comments received. Work continues on the revision of AS 1670.1 and adoption of ISO 7240-16.

FP-004 Automatic fire sprinkler installations

FP-004 continues to work on the revision of AS 2118.1 *Automatic fire sprinkler systems—General systems*.

FP-008 Fire pumps and tanks

The revision of AS 2941 *Fixed fire protection installations—Pumpset systems* is being finalised so that it can go to FP-008 for approval to be published.

FP-009 Fire hydrant installations

Work on the revision of AS 2419.1 *Fire hydrant installations—System design, installation and commissioning* continues.

FP-011 Special hazards systems

AS 4487 *Condensed aerosol fire extinguishing systems* was published on 17 July.

FP-017 Emergency management procedures

Amendment 1 to AS 3745-2010 *Planning for emergencies in facilities* has now been through public comment, which closed on 11 September. FP-017 will meet shortly to go through the comments.

FP-018 Fire safety

A meeting is yet to be held to resolve the public comments received on the revision of AS 1530.4 *Methods for fire tests on building materials, components and structures—Fire-resistance test of elements of construction*.

FP-019 Passive fire protection

Work on the revision of AS 1905.1 *Components for the protection of openings in fire-resistant walls—Fire-resistant doorsets* continues with several meetings held so far.

FP-020 Construction in bushfire prone areas

A document on the outcomes from the stakeholder forum on the future development of AS 3959-2009 *Construction of buildings in Bushfire Prone Areas* was released. Further discussion by FP-020 has suggested that two project proposals be developed—one to split AS 3959 into construction and assessment and another to develop a new standard for construction of Class 2 to 9 buildings in bushfire-prone areas. ■

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