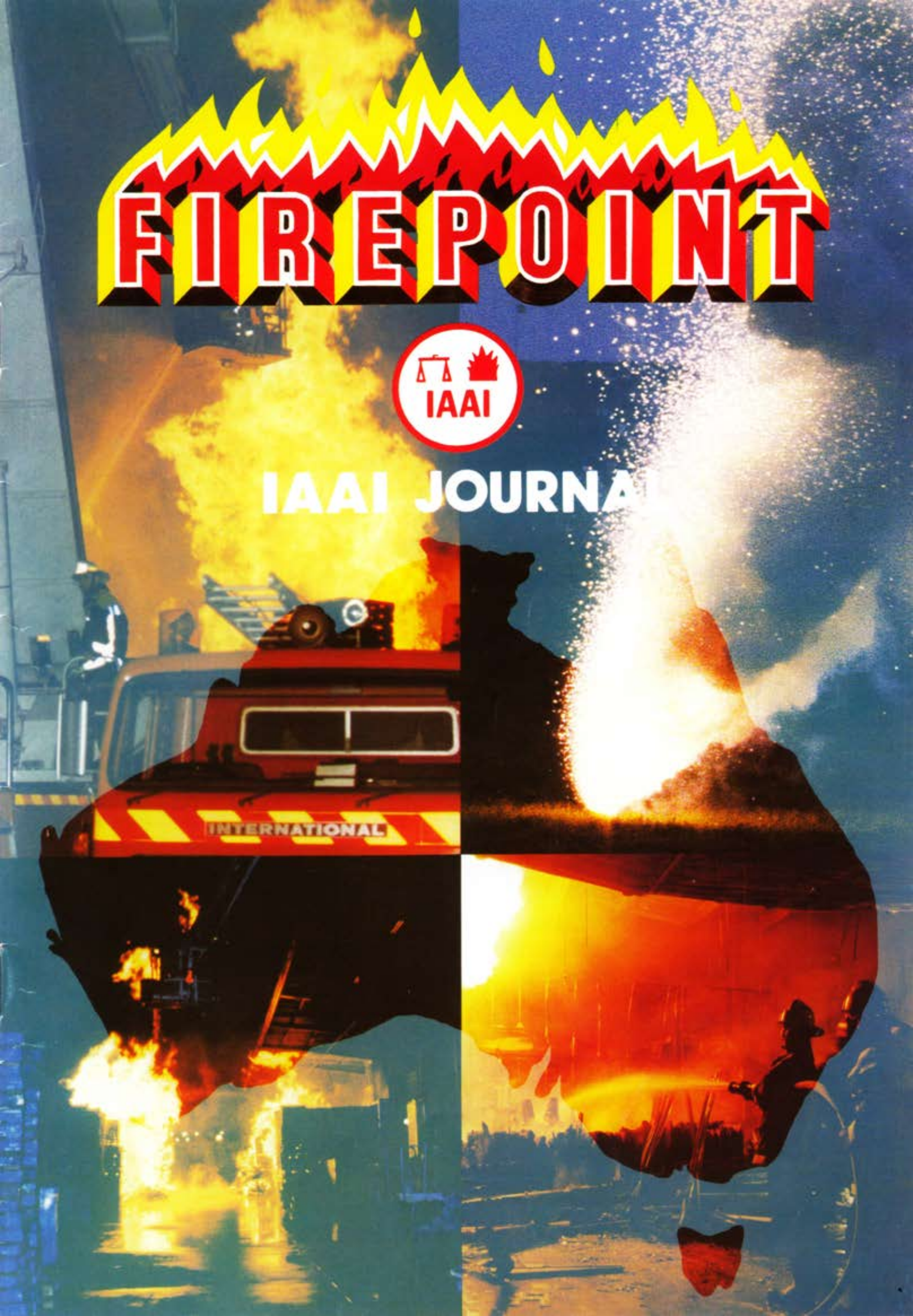
FIREPOINT

IAAI

IAAI JOURNA



March, 2003 Volume 14, No. 1 Issue No. 53

Firepoint

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FIREPOINT: INTERNATIONAL WINNER OF THE IAAI 2001/2002 AWARD FOR THE OUTSTANDING PUBLICATION OF A CHAPTER NEWSLETTER OR MAGAZINE.

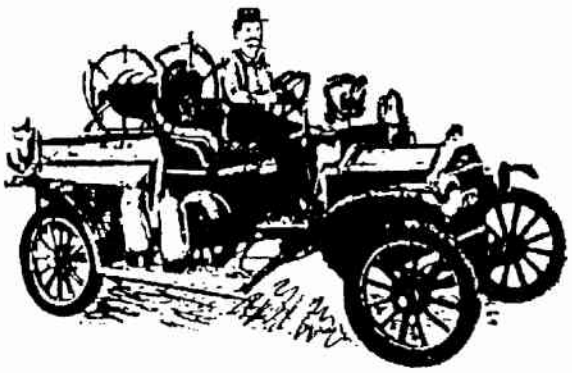
EDITORIAL

At the last IAAI AGM it was resolved that funds be made available to assist education and training in Australia. The assistance was to be by way of travel funds for lecturers to come from America, and share their knowledge and expertise.

David Smith, a past President of the IAAI, will be the first such visitor. He will be giving training sessions in March in New Zealand, New South Wales and Queensland.

If the visit is successful, it is hoped a visitor will be sponsored by the IAAI each year, to visit all of the interested Chapters in Australasia. I hope you have the opportunity to hear David, and provide feedback as to the value of such visits.

Wal Stern



CONTENTS

Vol. 14, No. 1, March, 2003
Issue No. 53

NSW ASSOCIATION OF FIRE INVESTIGATORS INC

(IAAI CHAPTER No.47)
ABN 91 718 947 405

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President: Richard Woods **Secretary:** Norman Hewins

"Providing Fire Investigation Education...the Path to Prevention"

Reminder: Annual Membership of $40 is due. If you have not yet paid your 2003 membership, please forward it to the address shown on page 3 now.

PRESIDENT'S REPORT

I hope all members had a peaceful and happy Christmas and New Year and you were able to take time out with friends and family. I am aware that the severe bushfire season has seen many of our Fire and Police Service personnel involved in working long hours in the second year in a row of major fires in NSW.

Other members have been involved in the follow up of the Bali enquiries and the on-going day-to-day investigation of fires not restricted to any season.

2003 is shaping up to be a major year for the Association in NSW. Our guest speaker in March, Mr David Smith will be providing the Queensland, New South Wales and New Zealand Chapters a series of presentations arranged through the IAAI. Our New South Wales Conference set down for August already has a number of key overseas speakers confirmed as attending with the theme of the Conference being *"Fire and Explosion: The Changing Scene".*

Your Committee is working very hard to see this as being one of the most successful years in providing the latest information to our members in relation to fire and explosion investigations. We feel this is particularly important, given the changing scene across Australian and the World in light of recent terrorist threats and events. I urge all members to make sure they attend the talk by Mr David Smith on March 24 and the 2-day Conference to be held on Thursday the 7th August and Friday the 8th August. (see page 7). Details will be advised in the following edition on how to confirm your attendance at the 2-day Conference.

Our membership continues to grow with a number of new people joining in recent times. We are always on the lookout for new members so please pass on our details to those who you feel may benefit in joining our Association. We are also in the middle of developing our website which is proving to be a major benefit in promoting the Associations activities. I urge you to check it out as it develops by going to www.nswafi.com.au.

Finally I would like to wish all members a safe 2003 and look forward to seeing you at our Seminars throughout this year.

Richard Woods
PRESIDENT

SMOKE PLUME OVERHEAD AS A BUSHFIRE BURNS IN OUTER SYDNEY

TEST BURN AT NSW AFI FIELD DAY AT INGLEBURN

NSW AFI PROGRAM
MARCH - AUGUST 2003

Topic: **Gas Fuel Fires and Explosion Investigations**
Date: **March 24, 2003**
Time: 1.00 pm
Venue: NSW Fire Brigades Training College, Wyndham Street, Alexandria
Speaker: David Smith, Former IAAI World President
Principal, Associated Fire Consultants, Arizona
Details: No Admission Charge (and we'll provide you with a drink, too)

Topic: **Presentation and Discussion of Fire Videos**
Date: **May 1, 2003**
Time: 6.30 pm
Venue: Ryde-Eastwood Leagues Club, 117 Ryedale Road, West Ryde
Convenors: Ross Brogan and Wal Stern
Details: No Admission Charge

Topic: **Bushfires**
Date: **June 26, 2003**
Time: 6.30 pm
Venue: Ryde-Eastwood Leagues Club, 117 Ryedale Road, West Ryde
Speaker: Richard Woods
Details: No Admission Charge

FIRE AND EXPLOSIONS: "THE CHANGING SCENE"
NSW AFI CONFERENCE PROGRAM, AUGUST 2003

Thursday 7 August.

0915	Scene preservation.	John DeHaan
1000	Childers fire.	Det. Bob Campbell. Qld. Police.
1045	Morning tea.	
1115	Kirk Hankins CFI, IAAI (Explosives Expert)	
1200	Bali bombing.	Gareth Williiams AFP
1245	Lunch.	
1345	Scene Photography.	T. Mealing. NSW Police.
1430	Carl Adrian. FBI	
1515	Afternoon Tea	
1535	Explosion investigation. Kirk Hankins.	

Friday 8 August.

0900	Carl Adrian. FBI	
0945	Document examination.	Paul Westwood.
1030	Morning tea.	
1100	John DeHaan.	
1145	Kirk Hankins.	
1230	Lunch	
1330	What evidence is required?	Solicitor/Barrister
1415	Carl Adrian.	
1500	Fatal car fire	John DeHaan

Welcome

Happy New Year and welcome to the first Queensland Chapter update for 2003.

The first quarter of the year is an important time for the Chapter as there are many housekeeping issues such as Membership renewals, Activity Plan and Annual General Meeting that need to be addressed.

Please take a few moments to review the updates on these issues further on in the report.

Our Conference and Education Committee's have been kept very busy over the past six months organising the **"Marine Fire Investigations – Staying Afloat"** two day conference and also the **"Fire & Explosions Investigations"** one day seminar. Both of these events are to be held in March.

Full details are contained further on in this report.

We trust members will support both training initiatives and look forward to seeing you at either or both of these events.

Upcoming Events

"Fire & Explosion Investigations"

Date: Thursday 27th March 2003

Venue: Royal On The Park, Bris.

This one day training seminar will be presented by David M. Smith, CFI, President, Associated Fire Consultants Inc, Tucson, Arizona USA.

David's main areas of expertise are within the Origin and Cause domain with sepcialisation in arson motivations, explosions and fuel gas matters. David has taught fire and explosion investigation courses to over 100 different fire, police and insurance associations and government agencies across the US and internationally.

Presentations include:

Manufactured Home Fire Investigation.

Manufacturing techniques, construction details and spatial arrangements are discussed in relation to fire growth and spread issues. The site built home is contrasted with the early and contemporary manufactured home in relation to fire and combustibility issues.

A full scale fire test involving the burning of a furnished manufactured home, monitored by 200 thermocouples and two radiometers, is shown and discussed.

Fuel Gas Fire & Explosion Investigation

Methane, Propane and Butane delivery systems are discussed with emphasis on fuel gas properties and system failure modes. Investigative techniques are demonstrated through actual case histories and a $3,000,000 industrial fire and explosion originally opined to be a fuel gas leak is highlighted.

The I.A.A.I. have sponsored David's trip to Australia and we trust members will acknowledge and support this initiative.

Registration brochures have been distributed via e-mail. If you have not received a copy and are interested in attending, please contact Julianne on (07) 3822 4700 or email admin_officer@qafi.asn.au to obtain your copy.

- - - -

"Marine Fire Investigation – Staying Afloat"

Date: Friday 28th & Saturday 29th March 2003

Venue: Royal On The Park, Bris.

The conference offers a challenging program encompassing the theme ***Marine Fire Investigation – Staying Afloat***. The program is relevant to fire investigators, insurance personnel, maritime specialists, risk managers, emergency services personnel and other relevant government departments.

The business program includes case studies and will also be complemented by a boat cruise and inspections.

A brief overview of the business program follows;

- ***From the sublime to the ridiculous: Aspects of marine fire investigation including a case study on Reef Link II.*** **Terry Casey** BSC (Metallurgy) B Tech (Mech. Eng.) Chartered Engineer, Forensic Services Australia – Queensland
- ***Marine Fires and Fire Investigation on the Water.*** **Ross Brogan**, Inspector NSW Fire Brigade Fire Investigation and Research Unit
- ***Investigations into Pleasure Craft fires.*** **Ted Beitz**, Fire Investigation Coordinator, Queensland Fire & Rescue Service
- ***Fire, and the Odd World of Marine Hull & Liability Insurance.*** **Michael Fisher**, Partner, Thynne & Macartney.
- ***Fire Investigation in the Australian Shipping Scene.*** **Peter Foley**, Senior Transport Safety Investigator, Marine Investigation Unit, Australian Transport Safety Bureau, Department of Transport & Regional Services
- ***Marine Fires Caused by Self Heating.*** **Prof. Brian Gray**, B.F. Gray Combustion and Scientific Consultants
- ***Project X – Luxury Yacht Fire – Oceanfast Boats, Henderson, WA, 29 Feb 2000 – A Case Study.*** **Phill Cribb**, Fire Investigation and Analysis Unit, Fire & Emergency Services Authority of WA and **Maurie Tong**, QED Group Pty Ltd
- ***NFPA 921: The US Perspective & the UK, Canadian & Australian Experiences.*** **David M. Smith**, Associated Fire Consultants Inc., Tucson, Arizona.
- ***Queensland Maritime Museum*** - Boat inspections including *H.M.A.S. Diamantina*
- Board "The Lady Brisbane" for lunch followed by boat inspection.

The registration fee for members (includes all IAAI Chapter members) is only $350.00 for the two days. You can also attend the conference as a day delegate only, or register to attend the conference dinner only.

Conference Registration brochures have been distributed via e-mail. If you have not received a copy and are interested in attending, please contact Julianne on (07) 3822 4700 or email admin_officer@qafi.asn.au to obtain your copy.

Annual General Meeting

The QAFI Annual General Meeting will be held at the conclusion of Day 1 of the Conference.

Date: Friday 28th March 2003

Time: 5.35pm to 6.00pm

Venue: Royal On The Park, Bris.

Full details including Committee Nomination Forms will be distributed shortly.

Membership

Membership renewal invoices for the period 1 January 2003 to 31 December 2003 have been issued and are now due for payment.

Reminder invoices will be issued to those with outstanding fees.

You must be a financial member to take advantage of the membership registration fees for the Conference and one day training seminar.

It would be appreciated if members who have not as yet returned the "membership contact details – update" could do so as soon as possible.

2003 QAFI Sponsors

On behalf of the QAFI Executive Committee and Members, we wish to sincerely thank the following organizations for agreeing to sponsor the Chapter in 2003.

Supporting Sponsors:

DEACONS (Lawyers)

KENNEDY'S (FORENSIC)

Their support is invaluable and ensures that the registration fees to attend training initiatives are kept to a minimum.

Marine Fire Investigation "Staying Afloat"

QAFI – MAJOR TRAINING PROJECT 2003

Royal on the Park Hotel
Alice Street (cnr Albert Street), Brisbane

28 & 29 March 2003

DRAFT PROGRAM

(as at 5 February 2003)

Friday, 28 March 2003

8.30am - 9.00am	Registration
9.00am – 9.10am	Welcome - **Kate Ridgway** (President, Queensland Association of Fire Investigators Inc.)
9.10am – 9.30am	Official Opening - **Arthur Diack** (Director of Maritime Services, Queensland Transport)
9.30am – 10.30am	**Terry Casey** (Forensic Services Australia) **"From the sub-lime to the ridiculous: Aspects of marine fire investigation including a case on *Reef Link II*"**
10.30am - 11.00am	Morning Tea
11.00am – 11.45am	**Ross Brogan** (Inspector, NSW Fire Brigade, Fire Investigation and Research Unit) **" Marine Fires and Fire Investigation on the Water"**
11.45am- 12.30pm	**Ted Beitz-** (Fire Investigation Coordinator, Queensland Fire & Rescue Service) **"Investigations into pleasure craft fires"**
12.30pm – 1.00pm	Depart Royal on the Park Walk to Customs House
1.00pm – 2.30pm	Boat Cruise on the "*The Lady Brisbane*"
1.00pm – 2.00pm	Lunch on board
2.00pm – 2.30pm	Return trip
	Boat Inspection – "*The Lady Brisbane*"2.30pm
	Drop off - South Brisbane (Queensland Maritime Museum)
2.30 – 3.30pm	Boat inspection – *H. M.A.S. Diamantina* Tour – Queensland Maritime Museum
3.30pm	Depart Maritime Museum Return to Royal on the Park via the Goodwill Bridge

4.00pm	Afternoon tea
4.30pm - 5.30pm	**Michael Fisher** (Partner, Thynne & Macartney) **"Maritime Law: The Insurance Perspective" (Draft only)**
5.30pm - 6.30pm	Free time
6.30pm - 10.30pm	Conference Dinner/AGM Entertainment by "Sons of Germaine Greer"

Saturday, 29 March 2003

8.30am - 9.00am	Registration (Day 2 delegates only)
9.00am	Welcome (**Kate Ridgway**)
9.10am - 10.00am	**Peter Foley** (Senior Transport Safety Investigator, Marine Investigation Unit, Australian Transport Safety Bureau, Department of Transport & Regional Services) **"Fire Investigation in the Australian Shipping Scene"** (Part 1)
10.00am - 10.30am	Morning Tea
10.30am - 11.30am	**Brian Gray** (B. F. Gray Combustion and Scientific Consultants) **"Marine Fires Caused by Self Heating"**
11.30am - 12.30 pm	**Phill Cribb** (Fire Investigation and Analysis Unit, Fire and Emergency Services Authority of Western Australia) **&** **Maurie Tong** (QED Group Pty Ltd) **"Project X - Luxury Yacht Fire - Oceanfast Boats, Henderson, WA, 29 February 2000: A Case Study"**
12.30pm - 1.30pm	Lunch
1.30pm - 3.00pm	**David M. Smith** (Associated Fire Consultants, Incorporated) **"NFPA 921: The US Perspective & the UK, Canadian & Australian Experiences" (Draft only)**
3.00pm - 4.00pm	**Peter Foley** **"Fire Investigation in the Australian Shipping Scene" (Part II)** **Case studies:** *Nego Kim* *Spirit of Tasmania* *Aurora Australis*
4.00pm - 5.00pm	Fellowship
5.00pm	Conference Close (Kate Ridgway)

"Fire & Explosion Investigations"

TRAINING SEMINAR
THURSDAY 27th MARCH 2003

Royal On The Park Hotel, Cnr. Alice & Albert Streets, Brisbane

David Smith's attendance sponsored by

I.A.A.I. International Association of Arson Investigators

www.firearson.com

Hosted by

Queensland Association of Fire Investigators Inc.

PO Box 5173, Alexandra Hills Q 4161
Tel **(07) 3822 4700** – Fax (07) 3822 3900

Email: admin_officer@qafi.asn.au
www.qafi.asn.au

Presented by

David M. Smith, CFI
President, Associated Fire Consultants Inc.
Tucson, Arizona U.S.A. - www.assocfire.com

Chapter Sponsors

Deacons

KENNEDY'S (Forensic)
Independent Forensic Consultants

TRAINING PROGRAM – Thursday 27 March 2003

0930	*Registration* – **Royal On the Park** – Avro Room foyer *Coffee, Tea and Morning Tea on arrival*
1000	*Welcome* by **Kate Ridgway**, President of the QAFI
1010	*Official Opening* by **Ross Brogan**, IAAI Australian Chapter Liaison
1030	*Manufactured Home Fire Investigation.* Manufacturing techniques, construction details and spatial arrangements are discussed in relation to fire growth and spread issues. The site built home is contrasted with the early and contemporary manufactured home in relation to fire and combustibility issues. A full scale fire test involving the burning of a furnished manufactured home, monitored by 200 thermocouples and two radiometers, is shown and discussed.
1230	Lunch
1330	*Fuel Gas Fire & Explosion Investigation (Part 1)* Methane, Propane and Butane delivery systems are discussed with emphasis on fuel gas properties and system failure modes. Investigative techniques are demonstrated through actual case histories and a $3,000,000 industrial fire and explosion originally opined to be a fuel gas leak is highlighted.
1500	Afternoon Tea
1530	*Fuel Gas Fire & Explosion Investigation (Part 2).*
1645	**Close** – Kate Ridgway

David founded Associated Fire Consultants Inc. (Arizona, US) in 1981. His career in fire investigation began in 1971 as the first member of the Arson and Bomb Unit (later the Arson and Homicide Unit) of the Tucson Police Department, where his duties included arson and explosion investigation as well as rendering safe explosive devices. Since 1981 he has conducted fire and explosion investigations for the insurance industry, publicly traded corporations and government agencies throughout the US, Canada and Mexico.

David's main areas of specialisation are arson motivations, explosions and fuel gas matters. He has been qualified as an expert witness numerous times, having rendered expert testimony in federal and state courts on over 160 occasions. David has taught fire and explosion investigation courses to over 100 different fire, police and insurance associations and government agencies across the US and internationally. He has also developed and taught courses targeting civil and criminal trial attorneys and prosecutors. His work in the field has been recognised by his peers through a number of awards including the Bureau of Alcohol, Tobacco and Firearms Award of Appreciation.

David has published articles on diverse topics. He has been a member of the National Fire Protection Association Fire Investigations Committee (responsible for NFPA 921) since before the publication of the 1992 Edition and is the representative of the International Fire Service Training Association to that committee. In that role he has contributed his expertise to the publication of several instructional manuals on fire investigation that are currently utilised by fire departments and law enforcement agencies throughout the world. As a member of the Technical Working Group on Fire and Explosions he has assisted the US Department of Justice and the National Centre for Forensic Science in their publication of Research Reports for public safety personnel regarding fire and arson scene evidence.

Life Membership

For those who have visited the website you will have read that two of the committee members of the Chapter in John Kelleher and Terry McCabe have been awarded Life membership. Both have been long standing members of the committee John since the initial chapter meetings in 1990, holding the position of 2nd Vice president at the inaugural meeting in March 1992 and still a committee member and Terry who was on the committee from 1995 – 2002 and still supports the committee. Congratulations to both.

Merchandising

Just a reminder that the Chapter has stocks of the merchandising displayed in the last "Firepoint" and is available to members through the committee.

Polo shirts $25.00, Badges $5.00, Caps $12.00, Letter Openers $8.00, Coasters $ 5.00, Medallions $10.00 and Key Rings $2.00/$4.00

Website

Check out the website and see the photo's of Terry and John being presented with their certificates. and trophies by Alex. As we get back to normal more work on the website site is expected. Remember any comments or suggestions are welcome.

Fires – North East Victoria

The committee has suspended any training at the present due to the commitment of its members to the fires.

For those outside Victoria, our membership from the Country Fire Authority and MFESB have been heavily committed to the support of the Department of Sustainability and Environment (DSE) or the old DNRE in the fighting and confining of the fires in the North East of Victoria originally started by lightning strikes around the 8th January 2003.

As of this date most of the fires have combined into one large fire with no foreseeable end in sight. The fire has been effected by the long term weather conditions and the fuel and ground have dried out to produce some unexpected fire behaviour.

It is common that fire containment lines have been set and burning off operations have been undertaken within plenty of time to then have the fire spotting over the control lines, some reported up to 3-6 kms. The terrain and access to the fires has limited ground operations and smoke has hampered air operations.

Both CFA career & volunteers and MFESB firefighters have been on the fire lines, mopping up and back burning and asset protection duties. There were also 7 MFESB appliances placed in CFA staff stations to release CFA staff and appliances to the North East. In all this has been a very busy time for the fire services of Victoria and is set to continue for some time.

(Editor's Note: The thoughts of all our members must surely have been with those involved with this year's ferocious fires in Victoria, in the ACT, and in southern NSW. We are no doubt all hoping for a period of soaking rain).

Organic Potting Soil Considered Source of Spontaneous Ignition.

By Floyd Keller
Pierce County Deputy Fire Marshal
(from Washington State Chapter Newsletter)

On 19/8/01 a fire occurred in a 2800 square feet, single family residence in Pierce County, Washington State, USA. It was a one storey, wooden frame, L shaped home with board and batt siding, and a concrete tile roof. The home faces north, and the deck faces west.

The fire started on the southwest corner of the deck, on a raised plant stand next to the siding, and bedroom windows. The family stated that they left the residence about 1400 hours for a weekend at a vacation cabin.

The fire was reported at 1851 hours. A neighbour saw the heavy smoke from approximately one block away. He found the fire burning a corner of the deck and a plant stand.

The fire was also in the process of breaking the west bedroom window. After it broke the window, it entered the bedroom and extended into the attic through the bird blocking. The fire then penetrated the attic area, which caused the house to burn from the top down.

The investigation revealed a broken flowerpot, potting soil, and deep-seated burning into the deck. There was also a V pattern that extended up from the area of origin.

A hydrocarbon detector was used with a layering method, which produced overall negative results. The soil samples were also tested, and the results were once again negative.

There was only one witness to this fire. During his interview, he stated that he attempted to extinguish the fire with a garden hose. When the homeowners were interviewed, they stated that the only activities on the deck, were the watering of plants.

The flowerpot found in the area of origin had not been watered, and it contained potting soil from the previous year. The pot had also been lined with aluminium foil, which was used to hold the soil in the pot.

Conclusion

A briefing in the office was held, and during that briefing, the Fire Marshall mentioned that there was an article he had seen on the Internet regarding organic potting soil fires. After searching the Internet, the following information was obtained: In 1998 an apartment fire occurred in Doylestown, PA. The cause of the fire was organic potting soil. The brand is PROTERRA, which is made by the Schultz Company, St. Louis, Missouri. The WALMART Corporation distributes it.

There have been several documented fires where the cause has been the same. The soil mix is also known as Sunshine Mix Pro, which contains peat moss, pearlite, and dolomite lime for pH balancing, and it also possibly contains copper or aluminium flakes.

The temperature had been in the 80 degree Fahrenheit range for some time prior to and during the day of the fire, which would contribute to the unusual heating of the elements in the potting soil mixture.

A search of the Pierce County fire records revealed that this same unusual spontaneous, agricultural heating had been the cause of other fires. Based on these findings, the fire was probably more than not, caused by spontaneous heating of the agricultural products.

(Fire scientist Vyto Babrauskas reported that the medium is known for ignition, but such small quantities were a surprise).

Application for Membership

Association of Fire Investigators

(A Chapter of the International Association of Arson Investigators)

I hereby apply for membership of the Association of Fire Investigators in the State of..... in accordance with its constitution and by-laws, and agree to be bound thereby.

I attach the amount of $..... in payment of annual dues.

---

1. Name in Full
2. Address for Mail
3. Position Held (e.g. police or fire brigade officer, lawyer, investigator, assessor)
4. Company/Agency
5. Telephone
6. Mobile
7. Fax No.
8. E-mail Address
9. Signature
10. Name of Member Recommending you
11. Telephone No. of Member
12. Address or E-mail No. of Member
13. Signature of Recommending Member

Give your completed form with your payment to any committee member of the Association, or mail it to the appropriate postal address, as shown on page 3. This page lists names, numbers and web pages if you have any inquiries.

Australian IAAI Chapters Liaison Training Report

Chapter No. 47 – New South Wales
Chapter No. 58 – Victoria
Chapter No. 59 – Queensland

On October 18th the NSW Chapter conducted a one day seminar in Canberra. The seminar was held outside Sydney to decentralise training and provide training to members and other interested parties outside the Sydney Metropolitan area. In excess of fifty persons attended on the day. There were in excess of twenty Australian Federal Police Officers who were to attend, but were called away to attend the Bali bombing crisis several days prior. I acted as the MC for the day.

There were seven speakers during the day and the following topics were presented:

1. State Coroners' office – Roles and responsibilities
2. ACT Govt. Prosecutors office – Court procedures and Brief presentation
3. Fire & Explosion investigation (myself)
4. Aviation crash investigation – Australian Transport Safety Bureau
5. Marine Incident fire investigation - Australian Transport Safety Bureau
6. Rural/Wildfire investigation
7. Insurance claims investigation

A summary of the days' proceedings was presented by the MC and question time followed, with enthusiastic participation. The organising committee considered the day a complete success, that resulted in a majority of local participants in fire investigation being brought together; with the team concept emphasised.

The Victoria Chapter conducted a two day conference, in Melbourne, on Thursday 24th and Friday 25th October, with the theme of "Arson: Who? How? Why?". In excess of seventy delegates attended over the two days. The following topics were covered by the relevant speakers:

- Psychologist R. Doley – "The secret life of arsonists" – "Firefighter Arson"- "Pyromania"
- Serial arsonists, Victoria Police (not the Police, the topic)
- Forensic evidence, Botanical evidence – Victorian Forensic Science centre
- Victorian fire investigation policy, Western Australia arson mitigation program
- Scene safety, Steve Walkley, Tasmania fire service
- Investigation of NSW bushfires, Richard Woods Rural Fire Service
- Victorian serial firesetters, Vic. Police and IAAI Chapter members

Between November 26 to 28, 2002, I attended the Australian Federal Police (AFP) Bomb Data Centre conference on bombs/bombings/terrorism, held in Canberra. Approx. 250 participants took part in the conference, including members of the FBI and BATF [Arson/Explosives Repository Washington], British Armed Forces Ordinance teams, Hong Kong Police, Singapore Police/Armed services.

The conference concentrated on international terrorism and awareness of counter-terrorism measures; as well as a full briefing on the Bali Terrorist bombing incident. I presented a short version of the "IAAI – First Responder Terrorism Awareness Program" to the

conference and provided the AFP with copies of the CD and video tapes of the full program, for forwarding to interested parties. As a result of this conference I have received an invitation to attend the newly opened BATF Fire Research facility, in Washington, and will do so on my way to the April IAAI AGM/Conference in Reno.

An offer was received from President Lloyd Johnson, in December 2002, to send David Smith to Australia to provide training, in line with the negotiations undertaken at the 2002 AGM/Conference in Milwaukee.

At this stage David will attend the New Zealand IAAI Chapter conference in March, lecture in Sydney and then attend the Queensland Chapter conference the next week; speaking on fuel gas fires/explosion investigation, mobile trailer fires and NFPA 921. Negotiations are well under way and we are looking forward to receiving the promised training from the IAAI.

I have been appointed as an Adjunct Lecturer, in the subject of fire investigation/fires, with the Charles Sturt University School of Policing Studies. A project is current, through Director Kirk Hankins, myself and Professor Tracey Green, to commence a partnership between the IAAI and Charles Sturt University with the Graduate Certificate and Graduate Diploma in Fire Investigation studies. Both of these courses co-ordinate with a Master of Arts [Fire Investigation] and are all distance education-based.

This has been a summary of training projects undertaken throughout Australia during the second half of 2002.

Ross Brogan

INTERNATIONAL NEWS

IAAI President Lloyd Johnson wishes to remind all IAAI members that the AGM in Sparks/Reno, Nevada is fast approaching. Please make plans to attend the AGM and send your registrations as soon as possible.

First Vice-president David Sneed and President Johnson also wish to encourage all members of the International to become involved with their great association. Please consider joining one of the committees in which you have an interest and are willing to volunteer your time. You may contact 1st VP Sneed at dsneed@wwufc.com to be considered for a committee. Please do so quickly as future committees are being formed now.

This is almost entirely a volunteer organization. As you are aware, the Officers and Directors are not compensated for their time and expertise. Only the Executive Director, Office Manager, and the staff are paid employees. We urge you to further our efforts with your ideas and talents.

In news around the world, the United Kingdom is formally establishing a Chapter on Jan. 31st, 2003. Liaison and former IAAI Director Jamie Novak, after attending the formation meeting will travel to Sweden to meet with representatives from Denmark in an effort to form a Danish chapter.

The Training and Education Committee is meeting in Atlanta on Feb. 1st. to plan upcoming training seminars and training at a distance.

Working Together to Get the Right Answers. Part 2.

A paper presented in March, 2002 by Jim Munday to the Queensland AFI Conference.

(In this issue we present the second section of the paper. The first section was published in the previous issue of "Firepoint".)

Moving onto the third part of this presentation, extrapolating from ignition sources in general to think about commercial premises in particular, we must realise that in most commercial premises there is the same range of ignition sources as in most domestic premises. This means that there is a very wide range of potential ignition sources, for example lighting, heating, electrics, all those potential ignition sources which we have already discussed.

The main difference is that in a commercial premises a simple ignition source can produce a scale and effects of damage which are much greater.

In the first example shown, there had been a heater failure which caused the ignition of materials nearby and led to the almost complete destruction of a paint and pigment factory. In a domestic environment it would probably be fairly easy to come back to this heater as the source of the ignition. However, due simply to the scale of disruption and the problems associated with the factory collapse, it was actually a much more difficult task in this case to identify the ignition source as being exactly the same thing that could occur in a domestic house, i.e. a fault with a thermostat on a convector heater .

Similarly in commercial premises we can have an increased risk of ignition from everyday sources due to occupancy factors. Once again this can lead to a disproportionate problem, in terms of the scale or the extent of the damage, whereas the ignition source is really one that we might expect anyway.

However, the frequency or risk of that ignition source is multiplied by the occupancy of the premises. A common example of this is smoking; for example in a house, there may be a small number of people who smoke and they may be very aware of the risks. However, in a commercial premises there may be an area set aside where a very large number of people smoke and perhaps they are not quite so aware of the risk because they are outside their home environment.

In the second example, the problem was in a warehouse where there was a strict no smoking policy (which, to be fair, the employees largely adhered to) but there was a canteen set aside at one end of the warehouse where they were allowed to smoke. Unfortunately the corridor between the main warehouse and the canteen area was also used for storage, including racked goods in cardboard cartons, and of course the inevitable happened. Many of the staff would finish their cigarettes at the very end of their break, or still be smoking the last part of the cigarette when the break ended, and would then flick away the lighted cigarette as they walked from the canteen back into the warehouse through the area of the racked goods. That is simply an example of an occupancy factor bearing on a "normal" everyday ignition source.

Of course, another problem with commercial premises is that there are a number of risks which do not appear in domestic premises and which are solely due to the contents, processes and so on that go on there. For example, fires that occur in workshops where the cause of the fire (or more accurately the ignition source of that fire) is something which would be peculiar to what goes on in that workshop. It could perhaps be welding, or a chemical process going on in there.

In the third example shown, which involved electroplating, I was surprised to learn when I was researching this paper that over the last decade in the UK there has been an average of 5 major fires a year in plating premises, each of which has averaged out at £600 000 loss (around AU$ 2 million), and I was amazed to find that they are almost always due to the heated solutions in the tanks boiling dry and the elements igniting the plastic tanks.

The tanks have to be plastic, because of course corrosive chemicals are in use, and all it requires to start a fire is a simple fault or problem with a float switch. As the solutions are kept hot, they will evaporate and then the electric elements can overheat, causing the plastic tank to melt and ignite. Of course this risk is specific to plating workshops but there are many more industrial examples of similar problems.

I was asked to look at the past, present and future in terms of ignition sources in commercial premises. This gave me pause for thought because I was not especially familiar with some of the historical perspective.

I looked back at the high risk factors, including some of the industrial processes, and found that a lot of the ignition sources in older factories were due to either mechanical heating (e.g. in large machinery running on bearings or belts that overheated) or high temperature processes. Examples of these include steel rolling etc., where the hot products are quite capable of igniting any combustible material which they might come into contact with. Many of these "historical" ignition sources tend to be associated with what is generally known as heavy manufacturing industry.

For some years these industries have been in decline in much of Europe and even the USA; I am not aware of the Australian situation but obviously these sorts of ignition source risks will vary with the type of industry that is present. Looking at developing countries, where the multinationals are concentrating their heavy production, we might find a very increased risk of these types of ignition sources.

Chemical processes, historically, were another ignition problem. Only a few years ago around the world there were many problems with runaway reactions, plant failures and so on. Among the factors which we have to consider in terms of ignition sources there are temperature and pressure issues.

What might not constitute an ignition source under normal ambient temperatures may well be a viable ignition source for materials which are already at elevated temperatures or at high pressure. As investigators, we need to consider this very carefully and think about the physical chemistry involved in these processes; once again, we are talking about energy transfer rate.

The best advice for the investigator is often to go and talk to the people who run the processes and know how they work, to ask them what the effects of these materials, temperatures and pressures are.

Again, smoking-related ignition sources feature because historically there were very high levels of smoking among workforces in general, and in days gone by there was no real restriction as we have now with so many no-smoking work places. There was therefore much greater disposal of cigarettes, lighted matches and so on almost haphazardly around working areas.

It is perhaps interesting that more fires were not attributed to such causes and I often wonder whether perhaps we are now a little too eager to blame lighted cigarettes for starting fires. Nonetheless, there is evidence that a number of fires did start in this way, many of which were also associated with poor housekeeping.

Workplace heating (as distinct from process heating) was also implicated in many fires. If we go back a long way, perhaps the Victorian or Edwardian periods, many offices and commercial premises were heated by open fires, or coal- or wood-fired stoves. This would be rare now, even around northern Europe, the USA and

Canada, but I am sure it still occurs in some places. High pressure steam was a very common traditional heating method in the UK and North America; the advantage was that it used the same steam which was being produced to drive the machinery to heat the premises as well.

Of course, the problem with high pressure steam is that it can be at temperatures well above the boiling point of water and the surface temperature of the pipes can therefore be high enough to ignite stored materials. Hot air blowers are a somewhat more modern form of work space heating; again, over the last 30 - 40 years there have been many different varieties of hot air blowers, both kerosene- and gas-fuelled; these can act as ignition sources when poorly stacked or stored goods come too close to them or into contact with the casings.

The problem of hot surfaces and other ignition sources coming into contact with combustible material brings us into housekeeping issues. At the same time I would like to consider maintenance problems. "Housekeeping" is a general term often used to encompass how loose materials are handled, how waste is gathered and stored and so on.

Although this is really more about fuels than ignition sources, it is significant because if the housekeeping in relation to potential fuels is poor, it may well indicate that the maintenance in terms of potential ignition sources is also poor. This may emphasise the need to look around for poor electrical maintenance, poor quality wiring or fittings etc., or lighting and heating systems which are poorly installed and have exposed hot surfaces.

The current situation also has a number of commonly encountered ignition scenarios. In my view, there is a particular problem at present in one area which is that of illicit smoking. As the emphasis on non-smoking workplaces has grown, although the number of smokers has diminished it has not fallen at the same rate that the number of places in which people can smoke has.

The result is that there is much more illicit smoking going on in work places and commercial environments. This in itself means that it actually leads to a higher risk of fire than before, because people try to conceal the cigarettes, the matches, lighters and so on which are the ignition sources. They are more likely to toss them in the corner when management come around, or find places to hide when they are smoking. These "hidey-holes" are often exactly the same places in which ad-hoc storage is going on or where rubbish accumulates, so clearly smoking there constitutes a major risk.

The increased use of heating/ventilation/air conditioning (HVAC) systems is another area of concern. It is tremendously useful if the structures involved are new buildings; they are often purpose built and the systems have been designed for them. However, what tends to happen (particularly in Europe where we have a large number of older buildings in use) is that new HVAC systems are installed in buildings that were never designed to take them.

That sometimes means that the systems which are installed are not appropriate to the purpose, or perhaps they are routed in ways that bring them in contact with combustible elements within the building, when in a more modern building the designer would not have chosen that option.

The demands on electrical systems are continuously increasing. These include both high-power demands such as motors, heaters etc. and also more electronic equipment. While the electronic equipment itself does not tend to have a high current demand (and obviously you can use an awful lot of computers in a building before you have the equivalent of one electric heater), the problem is that the building wiring system and especially the number of socket outlets may not be what is required for the vastly increased amount of electrical and electronic apparatus.

This means that the users of a building tend to improvise. It may be that a company does not have enough money or enough downtime

available to allow for a full rewire, under which circumstances it may be they just tend to use more and more multiway connectors, extension leads and so on, which creates an additional ignition risk.

In addition, I would like to consider the effects of what is going on in a lot of industries, where downskilling of the work force and outsourcing of maintenance and cleaning, in my experience, can lead to a lack of interest in the work and a lack of pride in the work done, which in turn can lead to a job less well done.

The effect is to return to the problems mentioned in a historical context, with maintenance being poorly done or housekeeping being left undone. This can lead to both an increase in available ignition sources and an abundance of fuel in association with them.

This area may well be one for us to think of for the future. In fire prevention terms it may be worth promoting the message that, although down-skilling and outsourcing might appear financially attractive in the short term for a company, is this one area in which it might not be to the company's best advantage in the long term?

Continuing to think about the current commercial situation in terms of ignition sources, one area which has caused great concern recently is the increasing consumption around the world, and particularly in developed countries, of ready prepared foods. Clearly if a business premises is preparing food rather than the individual preparing it at home, the same cooking hazards effectively move from the domestic kitchen to the commercial kitchen. The problem is that the cooking there is on an industrial scale. As a result, if something goes wrong, the results can be catastrophic. In the example shown, involving a motorway service station kitchen, as a result of a grease (fat) fire an entire roof has been lost and a complete building wrecked, causing about £2m (AU$ 6m) of damage.

Although the example given is more of a "fast-food" outlet, this type of fire is often associated with actual food preparation factories, that is places where lots of different types of food are prepared for distribution. As well as the increased ignition risk in places like this, they are also commonly associated with "sandwich panel" or insulated panel type construction, which as we know gives a greatly increased risk of fire spread and development. Here then is a problem here for the fire protection engineers to consider; this is where we get back to the theme of working together - the investigators have to feed this sort of information back into the system so that the fire protection engineers know what the real issues are.

Continuing to consider the current situation, of course the one that everybody knows about is the massive increase in deliberate fires all around the developed world. The worldwide arson problem is well known. There is generally a very straightforward ignition source, almost always a flame, but the underlying cause can be more complex than just what action brought the flame and the ignition source together. It may be that investigators have to start thinking about looking for these underlying causes, looking for the factors such as social problems and so on that are leading to these ignition sequences; perhaps thinking about the motivation, so as to inform the prevention and intervention strategies more accurately.

The example of an arson shown, although not actually a commercial premises, was chosen just to demonstrate that quite literally no building is sacred any more when it comes to deliberate fires.

Where do we go from here? I was asked to think about the future trends for ignition sources. Firstly, I can only see the demands on electrical systems continuing to increase and, as previously mentioned, many businesses are in existing premises where they cannot afford the cost or downtime required for a full rewire, so they "make do" by using more extensions, by adding on more spurs to an existing

system, by using multigang outlets, until problems arise.

I think there is likely to be a continued increase in industrial-scale cooking. The consumption of ready prepared food is steadily increasing in all the developed countries and it all has to be cooked somewhere. In my view, this is going to be a major growth area in terms of fires and this is one of the ignition sources that we ought to think about as being a real problem for the future.

Lighting technology is an area of rapid change. We are all used to commercial buildings with fluorescent or traditional tungsten lights with tungsten lights, or perhaps with quartz halogen external flood lighting. Low voltage lighting systems are now becoming increasingly common, and generally involve transformers. Again, on a domestic scale these may be small transformers tucked away in ceiling voids, but on a commercial or industrial scale these transformers can be quite substantial bits of equipment. They often run hot and are frequently inappropriately sited in voids and concealed spaces, especially in old buildings which have been modified or refurbished.

Could we possibly see a decrease in deliberate fires? We would certainly hope so if our investigations are effective and, through them, we help to have a deterrent effect on deliberate fire setting. It would be good to see a decrease in deliberate fires and perhaps we will, because that's one of things many of us are working towards. However, I suspect this is rather a long-term goal and dependent on many other social factors.

In terms of social factors, the potential problems raised by downskilling and outsourcing have already been raised. It is clear that the trend is for an increased use of such labour forces; in fact we can see it already, with the use of less skilled workforces for basic process work. This is a growing problem for fire safety, in that less skilled or more transient workers may not recognise incipient problems in the way that a skilled and committed workforce traditionally did. This is another issue for the whole fire safety community to consider.

To summarise, I think we need to realise that whatever fire safety strategies are adopted are really only as good as the information that we, the investigators, are putting back into them. The quality is governed by the underpinning information; we need to have the right answers to get the right outcomes.

If we wrongly identify the ignition sources, society's resources will be targeted wrongly; there will be little or no noticeable reduction in fire incidents, legislation will be wrongly targeted and possibly even counter-productive.

Finally I would say to all investigators that guessing is no longer good enough. It is no longer acceptable to walk into any fire scene and, as John DeHaan says, "kick some ash".

Let us determine origin and cause accurately, with a proper methodology, and identify the ignition source correctly in each case. This requires a clear understanding of the fundamental scientific principles involved and the ability to apply that knowledge and understanding consistently.

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