



# The Catalyst

The Official Newsletter of JOIFF

December 2007

## FROM THE EDITORS

Season's greetings and welcome to the fourth edition of The Catalyst for 2007. As always, there is a varied mix of articles in this edition including our regular features on new members, detail for our members in the Members Section and detail on JOIFF accredited Training.

We would like to thank our advertisers and our sponsors for their support throughout 2007 – without them we would not be able to function. We encourage our Readers to circulate The Catalyst amongst their colleagues and interested parties and we welcome any comments.

Our policy is to bring you high quality articles on relevant technical issues and current and new developments and other happenings in the area of Emergency Services Management. In addition to The Catalyst, information relevant to Emergency Services Management is also posted on the JOIFF website.

We look forward to your continuing support and wish all our Readers, contributors of articles, advertisers and sponsors a very Happy, Healthy and Safe Christmas and New Year.

## ABOUT JOIFF

Membership of JOIFF, the Organisation for Emergency Services Management is open to any Organisation which is a high hazard industry and/or has nominated personnel as emergency responders/hazard management team members who provide cover to industrial/commercial organisations. Organisations which do not fully comply with these requirements are welcome to apply for Corporate Membership of JOIFF.

JOIFF provides a forum for discussion amongst peers, accredited training specifically developed for the sectors in which JOIFF members operate and technical advice through the JOIFF Standard and the JOIFF Shared Learning network. JOIFF welcomes enquiries for Membership - contact the JOIFF Secretariat

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## NEW MEMBERS

During September, October and November 2007 the Executive of JOIFF were delighted to welcome the following new Members:

### Full Members

**BP Refinery, Refinery Bulwer Island, Australia**, represented by Randy Fletcher, Crisis Management and Emergency Response Superintendent and Colin Braybrook, CM/ER Specialist.

**Janssen Pharmaceutical, Co. Cork, Ireland** represented by Richard Mullane, Safety Manager, Tom Nyhan, Training Manager and Brian Burke, Computer Analyst. Janssen have a large team of part time responders supported by the necessary equipment.

**Urenco (Capenhurst) Ltd., Cheshire, England**, represented by Dave Dowling, Fire and Rescue Service Manager and Dave Abbott, Emergency Planner and Fire Safety Adviser. Urenco have a team of full time and part time responders, and a variety of vehicles and equipment.

### Corporate Members:

**Carrington Career & Workwear Ltd., Lancashire, England**, represented by Roger Bellfield, Technical Director and Tom Black, Sales Executive. Carrington are a manufacturer of woven fabrics for career and workwear garments including many used in PPE clothing.

### Individual Members:

**M.Sc. Patricia Braicovich-Severdija Bsc.Sc. Mech. Eng, Rijeka, Croatia**. Patricia holds a BSc. in Mechanical Engineering in the field of Thermotechnical Engineering and an MSc in the field of PPE. She is member of the Croatian Society of Professional Firefighters, a member of the Croatian Ergonomic Society, a member of her local Society of Voluntary Firefighters and a consultant in purchasing PPE.

We look forward to the involvement of our new and existing Members in the continuing development of JOIFF.

### Disclaimer

*The views and opinions expressed in The Catalyst are not necessarily the views of JOIFF or of its Secretariat, Fulcrum Consultants, neither of which are in any way responsible or legally liable for any statements, reports or technical anomalies made by authors in The Catalyst.*



### SAFE STORAGE OF HEATED PRODUCTS IN TANKS

By Jeanne van Buren

J O I F F

The use of codes, standards and other reference documents is widely accepted for setting regulatory safety provisions for the storage of flammable hydrocarbons in vertical tanks. These products are classified as flammable because they have a flash point between 21°C and ≤55°C. Appropriate operational and technical safety provisions are required for their storage. The safety provisions are often derived from the lessons learnt from previous incidents. The annual average twenty-four hours temperature in the Netherlands does not exceed 15°C while the average day temperature in midsummer does not exceed 30°C. So the highest flash point (≤55°C) of these flammable products is 25°C higher than the maximum average ambient temperature in summer.

Nevertheless the risk of hydrocarbons – classified as non flammable - which are stored under constant heating at a temperature above their flash point, are usually not considered as a risk. But incident casuistry has shown that the heated storage of these products can experience similar incidents as the products with a flash point of ≤55°C while they can encounter additional problems too. The probability of an incident with a storage tanks heated above the flash point of the product is considerable.

#### A few examples:

- a) Heated storage tanks for heated products have a fixed roof and restricted ventilation capacity to reduce heat loss. Due to this small ventilation capacity these tanks are more prone to tank failure / rupture due to over and low pressure.
- b) Relieve valves on the tank roof can get clogged by viscous, solidified or polymerised products. Tanks are better resistant to over pressure than low pressure. So when product is discharged from a heated tank with a clogged relieve valve it will soon collapse.
- c) An incident has occurred as a result of a seagoing vessel discharging high volumes of product of a temperature of 10°C or more below the average temperature of product in the storage tank. The cool down shock required an air inflow, which exceeded the capacity of the pressure valve on the roof of the tank. The same problem occurred when a heated tank with minimum insulation was hit by an unexpected hailstorm.
- d) An explosive vapour mixture can be present due to inlet of air in the tank through the pressure valve when high volumes of product are discharged from the tank even when nitrogen suppletion is used without monitoring the oxygen level.
- e) The insulation of the tank may cause problems too. Corrosion – which can be encouraged by condensation of water vapour or rain – may stay undetected. Product spills can make non flammable insulation very flammable. The top coating of the insulation may also be made of a material that can burn (bitumen).

f) A heating coil filled with steam can cause vigorous movements in the tank once a leak occurs. The collapse of the 'steam bubbles' results in violent movements of the liquid in the tank. Depending on the amount of liquid in the tank and the temperature of the steam an aerosol spray can be the result. This is a very similar to the spray that occurs if water is splashed on hot oil. The pressure caused by this process can be fatal for the construction of the tank.

g) Heat can cause the mixture to split –resulting in light ends – heated well above their flash point – floating on top of the rest of the liquid. This layer with overheated light ends forms a potentially explosive vapour mixture.

h) Vigorous movements can occur due to a roll-over in heated tanks with various product layers. Even when mixers are present, for these mixers are not (always) capable of mixing the full contents of the tank.

i) The heating elements are near the bottom of the tank. This means that the top layer may have a much lower temperature than anticipated. Products that are very viscous or even solid at ambient temperature may form a very resistant layer on top of the liquid – which acts as a piston. The friction of this piston layer may result in built up of pressure under the liquid level when product is discharged in the tank.

j) Last but not least, the elevated temperature in the tank encourages the corrosion process. On average the corrosion process speeds up 3 times with every 10°C increase in temperature.

#### Conditions for the safe storage of heated hydrocarbons (not classified as flammable)

The previous examples show that it is fair to arrange tailor made provisions for the safe storage of heated hydrocarbons which are not classified as flammable. The standards used in the process to set these requirements differ from the ones commonly used for flammable hydrocarbons. Nevertheless there are similarities - and it is recommended to follow the process described in the document 'Fire System Integrity Assurance' (FSIA). Following this process means that first the risk is assessed which will result in the identification of the actual hazard(s). Now the requirements to manage and control the hazard(s) can be defined.

1. Risk analysis for a potential tank fire heated hydrocarbons (not listed as flammable)

1.1 Determine the flash point of the stored single hydrocarbon and a mixture of hydrocarbons.

Determination of the flash point of the single hydrocarbon or mixture of hydrocarbons is not a straight forward process as the flash point should be representative for the actual storage conditions. The commonly used Abel-Pensky (closed cup) or Pensky-Martens (open cup) methods are not suitable. These methods are used to



determine the lowest temperature at which a liquid – under atmospheric conditions - in the open air can produce enough vapour above the surface of the liquid, that this vapour – when mixed with air -can be ignited. But during heated storage of hydrocarbons in tanks the vapour above the liquid forms an equilibrium. It should be determined if this vapour can be ignited when it comes in contact with air. The ASTM D3941-90(2001) was developed especially to determine the flash point of hydrocarbons under these conditions. This method covers the determination of the flash point of liquids in which the specimen and the air/vapour mixture above it are approximately in temperature equilibrium.

Furthermore it is very important that we take into account that for a mixture of various hydrocarbons, the most volatile vapour will accumulate above the liquid. This is irrespective of the fact that the volume in the tank is constantly mixed. This is shown for a mixture of only two components below.

So if a mixture of hydrocarbons which is listed as non flammable - is stored under heated conditions - the flash point to be used is the one of component (X) which is present in the mixture for 10% (w/w) or more and has the lowest flash point of all the components. If the flash point of this component (X) is such that under atmospheric conditions the component is classified as non flammable, the flash point should be determined by the ASTM D3941-90(2001) method. This flash point should be used in the rest of the process.

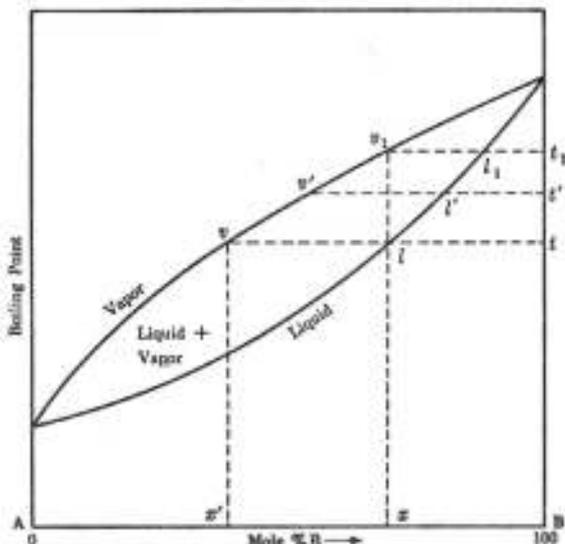


Diagram 1

An exception should be made for mixtures with a minimum azeotropic boiling point. A simple example of the liquid vapour composition of a two component mixture can be found in diagram 2.

If this is the case it should be determined if the temperature at which the mixture is stored is above the

minimum boiling point. If so, this should be included in the risk analysis. A tailor made approach should be applied.

1.2 Determination of sustained burning

Not only is the flash point of the heated hydrocarbon or mixture of hydro carbons relevant. It is also important to know if a fire with this hydrocarbon or mixture of hydro carbons is sustainable.

This is determined by using the ASTM D4206-96(2001) method which describes a procedure for determining the sustained burning characteristics of mixtures of flammable and non flammable liquids and also mixtures containing liquids with widely different flash points.

2. Determine appropriate safety provisions

No specific fire safety requirements are necessary if according to the determination of the flash point (using

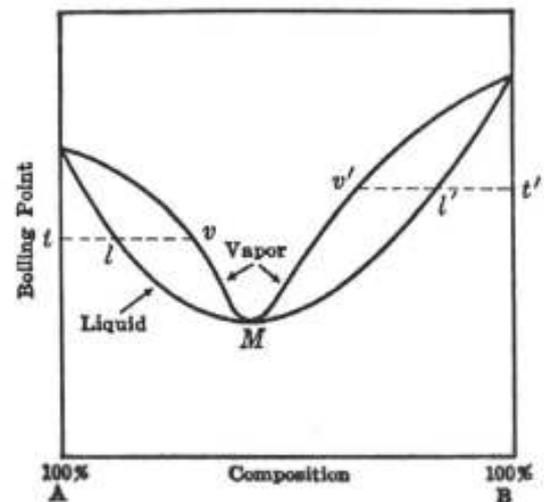


Diagram 2

the

ASTM D3941-90 method as described above) the flash point of the heated product is more than 10°C higher than the average storage temperature in the tank.

Additional measure should be considered if the flash point is lower than the average storage temperature but also if the average storage temperature is ≤10°C than the flash point and a fire with this product is also self sustaining (using the ASTM D4206-96 method).

Organisational and technical provisions should specifically focus on:

- i. preventing a fire – for instance by nitrogen suppletion in combination with oxygen monitoring
- ii. controlling a fire – for instance by early detection through gas detection, fire detection, fire fighting via a foam attack via fixed or mobile foam systems
- iii. containing the fire within the tank structure – for instance by providing a rupture seam at the top of the cylinder, sufficient manhole covers without



handlebars on the tank roof, frequent inspections of the vapour control systems (previous to any product manipulations), water based exposure protection installation for cooling the tank when exposed to a fire. (this can be a fixed, semi fixed and/or mobile system)

The following considerations should be used while choosing appropriate provisions:

- Can and will the heated product be mixed with water?
- Is the product in the tank heavier than water?
- Is the product in tank stored at a temperature which is at or above the boiling point of water?
- Is the tank alone in a bund or are other tanks present?
- What products are stored in the other tanks in the same bund and what are the storage conditions?
- What type of insulation is used?
- Is the tank in direct connection with a process installation?
- Is the product in the tank also (very) toxic or can it spread a bad odour?

### Conclusions

The storage of heated hydrocarbons in tanks is not a priori without risk.

A risk analysis followed by a FSIA-process should always be used to determine if the tailor made fire safety requirements for the heated storage of hydrocarbons in tanks are required.

*(Acknowledgement: Two tables in the article are from S. Glasstone and D. Lewis 1976.)*

*Editor's Note: Jeanne van Buren is a Safety specialist working with the Rotterdam-Rijnmond regional emergency response organisation in The Netherlands. She has a BA in Process Engineering, Chemical Engineering, Applied Chemistry and Environmental Engineering and an MSc in Environmental Quality Management as well as Risk Crisis and Disaster Management. She is currently carrying out a PhD research into integrated fire safety during the life cycle at SEVESO sites.*

## FULCRUM PRESS RELEASE NVQ AWARDS

Fulcrum Consultants, an Edexcel approved Assessment Centre for United Kingdom National Vocational Qualifications is pleased to announce that the following awards have been made following detailed assessment and verification according to the requirements of Edexcel and the Qualifications and Curriculum Assessment Authority.

### **Manchester Airport Fire Service, England:**

#### Watch Management Level 3 NVQ:

Mark Lakin. Tony Bolton.  
Simon Bolton. Mick Graham.  
Mike Roberts.

### **Pfizer Ltd., Sandwich, Kent, England.**

#### Assessor Award A1 Level 3.

Kevin Deveson. Ray Colyer.  
John Griffiths. Steve Tancock.

### **SembCorp Utilities UK Ltd., Wilton, England.**

#### Watch Management Level 3 NVQ:

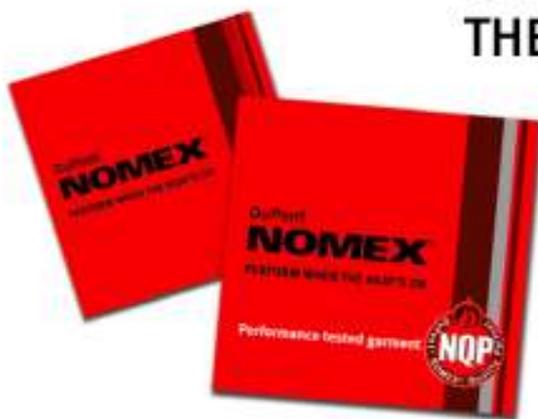
Ewen Duncan.

#### Assessor Award A1 Level 3.

Peter Burke. Michael Breckon.  
Howard Carr. Paul Chambers.  
Martin Garret. Steve Judson.  
Ian Kirkup. Trevor Moody.  
Ian Scott. Terry Stolweather.  
Matthew Thomas. Kevin Walton.  
David Wright.



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Picture courtesy of 'West Midlands Fire Service' - Photographer Ted Cokenden



J O I F F

### INSTITUTE OF FIRE SAFETY MANAGERS (IFSM)

*Report by Dr Bob Docherty, Secretary General*

The IFSM Annual General Meeting (AGM) 2007 and Technical Conference was held on 11 October 2007 at Liquid Plastics, Preston. President Gary Whitworth gave a welcome address and Chairman John Williamson took the Chair for the day's proceedings. Technical presentations preceded the AGM, the first of which, entitled "Dedicated CFD Modelling takes guessing out of the equation" was given by Dr Kees van Wingerden of GexCon AS – Norway. CFD modelling uses Computational Fluid Dynamic tools to predict the consequential effects of fire, explosions and release of hazardous materials. The second paper, on the benefits of integrated fire systems, was presented by Rob Heathcock.

After lunch, which was a traditional Lancashire hot pot provided by Liquid Plastics and served up by Sally Ashcroft and Laura Lomax, the AGM took place. Draft minutes are available on the website [www.ifsm.org.uk](http://www.ifsm.org.uk) as well as application forms for membership, the Fire Risk Assessors Register and course/training accreditation.

Following the AGM, Liquid Plastics gave a presentation of its unique cold roofing process which completely removes the hazard of hot work on roofs. Serious hot work fires in the UK from 2001 to 2005 have fire loss figures in excess of £18m (source – The Fire protection Association) with fires in roof spaces accounting for over £7.2m of that total cost.



*President Gary Whitworth addresses the AGM*

After the presentation which included details of the company's products and systems, Doug McAliece and Craig Greenhalgh gave a practical demonstration of cold processes manufactured by the Company.

On conclusion of the programme, the Chairman thanked Jeremy Gorick, Managing Director of Liquid Plastics for the hospitality extended.

*(Acknowledgement - Statistics for serious hot work fires supplied by Rupert Gilbey, The FPA)*

## JOIFF ACCREDITED TRAINING PLANNED FOR RUSSIA.

A very constructive meeting was held recently between representatives of JOIFF and Mr. Dmitry Choudnovsky, Head of Astrakhan Well Control & Response Unit, Gazobezопасnost LLC, accompanied by Mr. Vitaly Baranov, Senior Instructor at the Unit with a view to JOIFF accredited Training taking place in their Training Centre located near Caspian Sea in the city of Astrakhan, Russia.

Gazobezопасnost LLC is an incorporated JSC Gazprom division and is Russia's largest well control and blowout elimination service provider and has also become the leading training organisation in Russia

for on-shore and off-shore personnel. Astrakhan Drilling Training is an IWCF accredited location for Rotary Drilling certification since 2001.

Gazobezопасnost provides complex Blowout Prevention and H<sub>2</sub>S Safety solutions for drilling, workover and production facilities of gas industry Operators and is the industry's leader in providing HSE, Industrial Safety and Fire Safety services for production and processing companies. Gazobezопасnost Units are on a permanent alert level to ensure performance of their primary functions.

The Geographical location of the Units provides for immediate timely

response in case any contingency situation appears with any Drilling Contractor or Production Operator. Gazobezопасnost has 35-years' experience of gas kick and blowout elimination (including burning H<sub>2</sub>S blowouts) on-shore and off-shore, on the territory of the USSR, Afghanistan, Poland and to date has eliminated are over 120 blowouts on-shore and off-shore.



## MEMBERS SECTION

The Annual General Meeting of JOIFF Ltd. took place in Durban, South Africa on 7<sup>th</sup> November 2007 attended by 39 persons. The procedural and legal requirements of the AGM were satisfactorily completed.

The AGM approved a proposal from the JOIFF Treasurer Dave Murray that JOIFF set aside funding for Scholarships to be awarded to 3 people, one each year for 3 years. The scholarships will be awarded following submission of a proposal to a judging Committee to be established and chaired by the JOIFF Treasurer and will be open to persons from anywhere in the World, first payment in year commencing Jan 2009. Applicants will propose the subject of their scholarship and the work that results from the Scholarship will belong to JOIFF. Details and invitations to apply for the Scholarships will be announced during 2008.

Rick Lanigan was confirmed as the new Chairman of JOIFF with Phil Osler as Vice Chairman, Kevin Westwood as Secretary and Dave Murray as Treasurer.

It was agreed that due to the large number of JOIFF Members in the United Kingdom, meetings will be held in the UK each year. The first of these meetings is currently being arranged and will probably be held in March, 2008, details to follow. Suggestions from JOIFF Members in the UK and Ireland on the proposed format of these meetings

will be welcome – suggestions to [joiff@iol.ie](mailto:joiff@iol.ie) Consideration is also being given to JOIFF meetings to be held outside the UK.

The AGM was followed by a technical session with papers given by Richard Verhoef of JOIFF Member Hytrans Systems B.V. , Philip Johnson of JOIFF Member Flamepro (UK) Ltd., Guido Vliegen of JOIFF Member Ten Cate Protective Fabrics, Eric Laverne of JOIFF Member Williams Fire and Hazard Control and David Johnson and Mark Samuels of JOIFF Member Essex County Fire and Rescue Service. The papers are available for download from the Members Area of the JOIFF website.

The following day, all JOIFF Members who attended to AGM were invited to attend the meeting of the South African Petrochemical Fire Chiefs Committee. The very interesting business sessions were followed by presentations from sponsors of the event JOIFF Members, Engen Petroleum, SAPREF, Kidde/Angus, Fire Raiders and Tyco.

Before the meeting concluded, newly elected JOIFF Chairman Rick Lanigan, made a number of presentations on behalf of JOIFF to members of the South African Petrochemical Fire Chiefs Committee to thank them for the excellent arrangements, stimulating meetings and wonderful hospitality.



*Those who attended the JOIFF AGM in Durban, South Africa*



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## CROATIAN TRANSLATION OF THE JOIFF HANDBOOK ON PPE TO PROTECT AGAINST HEAT AND FLAME

In January 2007, the JOIFF Secretariat received an email from Aleksandar Regent, Senior Lecturer at the Department of Occupational Safety, Rijeka Polytechnics, Croatia, who had read in the JOIFF pages in the December 2006 edition of the Industrial Fire journal of the publication of the new JOIFF Handbook on Personal Protective Equipment (PPE) to protect against heat and flame. When Mr. Regent downloaded the Handbook from the JOIFF website and read it, he requested permission from JOIFF to translate it into Croatian primarily for the benefit of the Firefighters of Croatia and also for all those who were using, purchasing and learning about such PPE. This permission was readily forthcoming on the basis that there would be no change to the content or text of the Handbook as this had been agreed by the JOIFF Membership and now formed part of the JOIFF Standard.



*Aleksandar\_Regent*

The translation has now been completed and JOIFF was extremely proud to receive a copy of the Handbook in the Croatian language early this month. The text of the Handbook was translated in its entirety, without any change to the version in English and copyright of the publication, ISBN number 978-3-8334-8207-6 is to JOIFF Ltd. Any comment, addition or explanation has been clearly marked as such.

3000 copies of the Croatian edition have been published as an official handbook of the Croatian Firefighters Association ([www.hvz.hr](http://www.hvz.hr)) as the supplement to the November 2007 issue of their magazine Vatrogasni vjesnik (Firefighters Messenger). The JOIFF handbook has also been accepted as a textbook at the Politechnic

Rijeka — Occupational Safety Dept. ([www.veleri.hr](http://www.veleri.hr)).

The translator of the Handbook, Aleksandar Regent, MSc Environmental Engineering, Dipl. Ing. (BSc) Mechanical Engineering, is currently employed as a Senior Lecturer at the Department of Occupational Safety, Rijeka Polytechnics ([www.veleri.hr](http://www.veleri.hr)), where he has been teaching courses on Personal Protective Equipment, Environmental Management and Physical Noxiousness (protection from noise, vibration, lighting, ionization and thermal environment factors) since 2006. He has also been the director and Principal partner of Teh-projekt Inzenjering Ltd. Rijeka for 15 years ([www.tehproinj.hr](http://www.tehproinj.hr)), a company specialising in fire protection equipment and PPE procurement.

From 1986 onwards, he has been a member of the research team on 7 research and science projects, led by the professors of the Faculty of Engineering Rijeka ([www.riteh.hr](http://www.riteh.hr)). He has been registered as an active scientist within the national register of scientists under the auspices of the Ministry of Science, Education and Sports and has published 15 refereed professional and scientific papers and 46 non-refereed professional papers. He has been a consultant and principal design engineer and project manager for 16 years, on more than a hundred projects of installations in the industry, both at home and abroad.

He has been president of the Technical Committee HZN/TO21 Fire Protection and Fire Fighting Equipment for 5 years, a member of the Technical Committee HZN/TO94/PO6 Personal Protective Equipment – Protective Clothing, and a member of the Technical Committee HZN/TO207 – Environmental management. He has been a member of the NFPA since 1983, a member of the SZPV – Slovenian Fire Protection Assn. and of the NUZOP – Croatian Fire Protection Assn. He has more than 32 years of working experience in industry and a year of teaching experience at the Polytechnic of Rijeka. Earlier this year his application for a PhD thesis has been accepted at the Faculty of Engineering, University of Rijeka. In his spare time, he is an active mountaineer, climber and skier.



## PPE CORNER

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In January 2007 JOIFF published the JOIFF Handbook for Personal Protective Equipment (PPE) to protect against Heat and Flame and since then its use and influence in guiding persons with their issues on such PPE has been growing. In another section of this edition of The Catalyst, it is announced that the authorised version of the Handbook has been published in the Croatian language which will bring the detail to many thousands more Users of such PPE. Discussions are currently taking place about translations into other languages and it is intended that each language version will be put on the JOIFF website for free download.

The reaction and feedback to the Handbook from Emergency Responders seeking further information on PPE has encouraged JOIFF to take on another project relating to PPE and that is to ask Users of PPE for their input in designing items of PPE. As Emergency Responders are increasingly becoming engaged in rescue activities and as to date there is no International Standard for PPE to be used during rescue, JOIFF invites specialists in various types of rescue to submit their ideas on the shortcomings of existing PPE items and ensembles and their proposals for what they would like to see in future items and ensembles of PPE to be used for rescue. Subject to the response to this invitation, it is hoped that specialists will be brought together in small working groups to review submissions and try to come up with final specifications. This work will be carried out through the medium of email.

Some background to the development of a standard for PPE for Rescue might be useful to those interested in this work.

Some years ago, an expert group of rescue specialists began to look at the type of PPE that is used in technical rescue with a view to developing an International Standard for Rescue PPE. For a number of reasons, this work did not reach fruition. At the commencement of this work, it was agreed that it is not possible to provide a standard design for PPE to cover all of the diverse range of rescue scenarios that Emergency Responders are likely to encounter so the group agreed that it is important that risk assessments be undertaken to determine the type of PPE that would be suitable for its intended use and the expected exposure to hazards. For complete protection against exposures, the risk assessment should include protection of the whole body including the torso, arms and legs, head, face, hands and feet and where relevant, the respiratory system.

To assist in establishing the basis of this risk assessment, the expert group drew up a list of the many hazards likely to be encountered where rescue activity is required.

Rescue activities identified were divided into 4 groups and each main group was subdivided into 3 categories as follows:

### Rope Rescue

- Category 1 Rescue from Heights.
- Category 2 Rescue from Confined Spaces.
- Category 3 Rescue from Shafts.

### Water Rescue

- Category 1 Rescue from Still Water – Inland.
- Category 2 Rescue from Flowing Water Inland.
- Category 3 Sea /Ocean Rescue.

### Rescue from Vehicles and Plant

- Category 1 Rescue using hand tools.
- Category 2 Rescue using hand operated hydraulic equipment.
- Category 3 Rescue using mechanically operated hydraulic equipment.

### Special Risks

- Category 1 Structural Collapse above ground.
- Category 2 Structural Collapse below ground.
- Category 3 Trench Rescue.

The JOIFF Steering Committee overseeing this project invite Emergency Responders who engage in rescue activities to submit their ideas on the type of PPE that they believe should be used under one or more of the above headings and/or on features that they think should be incorporated into such PPE. Ideas for complete ensembles or for parts of a PPE ensemble will be welcome. Submissions should be sent to [joiff@iol.ie](mailto:joiff@iol.ie) and persons making submissions should feel free to suggest innovations that they think might be useful. The name of any person who submits suggestions will not be used without their permission and the identity of those in any working groups formed will be restricted to those in the working groups and the JOIFF steering group overseeing this project.

# How Protect protects you

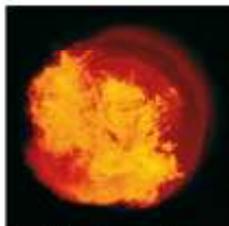
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## JOIFF ACCREDITS SASOL SECUNDA

In November 2007 following an inspection audit, the Sasol Secunda Shared Services Emergency Management Training Academy (EMTA), South Africa was awarded a JOIFF certificate of accreditation. Since the early 1980s, the EMTA has developed from modest beginnings to become one of the most advanced industrial training centres in Africa. The primary objective of the EMTA is to develop and maintain the competence of Emergency Management and onsite personnel in Secunda. As Sasol is a global company with branches throughout South Africa, the EMTA also trains Sasol personnel from their other sites. The EMTA also provides training to the municipal fire departments throughout the Mpumalanga province in which Sasol Secunda is located. Recently the EMTA has presented a series of courses for customers from Namibia and Nigeria.

The EMTA is accredited by the South African Emergency Services Institute (SAESI) / International Fire Services Accreditation Council (IFSAC) to present a range of courses. The EMTA and JOIFF have begun to investigate with SAESI, the possibility of aligning some of the JOIFF courses and programmes with the South African Qualifications Authority Standards.



*Secretary of JOIFF Kevin Westwood (left) presenting the JOIFF certificate of Accreditation to Greg Wordsworth, Chief Training Officer of Sasol Emergency Management Training Academy*

At present the EMTA runs a full year program of courses such as Fire Safety, First Aid including ambulance assistant and resuscitation training for vessel entries, a range of Hazardous Materials Courses, Fire Suppression programmes from basic firefighting training to training Instructors in Advanced Petrochemical Firefighting Training, Rope Rescue Courses, Confined Space Courses, Vehicle extraction courses etc.

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## FULCRUM CONSULTANTS AND QA ASSOCIATES

announce that during 2008 they will be holding

**Assessor Courses** to qualify to the UK Level 3 A1 Award for Assessors to assess personnel in the Work Place against the appropriate National Occupational Standard

for persons with no experience of assessing  
and for persons who wish to update their current qualifications D32 and/or D33.

Duration: 4 days followed by a Site visit or electronic feedback.

**Internal Verifier Courses** to qualify to the UK Level 4 V1 Award for Internal Verifiers to quality assure the assessment process being carried out in the Work Place against the appropriate National Occupational Standard

for persons who are currently qualified to the 1 Award  
and for persons who wish to update their current qualifications D34.

Duration: 4 days followed by 2 Site visits or electronic feedback.

For further information contact:  
Fulcrum Consultants at [fulcrum.consult@iol.ie](mailto:fulcrum.consult@iol.ie)  
or QA Associates at [info@qa-associates.co.uk](mailto:info@qa-associates.co.uk)





## JOIFF'S NEW CHAIRMAN

At the recent JOIFF Annual General Meeting in Durban, South Africa, Rick Lanigan was elected the new Chairman of JOIFF.



*Chairman of JOIFF Rick Lanigan (left) making a presentation to Hannes du Toit, Chairman of South African Petrochemical Fire Chiefs Committee.*

Rick started his career in the Municipal Fire Service in Scotland in 1975 and gained a wealth of experience in providing Fire Cover for the petrochemical complexes in the Region. He later transferred to Cumbria Fire & Rescue Service where the Brigade covered the shipbuilding Industry at Barrow employing more than 16,000 persons who were primarily engaged in building submarines.

On promotion to Divisional Commander in Cumbria Fire & Rescue Service, he moved to West Cumbria where the main risks were Sellafield Nuclear reprocessing Complex with a workforce of 15,000, a number of chemical complexes and the dock areas of Workington and Whitehaven.

When he retired from Cumbria Fire Service in January 2002 he took up his present role of Chief Fire Officer for British Nuclear Fuels Limited now Sellafield Sites Limited.

## SASOL RELAY EVENT

On the 3rd November 2007, JOIFF Member Sasol Secunda, South Africa held their annual inter departmental relay at the Sasol Secunda Recreation Club. Almost 200 teams from the various business units and departments on the Sasol Secunda site entered the event this year. Walking and running teams were entered, the walkers covering a distance of 20km and the runners a distance of 40km. Readers should remember that November is Spring/Summer in South Africa so the temperatures during the day can reach high levels as they did during the day that the 2007 relay was held.

The Sasol Secunda Shared Services Emergency Management Division entered a total of 7 teams for the event, 6 walking teams and 1 running team. All of the Emergency Management teams successfully completed the event. What was special about the Emergency Management teams named Hotshots 1, 2 & 3 was that they completed the race in full turnout gear and carried breathing apparatus (carried, not used). The teams in full turnout gear generated a lot of response from the crowds and were cheered along the entire route. Whilst many of the spectators thought that they were mad to do the relay in such gear on such a hot day, they did express their appreciation for what the fire department does to keep them and the plant protected and their attitude to the work it does.



*Hotshots 1, 2 & 3*

*L-R Back: L Cassell, MD Fölscher, J van Rooyen, NP Oosthuizen  
L-R Front: G Wordsworth, ZF Joubert, C Rigaard, R Williams,  
BC Motlogelwa*

At the prize ceremony Hotshots 1, 2 & 3 were awarded a prize for the best dressed team at the event.



### JOIFF MEMBERS AWARDED IFE QUALIFICATIONS

By Mike Evers

JOIFF

**M**any members of JOIFF are experienced fire safety professionals who have reached high standards of professional development. Since the publication of an article in the December 2002 edition of The Catalyst by John Judd, then International President elect of the Institution of Fire Engineers (IFE), a number of representatives of JOIFF Member Organisations have been awarded qualifications from the IFE in the grades of Graduate (GIFireE) and Member (MIFireE) based on recognition of their professional status. Those who have been awarded these qualifications include:

G.I. Fire E.

Peter Bedborough, Pfizer UK

Ray Colyer, Pfizer UK

Kevin Deveson, Pfizer UK.

and

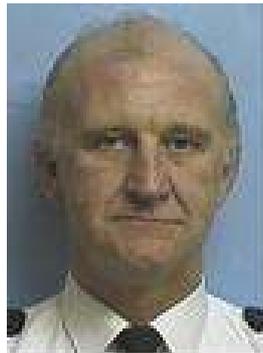
M.I. Fire E.

Chris Formby, Manchester Airport Fire Service.

The IFE have recently recognised the professional status of outgoing JOIFF Chairman Mike Evers and have awarded him the MIFireE grade. We are sure that all Members of JOIFF will join us in congratulating Mike on this award and we have asked him to share his thoughts on this tremendous achievement and on his years as Chairman of JOIFF.

Now that the Chairmanship has passed over to Rick Lanigan, I would like to thank the executive and membership

for all their support over the years whilst I have been Chairman. I would also like to take this opportunity to wish Rick all the best for the future as our new chairman and I am sure he will receive the same support that I was privileged to receive when I was chairman.



Mike Evers M.I. Fire E., Chief Fire Officer, Ciba UK.

A snippet in time and to remember that life is not a practice run

I started my working career at the tender age of 16 as an apprentice electrician working for the local electricity board. Over the following years I worked on several large electrical engineering jobs and eventually in 1974 joined the West Yorkshire Fire Service.

Whilst serving in the fire service I attended several large incidents including the Bradford City Fire and numerous other smaller incidents, all just as challenging as each other. The one thing I found about the Fire Service

was that when you join an organisation like that, you join the biggest club in the world. No matter where you go fire-fighters are the same world wide. If you're ever in need you can always depend on getting help from a fellow fire-fighter.

I joined JOIFF several years ago when it could have been described as a small gentlemen's club, exchanging ideas over a few pints, not realising how the organisation would grow into what has become a truly International organisation represented on all continents. Joining JOIFF has given me a similar experience of camaraderie as the Fire Service, the feeling of not being by yourself and knowing that the answers are out there some where. All you have to do is ask, you can almost guarantee that someone out there will have been there, done it and got the tee shirt.

The job I have now as Chief Fire Officer for Ciba is probably one of the most interesting and challenging jobs I have ever done. It has enabled me to increase my knowledge in fire engineering to the extent where I have been able to gain my MIFireE. This has now allowed me to go on and consult on global projects within the Ciba group, which opens up a range of international standards to work by.

Being a member of the IFE has now opened a further channel of knowledge for me. (One draw back is I won't be able to call my good friend Alec Feldman an old engineer any more.)



The members of Hotshots 1, 2 and 3 completing the last leg of the SASOL walk.



## PRESS RELEASE: DUPONT PROVIDES A SPECIALIZED PROTECTIVE CLOTHING SOLUTION FOR NORTHUMBERLAND'S WILDFIRE-FIGHTERS!

In 2005, Northumberland Fire & Rescue Service put wheels in motion to equip its fire-fighters with the specialized knowledge, skills and equipment to tackle the threat of wildfire in the North-East region of the UK. After eighteen months of dedicated training across Europe and the US, Northumberland's specialized wildfire team has earned an international reputation; introducing and successfully deploying innovative fire-fighting tactics. During the training, it was evident to Steve Gibson, Head of Operational Support at Northumberland F&RS, that the UK's standard-issue structural fire-fighting kit was unsuitable for fighting wild fires, and that a lightweight alternative should be developed that suited the application, the UK climate and the Service's PPE budget. DuPont brought together customer, garment manufacturer, and heat-and-flame protective fibre DuPont™ NOMEX® to develop a tailor-made solution.

### Catalonian inspiration

Steve Gibson explained, "After the Civil Contingencies Act was introduced in 2004, we undertook a specific risk assessment of our region, and it was clear that the two or three major wildland fires that blaze through Northumberland on an annual basis posed a significant risk to our fire fighters and the local community. At a wildfire conference in Yorkshire in 2005, a discussion with Catalonian wildfire specialist and head trainer of the European Fire Paradox Project, Marc Castellnou inspired me to develop Northumberland's limited wildfire-fighting experience, and explore international methods."

"Recognising the importance of multi-agency collaboration, the first step (at the end of 2005), was to set up The Northumberland Fire Group – a partnership of government agencies, NGOs and private landowners that includes the Forestry Commission, National Parks and the Ministry of Defence amongst many others. The Group, which today has the support of around thirty different organisations and businesses, received funding from a number of sources. Through funding from The Fire Paradox Project, members were able to train with highly experienced, wildfire-fighting experts in France, the US and Catalonia to learn, develop and practice new skills that would benefit not only the UK but also the European community."

"The numerous, invaluable skills we have acquired over the past eighteen months have already been implemented in the UK. For example, we have used fire as a tool to create black areas that starve a rampaging fire of fuel, we have harnessed the experience and airborne resources of the RAF to help douse a fire using tons of reservoir water, and have carried out low and high intensity burns to stop a fire in its tracks. We have now provided cascade training to some 80 people, and through the Fire Paradox Project, we can give

specialised wildfire-fighting assistance in Europe should the need arise. "

### Specialised Wildfire PPE

As wildfires can spread with such ferocity, it is important for fire-fighters to be able to move fast and for long periods over a potentially wide area. The protective clothing requirements for wildland fire-fighting are therefore very different to the protective clothing requirements of structural fire-fighting. To a trained professional fighting a wildland fire, the risk of the intense burn of flashover fire or backdraft is extremely low, whereas the risk of exhaustion and/or heat stress is relatively high.

The choice of wildfire kit was very limited in the UK and we wanted to base the design of our garment(s) on the wildfire kits used by the Catalonian GRAF Bombers, to whom we owe much of our training. A few months ago, I met George Farendon, Emergency Response Consultant for DuPont in the UK, at a wildfire conference and explained our plight! Fully understanding our requirements, he knew that NOMEX® Brand Fibre could provide the lightweight protection we needed and endeavoured to find a manufacturer that could provide a clothing solution to meet our specific needs."

George enlisted the help of Yaffy Protective Clothing, a specialist in the manufacture of outdoor clothing that protects people exposed to occupational risks ranging from burn injury to below-freezing temperatures. Highly experienced in the production of lightweight heat-and-flame protective garments, Yaffy supplies around 75% of the UK's Police-issue public order kits, made of NOMEX®. Robert Allison, Yaffy's Sales and Business Development Manager, worked closely with Steve and George to design a clothing solution for the Northumberland Fire Group that would be highly comfortable, adaptable and reasonably priced as well as extremely protective against burn injury.

Robert explained, "Together, we designed a new wildfire kit that comprises a top made of NOMEX® and trousers made of NOMEX® that are zipped together to form a protective coverall at the start of the operation. When away from the risk of burn injury, if the fire fighter's body temperature rises, the two garments can be unzipped to increase the air-flow through the garments and reduce the risk of heat stress. The garments have been designed to accommodate equipment such as radios, and feature reinforcements in certain areas. One other advantage is that if one of the garments is damaged, only one garment needs to be replaced, making them a cost effective investment."

As the garments are made of DuPont™ NOMEX® Comfort, a protective fibre with a worldwide reputation for excellent heat-and-flame resistance, they provide an



they feel very soft next to the skin and lightweight enough to afford maximum dexterity, comfort and mobility when the heat is on.

Steve Gibson concluded, "With a long history of expertise in heat-and-flame protective clothing, DuPont was instrumental in getting the right people around the table and helping us develop a solution. We have received the first of the kits, badged up with our logo, and although they have yet to prove their worth, we are very happy with them. The rest of the trained firefighters within the Northumberland Fire Group will no doubt be following suit in due course."

outstanding level of protection against burn injury, and this protection is integral, meaning it can't be washed out or worn away. Even though the garments offer superb protection from burn injury throughout their wear life,

For more information on DuPont's range of protective clothing solutions, please visit [www.dpp-europe.com](http://www.dpp-europe.com) or call George Farendon at DuPont on 07952 153956.

*DuPont is a science company. Founded in 1802, DuPont puts science to work by creating sustainable solutions essential to a better, safer, healthier life for people everywhere. Operating in more than 70 countries, DuPont offers a wide range of innovative products and services for markets including agriculture, nutrition, electronics, communications, safety and protection, home and construction, transportation and apparel. The DuPont Oval, DuPont™, The miracles of science™, NOMEX®, KEVLAR®, THERMO-MAN® and ARC-MAN® are registered trademarks or trademarks of E. I. du Pont de Nemours and Company or its affiliates.*



## SOME CHRISTMAS INFORMATION

1. It was the custom to eat goose at Christmas until Henry VIII decided to tuck into a turkey. 93 per cent of the population in the UK will eat turkey on Christmas Day; this means 11million turkeys being cooked!
2. Christmas has been celebrated in England for thousands of years. According to legend, King Arthur made merry in York in 521 surrounded by "minstrels, gleemen, harpers, pipe-players, jugglers, and dancers."
3. Christmas carols were banned between 1647 and 1660 in England by Oliver Cromwell who thought that Christmas should be a solemn day.
4. The word carol comes from the ancient Greek choros, which means, "dancing in a circle", and from the Old French word carol, meaning "a song to accompany dancing".
5. In 1551, playing sport on Christmas Day was made illegal. This law was later ignored.
6. Christmas pudding was first made as a kind of soup with raisins and wine in it.
7. The Queen's Christmas speech was televised for the first time in 1957.
8. Each year approximately 35million Christmas trees are produced.
9. The first Christmas card was designed by a man named John Calcott Horsely for Sir Henry Cole, the friend who had given him the idea. A thousand copies of the card were printed and sold for one shilling. This is reportedly the first Christmas card to be produced and sold to the public. Now, the average person in Britain sends 50 Christmas cards each year.
10. Postmen in Victorian England were popularly called "robins". This was because their uniforms were red. Victorian Christmas cards often showed a robin delivering Christmas mail.
11. It is estimated that approximately 400,000 people become sick each year from eating tainted Christmas leftovers.
12. On average, each person will spend £330.00 on Christmas gifts, and around 125,000 tonnes of plastic packaging are thrown away over Christmas



DIARY OF EVENTS

**2008**

- Jan 13th - 15th [Intersec Middle East, Dubai, U.A.E.](#)
- April
  - TBA [JOIFF Conference "Emergency Response – It's impact on the Economy"](#).
  - 16th – 18th [Disaster Management 2008 Exhibition & Conference, New Delhi, India.](#)
  - 28th – 2nd May [Industrial Fire World Emergency Responder Conference and Expo. Beaumont Texas.](#)
- May 21st – 23rd [PPE Conference, Ghent, Belgium.](#)
- 21st – 24th [Fire and Security Pakistan, 4th International Fire & Security Exhibition & conference](#)
- July 2nd - 3rd [85th AGM Conference and Exhibition, Blackpool, England.](#)
- Oct 7th - 10th [Fire Protection at Security Essen 2008, Essen, Germany.](#)

*Please contact the JOIFF Secretariat with details of any event that you think that JOIFF Members might be interested in attending. Note: The Catalyst is not responsible for the accuracy of dates and / or venues announced. This is based on information given to the Editors and is published in good faith.*

TRAINING NOTES

**J**OIFF accredited training is within a Competency Based Training framework and involves not only course content, as also critical to the effective provision of training are the facilities of the training provider/training establishment and the capabilities of the instructing staff. JOIFF has developed systems of accreditation for training providers and minimum instructional requirements for Instructors. All students who successfully complete a JOIFF accredited course/programme are issued with a JOIFF Certificate of Competence which has its own unique number. Records of all successful students and the courses in which they qualify are retained. There is growing recognition worldwide of the JOIFF Certificate of Competence which is coming to be regarded as a passport to the level of employment and rank which an emergency responder's qualifications enables and entitles them to deserve.

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SembCorp Protection has been a JOIFF accredited Training Provider for a number of years. Until now, attendance on their specialist courses usually followed in the wake of an emergency preparedness and emergency response consultancy project undertaken by SembCorp Protection. SembCorp are now opening these courses to all JOIFF Members who have a need for such training.

both of which are JOIFF-accredited. Either course can be tailored to match the customer's particular requirements and can be undertaken either at SembCorp's training facility at Wilton International on Teesside or at the customer's own premises.

The day-long Site Incident Controller course is for personnel who have responsibility for taking control at the scene of an incident, to enable them to manage emergency situations. Site Incident Controller courses of longer duration are also JOIFF accredited and can be tailored to match the customer's particular requirements

The PERO course is a two-day module for people who are responsible for attending pipeline incidents at either the operational or tactical level of incident management. Following the successful completion of both the Site Incident Controller and PERO courses, delegates are awarded a JOIFF certificate of competence that is valid for two years.

As with all JOIFF accredited Training Providers, SembCorp's courses, training site and Instructors are JOIFF accredited.

The Courses are a Site Incident Controller course and a PERO (Pipeline Emergency Response Officer) course,





## TRAINING NOTES, CONT'D

The following dates have been provided by the UK based JOIFF accredited training establishments. If the dates are not suitable for you or your own specific training requirements are not listed below, contact Fulcrum Consultants who will be happy to try to facilitate you.

### ***Programme for 2007/8 - JOIFF accredited Training Establishments:***

JOIFF accredited Course	Dates	Venue
5 day Team Leader	19 – 23 November 2007	Serco IFTC
	10 - 14 March 2008	Washington Hall
3 day Occupational Firefighter	14 – 16 November 2007	Serco IFTC
	10 - 12 December 2007	Washington Hall
	11-13 February 2008	Washington Hall
2 day Practical Firefighting	12 - 13 November 2007	Serco IFTC
	7-8 January 2008	Washington Hall
2 day Practical Firefighting refresher	5 – 8 November 2007 (Full)	Washington Hall
5 day Industrial Firefighting (Basic)	3-7 September 2007	Washington Hall
	12-16 November 2007	Washington Hall
	14-18 January 2008	Washington Hall
	3-7 March 2008	Washington Hall
Breathing Apparatus Instructor	21 January-1 February 2008	Washington Hall
Breathing Apparatus Instructor Re- freshener	19-23 November 2007	Washington Hall
Pipeline Emergency Response Officer (PERO)	19-20 February 2008	Tees Valley
	14-15 May 2008	Tees Valley
	8 – 9 September 2008	Tees Valley
	18-19 November 2008	Tees Valley
Site Incident Controller	26 February 2008	Tees Valley
	19 May 2008	Tees Valley
	17 September 2008	Tees Valley
	25 November 2008	Tees Valley

For further information about JOIFF accredited on-Site Competency Based Training Programmes, the range of Fire Service NVQs and any other aspect of JOIFF Training, please contact the JOIFF Secretariat details below.

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