



April 2016



## JOIFF

Some Industrial incidents that took place during the first quarter of 2016

### JOIFF Shared Learning

Shared Learning is one of the 3 key pillars of JOIFF. Details of the industrial incidents listed on this page which are only a small number of the actual incidents reported during the past 3 months have been circulated through the JOIFF Shared Learning network to the nominees of all JOIFF member organisations.

### Message from the JOIFF Chairman



JOIFF members and guests, welcome to another edition of The Catalyst.

I have confidence that if you are reading this letter, either you are already familiar with the exceptional articles that the Catalyst offers, or you are about to discover the practical and technically sound issues and concerns that are addressed within these pages. Enjoy, and as

*Continued overleaf...*



*denatured ethanol spill into MS River* 🇨🇦 **CANADA - One Killed in Canadian Oil Plant Incident** 🇺🇸 **US - Firefighters Extinguish Fracking Facility Fire, \$20M Damage** 🇮🇳 **India - Fire at Paradip Refinery ahead of PM Modi visit** 🇵🇷 **Puerto Rico - Still Overflowing Tanks** 🇲🇽 **Mexico - Pemex, 3 Killed in Fire on Abkatun Platform** 🇺🇸 **USA - Frio County, 2 injured in gas plant explosion** 🇦🇪 **UAE - 2 Injured in Sharjah Diesel Tank Fires** 🇵🇭 **Philippines - LPG storage plant in Batangas on fire for more than 18 hours** 🇳🇮 **Nigeria - Group raises alarm over underwater gas leak from AGIP oil field in Bayelsa** 🇧🇪 **Belgium - Dashcam footage captures the moment and explosion occurs at a Belgian waste treatment plant** 🇹🇭 **Thailand - More than 60 hospitalised as LNG fuelled boat engine explodes in Bangkok** 🇺🇸 **USA - Explosion**

*Libya - oil storage tanks set on fire during IS assault - seeks outside help* 🇺🇸 **US - California state of emergency over methane leak** 🇧🇷 **Brazil: Dozens Hospitalized after Toxic gas Explosion at Port** 🇺🇸 **US - 1 dead, 3 injured in Pasadena chemical plant explosion** 🇺🇸 **US - Nearly 300,000 gallons of**



*rocks refinery in Pasadena injuring at least one* 🇺🇸 **USA - Authorities probing cause of tank explosion on oil production platform in Iberville parish** 🇺🇸 **USA - Minnesota town evacuated after tanker truck collides with train, catches fire** 🇲🇽 **MEXICO - Pemex Pipeline Incident Controlled following 42 Hrs Fire-fight** 🇸🇦





always, please challenge and test what you read. That is how we all continue to develop and improve as professionals.

By now JOIFF members will have received several updates on the upcoming JOIFF conference in Malta. In my years in this profession, I have attended more conferences and professional development seminars than I can remember. Though I am involved in the organizing and delivery of the upcoming JOIFF conference, I have seldom been as interested and anxious to listen to the presentations and network with the assembled professionals. The agenda, and list of speakers is an exceptional blend of international leaders and innovators, that when combined, provide an opportunity that is unique to our profession, and should not be missed.

Our corporate members and sponsors have committed to insuring this conference can afford the excellence that both JOIFF and they themselves strive for. Take another look at the agenda for the conference and commit to attending for your own professional development. Do note that we are rapidly running out of space for attendees so make it a priority to register soon.

An article in this edition of The Catalyst shows the link to the Conference website where you can register for and get further information on the conference.

As a final note, JOIFF continues to grow in regards to our training certifications and diploma demands. Requests have accelerated at a very rapid pace, which reflects both the need for quality controlled training within our membership and beyond, and in the excellence that our JOIFF certified training establishments provide. This is exactly the right type of partnership that our industry needs, and JOIFF seeks to promote. My highest to both those who are seeking this training and those of our membership who provide it. Well done!

Until the next edition of The Catalyst,

*Randal S. Fletcher (Randy)*

**JOIFF Chairman**

### About JOIFF

Membership of JOIFF, the International Organisation for Industrial Hazard 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's purpose is to prevent and/or mitigate hazardous incidents in Industry through its 3 pillars:

- Shared Learning – improving risk awareness amongst our members
- Technical Advisory Group – raising quality of safety standards in the working environment of High Hazard Industry and
- Accredited Training – enhancing operational preparedness in emergency response and crisis management.

JOIFF welcomes enquiries for Membership  
- contact the JOIFF Secretariat -

*JOIFF Ltd. Registered in Ireland. Registration Number 362542.  
Address as Secretariat.*

### About The Catalyst

The Catalyst is the official newsletter of JOIFF, the International Organisation for Industrial Hazard Management and is published quarterly - in January, April, July and October each year. 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 posted on the JOIFF website.

Readers are encouraged to circulate The Catalyst amongst their colleagues and interested parties. The Editors welcome any comments, you can email comments to [fulcrum.consult@iol.ie](mailto:fulcrum.consult@iol.ie)

*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.*



*Images from the first quarter of  
Shared Learning 2016*





## New Members

During January, February and March 2016, the JOIFF Board of Directors were pleased to welcome the following new Members:

### Full Member:

**BP Global Response Team, Sunbury-on-Thames, England**, represented by Graeme Beglin, Tactical Response Advisor and Nick March, Response Advisor EMEA. The Global Response Team forms a small specialist response and advisory unit within the wider Intelligence, Security and Crisis Management function within BP Safety & Operational Risk division. The team has direct intervention, assurance, training and advisory capacity across all BP entities.

**County Durham & Darlington Fire & Rescue CIC, England**, represented by Tony Grufferty, Business Development Manager, Tina Greaves, Business Development Team and Anthony Mathias, Senior Trainer/Course Director. County Durham & Darlington Fire & Rescue Community Interest Company is a controlled company of County Durham and Darlington Fire and Rescue Authority set up in line with regulations and legislation governing trading for local authorities and fire authorities. County Durham & Darlington Fire & Rescue CIC delivers industrial firefighting and various related emergency response topics to emergency response/fire teams in Industry and other emergency services. They are also suppliers of commercial fire protection and firefighting equipment.

**Emirates Response Services, Abu Dhabi, United Arab Emirates**, represented by Damian Griffiths and Carl Hudson, Fire Training Officers. Emirates Response Services (ERS) is a joint venture company established in 2009 putting in place the governance framework to provide fire-fighting services to the UAE Armed Forces. ERS is a Fire Service based in the United Arab Emirates, tasked with training and maintaining competencies in accordance with the UK MOC Scheme and ICAO regulations. They have a large training centre and provide an operational fire service for the UAE Airforce on all its operational bases.

**Unity Fire and Safety (Unity Fire and Safety Services LLC), Muscat, Sultanate of Oman** represented by Kevan Whitehead, Managing Director and David Astley, QHSE Manager. Unity Fire and Safety provide specialist firefighter manpower, training, equipment and consultancy to the Oil & Gas Industry, Civil Aviation, Civil Defence and Military end users. They operate predominantly in the Sultanate of Oman and have experience throughout the Middle East

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

## Renewal of JOIFF Accreditation.

Following a recent audit, **FER Tűzoltóság és Szolgáltató Kft., Százhalombatta, Hungary** was awarded reaccreditation as a JOIFF accredited Training Establishment.

FER Tűzoltóság és Szolgáltató Kft has been a JOIFF accredited Training Establishment since 2009 and László Pimper, CEO – Fire Chief of the Organisation was amongst the first persons awarded a JOIFF accredited certificate when he successfully completed the first JOIFF accredited Team Leader course that took place in December 2000 in JOIFF accredited Training Establishment International Fire Training Centre, England.



Left to right: Alec Feldman. JOIFF Secretariat. László Pimper, CEO – Fire Chief. Gerry Johnson JOIFF Director of Standards of Training and Competence. Zoltán Mészáros, Chief Officer of supporting fire-fighting and rescue



### Self Contained Breathing Apparatus (SCBA) - Important checklists

by Mohamed Elagrab, QSSP, MBA

#### New SCBA Designs but with proven performance

When upgrading your SCBA fleet or considering shifting from one manufacturer to another, take the time to run through some basic performance and applications checklists

##### Air Delivery (Pneumatics)

- Make sure the pressure reducer cannot be over breathed
- Investigate proof of field performance in demanding firefighting and rescue applications: refineries, OGP plants, and city fire brigades – manufacturers can share some information here

##### Other Performance Considerations

- Proven performance at a wide ambient temperature range (-40°C to +60°C)
- ATEX certification for complete device
- Ease of maintenance and repair

#### Fit for application

##### Fire Service Applications

- Ergonomics and weight distribution
- Fail Safe – even when electronics malfunction
- Availability of breathing rescue options for 'man down' or fire casualties

- Clear washing and disinfection guidelines in the instructions for use

##### Industrial Applications

- Use of the right and safe materials in face pieces, pressure reducers and medium pressure air hoses to minimise risks of toxic gases permeation (especially H<sub>2</sub>S) – ask manufacturers for third party tests
- Ease of entry into tight confined space
- Ease of manoeuvring up and down caged ladders
- Convenient refilling of air cylinders to minimise lost time returning to operations
- Conformity to local occupational health care guidelines (for example G26 in Germany)

*Editor's note: Mohamed Elagrab, QSSP, MBA is Product Line Manager, Industrial SCBA with MSA Technologies and Enterprise Services GmbH. Mohamed has more than 12 years experience working closely with Oil & Gas customers around the world to design, supply and customise supplied air solutions. Mohamed is a big supporter of JOIFF and a member since 2011. For more information visit MSA's website at [www.MSAafety.com](http://www.MSAafety.com)*



## Chernobyl Disaster

30 years ago this month the Chernobyl disaster took place. Near the borders with Russia and Belarus, a nuclear power site was developed that was intended to have six reactors when completed. In 1986, four reactors had been completed and the last 2 were under construction. In the early morning hours of April 26 1986 during maintenance checks and testing on reactor #4, it exploded creating what has been described as the worst nuclear disaster the world has ever seen.

Unlike most nuclear reactors, where water is used as a coolant to moderate the reactivity of the nuclear core, the reactor in Chernobyl used graphite to moderate the core's reactivity and to keep a continuous nuclear reaction occurring in the core. When extremely hot nuclear fuel rods were lowered into cooling water, an immense amount of steam was created, which, because of design flaws in the reactor created more rather than less reactivity in the nuclear core of the reactor. The resultant power surge caused an immense explosion that detached the 1k-ton plate covering the reactor core, causing nuclear meltdown and releasing over 200 times the amount of radiation released at Hiroshima and Nagasaki into the atmosphere. Fallout could be detected as far away as Canada.

The explosion and fire killed up to 50 people with estimates that there may have been between 4,000 and several

hundred thousand additional cancer deaths over time.

Hundreds of thousands of firefighters and emergency workers came from all over the former Soviet Union to deal with the disaster and toiled for over two years to extinguish the fire, to bury radioactive equipment, homes, storage facilities, etc. and to build a "sarcophagus" - tomb around the plant to hem in the radioactive material that had collapsed into the reactor. Many of these people are now dead, disabled, or have committed suicide.

Over 7 million people and more than 63,000 square miles of land has been affected. To this day millions of people are still living and growing food on contaminated land and as a consequence the food they are eating is contaminated.

Because of the absence of widespread farming, hunting etc., there has been major growth in the animal life in the region and the region today is widely known as one of the world's most unique wildlife sanctuaries with populations of wolves, deer, lynx, beaver, eagles, boar, elk, bears and other animals thriving in the dense woodlands that now surround the silent plant. That is not to suggest that the area has returned to normal – it is estimated that the area with the long-lived radiation in the region surrounding the former Chernobyl Nuclear Power Plant won't be safe for human habitation for at least 20,000 years.



JOIFF/ ISTC International Fire & Explosion  
Hazard Management Conference  
Corinthia Hotel, Malta, November 3rd – 4<sup>th</sup> 2016



In November 2016, the first International Fire & Explosion Hazard Management Conference (FEHM) will take place at the 5 star Corinthia Hotel, St. George's Bay, Malta organised by JOIFF in association with JOIFF member organisation International Safety Training College (ISTC) Malta.

This ground-breaking Conference is designed to provide High Risk Fire & Explosion Hazard Management specialists from around the world the opportunity to listen, discuss and network with the world's foremost experts and specialist speakers on FEHM preparedness.

JOIFF have sought out speakers who are acknowledged experts in the field of FEHM who will present technical papers, case studies, major incident reports, lessons learnt, latest product developments and equipment demonstrations to a worldwide audience. Subjects that will be covered include:

JOIFF is delighted to announce the Keynote Speakers for this Conference:

**Vanessa L Allen Sutherland**

- Chairperson & Member of U.S. Chemical Safety Board
- Chairperson of the United States Federal Agency
- Chemical Safety Board

**Mu Shanjun**

- Vice President of SINOPEC, Research Institute of Safety Engineering
- Safety Expert of State Council of China

**Zhang Guangwen**

- Senior Engineer of SINOPEC Research Institute of Safety Engineering, Responsible for accident investigation in SINOPEC

Supporting the main subject matter of FEHM, a diverse range of topics will be covered by the expert panel of Speakers. This will include LNG modelling, insurance issues, Occupational Health and Safety, Ageing Installations, Passive Protection, Training and Competence, Foam, Operational Readiness, Mutual Aid etc. There will be opportunities for Question and Answers and networking and also included in the programme is a visit to International Safety Training College which will include practical Fire ground Demonstrations

The conference will be held at the 5 star Corinthia Hotel, St Georges Bay, Malta, a beautiful Spa Hotel with excellent conference facilities.

**The JOIFF Annual General Meeting 2016 will take place at the same venue in the afternoon prior to the Conference.**

You will find information on the speakers, subjects and schedule plus details on the venue and the event registration forms at <http://www.2016-joiff-fehm-conference.com/>

For further information, contact the Event Management team on Tel: + 44 (0) 1305 85 82 82 Email:







## Are we prepared for LNG?

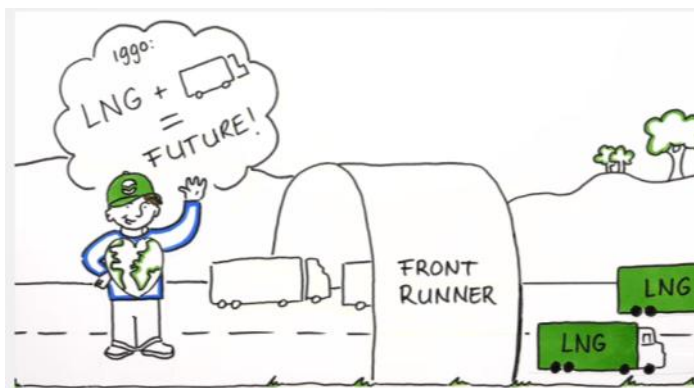
By Jeanne van Buren

Liquefied natural gas is very much part of our society. The video, which can be found on this link: [https://youtu.be/Ys6ln7GdV\\_4](https://youtu.be/Ys6ln7GdV_4), shows an array of applications of LNG. In practice there are even more applications.

LNG has an environmental friendly image, but we have to ask if we are all fully prepared for dealing with the various risks and associated incidents that can occur with this fuel. I was recently shown an animation of the development of incident where a sea container dropped on the hose at deck level of a LNG fueled vessel during bunkering operations. As a result of this, the hull of vessel suffered from brittleness at the location of the spill resulting from the contact with the cryogenic LNG. LNG has a temperature of minus 162°C. Due to evaporation of the LNG the temperature can drop further. LNG was also spilled on the water, as it has a lower gravity than water it floated in the water surface. The water current contributed to the spread of the LNG spill and the water also contributed to the evaporation of the LNG resulting in a natural gas vapour cloud. In the animation the vapour cloud ignited exposing the container vessel and the bunker vessel to flame impingement and radiant heat.

The use of LNG as fuel for engines of trucks and busses is increasing rapidly. Emergency responders may have the perception that incidents with vehicles with LNG fueled engines may be very similar to incidents with LPG driven vehicles, but that is not correct. Training of emergency responders for incidents with LNG is still very limited.

Are personnel at engine workshops for LNG driven vehicles aware of the risks when they are servicing these vehicles? Do they know the hazards of boil off gas from the fuel tank which might discharge in the workshop?



Screen capture of YouTube video from Rolande LNG as referred to above

Another example concerns the long-term strategic storage of LNG. Thermal ageing of these tanks will significantly increase when they are brought back to atmospheric

temperatures. Therefore it is common practice not to open these tanks for inspection every 10 years or so. Technically this is a perfectly good and safe policy. These tanks are usually opened once every 30 – 40 years. Because of the strategic storage of the LNG the contents of these tanks is only refreshed a few times at the most.

600 liters of natural gas is required to provide 1 liter of LNG. Impurities of the natural gas are removed as much as possible during this liquefaction process. But the impurities cannot be removed completely. As all natural gas contains ethane, propane and butane, the concentration of these impurities is also increased 600 times when natural gas is turned into LNG.

The boil off gas of the LNG will consist of methane only as ethane, propane and butane are less volatile than methane. These impurities will accumulate at the bottom of the storage tanks as they have a higher mass than methane. After 30 to 40 years of accumulation, these impurities can play havoc with instruments installed to control the process when the LNG is pumped from the tank for evaporation and distribution.

Table with properties of gasses

Substance Property	Methane	Ethane	Propane	Butane
Boiling Point °C	-162	-88	-42	-0,5
Melting point °C	-182	-183	-187	-138

Above -162°C methane is a gas, but ethane, propane and butane can still be a liquid while butane can even be present as a solid until it is heated above 138°C as shown in the table above.

As these conditions can only occur after decades they may not be common knowledge nor will they be incorporated in the training of the operators running these sites. Hopefully operators have sufficient knowledge and experience to identify these problems when they occur.

The use of Lithium ion battery powered bicycles is very wide spread. These batteries can suffer from intense fire. The first time someone called the emergency number reporting a bicycle on fire, they thought it was a hoax. And when they arrived on the scene the responders did not know yet what to do. The same can be said about solar panels fires on roof tops. The knowledge GAP on these issues could quickly be filled by sharing information and training.



training.

In the Netherlands a group called the LNG knowledge table (translated into English) – was established to share information, to accomplish a similar result for LNG.



*The Exelerate "FSRU Explorer"*

*Image care of LNG World News dot com*

In the past we did not have the tools and not always the knowledge to identify, prepare and train for these risks. Nowadays we have much more sophisticated options to determine the risks of innovative activities and share this information. We should challenge ourselves by showing that we have learned to effectively identify risks of new

innovative activities and that we can be prepared to control them 4000 years after the life changing invention of the wheel. The options, which include but are not limited to tests, 2D and 3D modelling, data collection, video training, table top and life exercises, electronic exchange of lessons learned, E-learning, etc., to accomplish informed based control of risks are plentiful.

JOIFF supports this learning process with the distribution of peer assist emails, by sharing information, publishing guidelines and the comprehensive program of the **JOIFF International Fire & Explosion Hazard Management Conference** later this year.

*Editor's note: Dr Jeanne van Buren is a senior consultant with Marsh Risk Consulting, based in Rotterdam and consults on specific risks related to the power, energy and (petro-)chemical industry sectors. This includes identifying potential hazards, evaluating these hazards and quantifying the associated risks and counselling on risk mitigation and control measures. She also provides training courses in Dutch and English. For more information contact Jeanne van Buren at*



## March 2001 to April 2016 Celebrating 15 years of The Catalyst!



*Editor's note: This edition of The Catalyst marks its quarterly publication for 15 years. We thought readers would be interested in reading the very first article that was published in the first edition in March 2001.*

Welcome to this first edition of THE CATALYST, the Newsletter of the Joint Oil and Industry Fire Forum - JOIFF. The choice of the colour green for the Newsletter masthead reflects the commitment of members of JOIFF to protecting and improving the Environment.

The word "catalyst" is defined in the Oxford English Dictionary as "a thing that precipitates change". We hope that THE CATALYST will do just that, by becoming a voice in High Risk Industry Worldwide working towards safer Working Environments, particularly for Emergency Services personnel.

We hope to carry articles and opinions of a Technical nature as well as

advising our membership of the activities of JOIFF as it strives to develop and grow. As you know, we recently started a drive for more members because if the Organisation does not grow, it will die. As well as this, the more members that we have and the more people that become involved, the greater will be our influence in making changes and improvements in peoples' attitudes, regulations and Standards that effect the way we all work.

Some of the articles in this first edition address some of the issues that effect the working environment of members and we thank the authors for their contributions. If you would like to comment on any aspect, please do so and we will start a comments/letters column in future editions.

We hope to circulate THE CATALYST to members and friends quarterly and welcome any contributions on relevant subjects

*Editor's note: The content of the first edition was:*

- *JOIFF Training Standards*
- *JOIFF Accredited Training*
- *Personal Protective Equipment (PPE): selection, use, care and maintenance*
- *Test and Survive*
- *Pocket (hand held) PCs.*
- *Microwave Caution*
- *Fatal Accident*
- *Mrs Merton's Column*
- *SERCO International Fire Training Centre*
- *JOIFF Accredited Training for 2001*

*We hope that our readers have found the 15 years of The Catalyst to be informative, interesting and at times stimulating and look forward to your support for the next 15 years and more.*





### About JOIFF's Levels of Career Qualifications

JOIFF has accredited a sequence of levels of career qualifications in emergency response – the JOIFF Diploma, the JOIFF Technician, Leadership – Leadership 1 (Team Leader), Leadership 2 (Officer), Graduate of JOIFF, Member of JOIFF and JOIFF Fellowship.

**The JOIFF Diploma** is a competency programme for full time and part time personnel who respond to emergencies. It covers necessary key skills, learnt and demonstrated by the student in practical training and exercises that allows them to deal competently with site emergencies.

**The JOIFF Technician programme** allows the emergency responder to enhance their knowledge and skills having already demonstrated their competence in Key Skills.

**The JOIFF Leadership programmes**, comprising **Leadership 1** and **Leadership 2**, are JOIFF accredited and have been developed as a path to the skills and knowledge of team leader and officer to personnel who are technically competent to a recognised standard and have core educational skills to a level compatible to the position.

These programmes which are drawn from National and International Standards are computer based. Each student is issued with an individual electronic portfolio which sets out a structured training path and in which each student's training and progress is tracked. An

important aspect of the programmes is that they are primarily carried out on the site within the area where the student is based using the facilities and equipment that is available to them.

**Graduate of JOIFF** is an award given to an individual who successfully completes the JOIFF accredited Emergency Response Technician Programme, plus part 1 (Team Leader) of the JOIFF accredited Leadership Programme or equivalent and has a minimum of 5 years full time service in an emergency response role.

**JOIFF Member** is a title awarded to a representative from any JOIFF Member Organisation who has shown significant professional attainment in Industrial Hazard Management activities and has a minimum of 10 years full time service in an emergency response role. It can be awarded through one of two routes:

**Route 1:** The award is made to an individual who successfully completes the JOIFF accredited Technician Programme, plus part 1 (Team Leader) and Part 2 (Officer) of the JOIFF accredited Leadership Programme or equivalent

**Route 2:** The JOIFF Executive may nominate a person for the award

**Fellow of JOIFF** is the highest award of JOIFF, and is given on the recommendation of the JOIFF Board of Directors to an individual who has made an outstanding contribution to Industrial Hazard Management activities.

### The JOIFF Roll of Honour - JOIFF's First Graduate

In February 2016, **Daryl Bean, Tech.JOIFF, International Fire Training Centre, Darlington, UK**, had the honour of becoming the first person to be awarded Graduate of JOIFF.

On receiving the award, Daryl said "The Graduate of JOIFF culminated a significant process of development and confirmation of proven leadership, including the use of Health and Safety requirements relative to emergency service delivery, preparing for emergency response through managing incidents from inception through analysis. The in-depth technical knowledge learned through the process is invaluable. This award and designation is a career highlight. Knowing the standards and expectations of the JOIFF community and the emergency response fraternity gives high regard to this achievement."





## The JOIFF Roll of Honour - The JOIFF Diploma

During January to March 2016, the following persons were awarded the JOIFF Diploma:

BP Exploration Operating  
Company Ltd.  
Sullom Voe, Shetland, Scotland

Abu Dhabi Company for Offshore  
Petroleum Operations Ltd. (ADCO)  
Abu Dhabi, United Arab Emirates

**Andrew Freshwater**  
**Daniel Gear**  
**William Johnson**  
**Darren Kirby**  
**Shane Winson.**

**Dumisani Mlilo Dip.JOIFF**



Shane Winson, Dip JOIFF

Former Police Officer Shane Winson is in his third year of an OPITO approved BP sponsored pilot scheme, to train multi skilled Emergency Response Technicians based onshore at the Sullom Voe Oil Terminal in Shetland.

To date he has gained qualifications and certification in Petroleum Process and Engineering; Fire Fighting, Behaviour, Science and Engineering; Line Rescue; Oil Spill Control and Clearance; Trauma; HGV; ISSOW; MIST, BOSIET; IOSH and Gas Testing.



Dumisani Mlilo Dip.JOIFF

Dumisani Mlilo joined the fire department in Zimbabwe Nov 2003 for the Bulawayo Fire and Ambulance Services. In his 4th year he was given the opportunity to become an Instructor.

Supported by James "Jim" Snowdon former District Manager Charnwood, Loughborough Station, England, Dumisani studied for and sat for the Institution of Fire Engineers Graduate examination. He left Bulawayo Fire Department in 2008 and went to South Africa where he worked at a private Fire Academy as a fire instructor. After 5 years he was Senior Fire Instructor, he then worked for the Abu Dhabi Company for Offshore Petroleum Operations Ltd. (ADCO) where he currently continues in this position.

Dumisani says his first name Dumisani means praise God and his surname Mlilo means Fire. So others may have trained but he believes that he was born to be a Fire Fighter !!

## The JOIFF Roll of Honour - Member of JOIFF

### Mark Samuels MJOIFF

On receiving the news that Mark had achieved 'member' status, he stated "I am overjoyed, this is truly a magical moment" he added "the JOIFF membership is a fabulous community of like-minded individuals and companies who are striving for the same goal as I am, namely safe and effective emergency response".

During his 27 years with Essex County Fire and Rescue Service (ECFRS), Mark has progressed to his current role as the Divisional Officer (Operational Policy and Special Operations). He has acquired many specialist skills along the way, such as Fire Investigation, Hazardous Materials and Environmental protection, Marine and Port Operations, Fire Prevention and Inter-agency Liaison. In addition to these he has also specialised in petrochemical firefighting.

In undertaking this specialism Mark has formed and chairs a county-wide mutual aid. This ensures conformity of resources and equipment between COMAH petrochemical risk sites. It also enables, in addition to firefighting foam concentrate already held on a site, a further 100,000 litres to be mobilised to that site from other sites within the county within 90 minutes.

He has attended many large petrochemical incidents including Buncefield, where he was an essential member of the 'firefighting strategy' team and the Petroplus, Coryton Isomerisation fire where he attended as the Incident Commander.

As a result of these incidents and identifying gaps in the firefighting capability, Mark has designed and overseen the build of bespoke Bulk Foam Modules for ECFRS. These modules allow a range of proportioning methods to enable foam solution flows from 100 litres per minute up to 36,000 litres per minute.



As well as a passionate supporter of JOIFF, speaking at AGM's in Dublin and South Africa and the UK, he has also represented the Chief Fire Officers Association (CFOA) at the Buncefield Standards Task Group (WG6), the Energy Institute IP19 2011 update and CAP-EPLG Buncefield recommendations 23/24, where he is currently progressing a 'National Mutual Aid Framework'.

Mark is a graduate of the Institute of fire engineers and holds JOIFF diploma and JOIFF Technician certificates. He is a National Inter-Agency Liaison Officer, a Silver CBRN(e) Commander, a CBRN(e) Subject matter advisor and a National Airwave Operational Advisor. He has attended a large number of incidents which include the Buncefield Oil Depot Explosion, Tilbury Power Station Fire and the Petroplus isomerisation explosion.'

## The JOIFF Roll of Honour - Fellowship of JOIFF

### **Pine Pienaar FJOIFF**

Pine Pienaar serves as Senior Manager & Chief Fire Officer for the Sasol Secunda Complex in South Africa. He has been a professional in the Fire Services for 45 years of which 35 years were in the petrochemical environment. He started his career in the Pretoria Fire Department in 1972 and moved through the ranks and in 1981 was appointed as Chief Fire Officer for the Sasol One Complex in Sasolburg.

He is a Fellow of the South African Emergency Services Institute, a Fellow of the Institution of Fire Engineers and founder member of The South African Petrochemical Fire Chief's Committee.

Pine has been actively promoting JOIFF over the years and is a firm believer in competency based training for all firefighting crews, whether fulltime or part time, as this will make the difference in safely walking away from the most serious incident one can be faced with.

The Sasol Secunda Emergency Management Training Academy is also the only JOIFF accredited training facility in Southern Africa and this is testimony to the importance Pine places on being a competent firefighter.

Pine Pienaar is a member of the Board of Directors of JOIFF.



The Catalyst and the Directors of JOIFF extend congratulations to all those mentioned here.



H<sub>2</sub>S  
tested



## PremAire® Escape

Safe Escape in Harsh Chemical Environments

You always wanted a fast to don and easy to use respirator for a safe escape in harsh chemical environments?

Make your decision now. Choose **FAST – EASY – SAFE.**  
Choose **PremAire Escape** from MSA.



Convince yourself of PremAire Escape:  
[youtube.com/msasafety](https://www.youtube.com/msasafety)



## PRESS RELEASE

JOIFF Member organisation Hawkes Fire, Cleveland, UK, announce that they are UK Distributors for FIREMIKS, the Swedish original: a volumetric water motor driven foam proportioner. David Owen of Hawkes Fire explains how these devices are the first choice for applying foam solution from truck mounted, mobile or fixed systems.

In recent times proportioning accuracy, hydraulic efficiency and ease of maintenance have become the three critical elements when considering which foam proportioner to choose.

#### Flexibility: fire truck, portable & fixed system options

With Firemiks units, water is the only power source required. Firemiks provides fire ground flexibility in every sense because it can be fire truck, trailer, or trolley mounted as well as part of a fixed system. With all versions, a unit can be mounted far enough away from the fire ground so that both fire personnel & site water supplies are not jeopardised by the fire itself.



*Fire truck mounted option*

#### Firemiks versus inductors

Firemiks uses either a water driven positive displacement gear or piston pump which overcomes the back pressures & hydraulic mis-matching associated with inductors. As long as there is sufficient pressure to pump water, you will be able to pump the foam solution to the fire ground.

The piston pump version is particularly suited for use in systems with low start flows, for example, sprinkler systems, as well as for concentrates with low viscosity such as wetting agents. Both piston and gear pump versions can be supplied in mobile versions.

#### Environmentally friendly testing procedure

The environment and foam is a hot topic and whatever camp you're in it's a given that you want to prevent any unnecessary discharge of either concentrate or solution

into the ground. The more accurate the proportioning, the less is used so it's win-win in terms of cost (less concentrate used) and in ensuring that concentrate is not lost in testing. Firemiks allows you to test without discharging any concentrate or solution to waste.

#### Trailer mounted mobile solution

Firemiks meets or exceeds the recognised fire standards. The energy efficient 8-blade water motor (10 blades up to 4,000 lpm units) only takes the power needed to drive the foam pump, thereby minimising the pressure loss in the main water stream.

#### Maintenance

The gear pump is self-lubricating and therefore needs no regular oil change, making the water motor and pump maintenance-free. The only recommendation for static systems is that the water motor is turned once every three months – and this can be done by hand using a spanner, or by flowing water from the main pump. The piston pump type needs oil lubrication but the time between oil changes is much extended.

#### Options and flow rates

The range of materials and sizes is extensive. For freshwater, the standard hard anodised aluminium, coated with PTFE, on the water motor body is offered with aluminium bronze gear pump for the foam concentrate as standard. Seawater duty means a bronze water motor body is required. Piping and couplings is in AISI 316 stainless steel and brass. The range of flows covers every need, from 40 lpm to 12,000 lpm in various single unit set-ups to multiple set-ups that allow for increased flows, e.g. 2 x 12,000 lpm to achieve 24,000 lpm. Maximum pressure for gear pump types are 12 bar and for piston pump types 16 Bar. Standard dosing rates are 1%, 2% and 3%.



*Firemiks in fixed system with atmospheric foam tank*

For further information contact Hawkes Fire Tel. +44 (0) 1642 791022 website [www.hawkesfire.co.uk](http://www.hawkesfire.co.uk)





### UK Confined Space Regulations

By Eric Dempsey GFireE

On my travels, I am increasingly concerned at the lack of knowledge that Confined Space legislation exists in the UK that requires that not only must workers entering a confined space be trained but also that supervisors and managers must be trained. It seems that a whole generation of expertise has been allowed to retire or die off without their passing on their knowledge and expertise. This is reflected in the increasing Confined Space casualty rate.

The UK Confined Space Regulations are regularly updated by means of an ACOP (Accepted Codes of Practice) these have the same effect on the Act as a Standing order and form part of the regulatory system for the management of Confined Space in the UK. Many Countries around the world follow the UK Regulations and they are different in detail and scope to both the NFPA and JOIFF Standard.

The 3rd Edition ACOP to the UK 1997 Confined Space Regulations provides further guidance on hazards to be expected and included in any risk assessment prior to workers entering a Confined Space. Summary of changes in this 3rd ACOP edition include:

#### 1. Expansion of the guidance on definitions:

**Confined space** means any place, including any chamber, tank, vat, silo, pit, trench, pipe, sewer, flue, well or other similar space in which, by virtue of its enclosed nature, there arises a reasonably foreseeable Specified risk. Under these Regulations a 'confined space' must have both of the following defining features - it must be a space which is substantially, though not always entirely enclosed and one or more of the specified risks must be present or reasonably foreseeable.

**Specified risk** means a risk of:

- serious injury to any person at work arising from a fire or explosion;
- loss of consciousness of any person at work arising from an increase in body temperature;
- loss of consciousness or asphyxiation of any person at work arising from gas, fume, vapour or the lack of oxygen;
- drowning of any person at work arising from an increase in the level of liquid; or the asphyxiation of any person at work arising from a free flowing solid or the inability to reach a respirable environment due to entrapment by a free flowing solid;

**System of work** includes the provision of suitable equipment which is in good working order.

Some confined spaces are fairly easy to identify, for example closed tanks, sewers etc. but identification of others may not be so easy. A confined space need not necessarily be:

- enclosed on all sides – some such as vats, silos and ships' holds, may have open tops or sides;
- small and/or difficult to work in - some like grain silos and ships' holds, can be very large;
- difficult to get in or out of - some have several entrances, others have quite large openings or are apparently easy to escape from or
- a place where people do not regularly work – some areas such as those used for spray painting in car repair centres are used regularly by people in the course of their work.

#### 2. Additional examples of confined spaces to clarify new workplace risks e.g. specifically created hypoxic environments, fire suppression systems etc

Normal air is a mixture of oxygen and nitrogen, together with small quantities of carbon dioxide and other gases. When the oxygen content is lower than normal air e.g. when it is intentionally lowered for special applications, the resulting gas is called hypoxic air or low oxygen air.

Oxygen is critical for both life and combustion and the industrial applications of these environments include fire prevention systems which prevent ignition e.g. of papers and books in archives or libraries. These systems are also used to reduce oxidisation or oxidative degradation of fresh produce and other materials such as food, paintings, metals, for physical training and rehabilitation of athletes and in medical research. Such systems require an enclosed area which is airtight - this and the specific risk of a reduced oxygen atmosphere created within this area mean that these spaces meet the definition of a confined space and are subject to the Confined Spaces Regulations 1997.

Therefore, when a hypoxic air system is to be installed or has already been installed, it has to undergo a suitably detailed risk assessment to meet the requirements of both these Regulations and the Management of Health and Safety at Work Regulations 1999, including consideration of the suitability of such a system for the specific application at its location. This risk assessment should include consideration of at least the following:

- Is the system necessary?
- Can the same effect be achieved by any other mechanism that does not risk damage to the health of those working in the area?
- Is there a requirement for staff to enter the area?
- Where will the vented gases be discharged ? Higher concentrates of oxygen can also be dangerous and vented gases may be higher in CO2 concentration.
- Safeguards to ensure the oxygen level remains at a safe level bearing in mind the staff working in the area;
- Warning notices to advise of the existence of the confined space and, where oxygen levels are low enough to have a potential to cause injury, restrictions





on entry e.g. key systems, authorised entry passes

The risk assessment should also consider any protective measures that may be required to ensure the health and safety of all persons having access to the protected space. The concentration of oxygen will decide the type of precautions to be taken. Reduced oxygen levels have an impact on people working in the confined space and the lower the concentration the more likely that staff will be affected.

Consideration may need to be given to any pre-existing medical conditions employees may have and the impact working in reduced oxygen may have on those conditions. Health monitoring of staff who will be expected to enter the confined space as part of their role may need to be initiated. It may be necessary to establish a system for identifying changes in health that may affect the employee's ability to work in the confined space e.g. reduced oxygen can impact more dangerously on a pregnant woman and potentially the foetus. Training should be given in alarm recognition, evacuation processes and recognising the symptoms that oxygen deprivation may cause. Relevant personal protective equipment should be provided which may include breathing apparatus – this also will require training. It will also be necessary to assess the risks to employees from other issues such as the amount of exertion involved in the job which would increase respiration to provide more oxygen, temperature etc.

Amongst other issues covered in the 3rd edition ACOP are:

**3. To accommodate legislative or guidance changes e.g. the smoking ban, the requirements of Control of Substances Hazardous to Health (COSHH) Regulations and the Lifting Operations and Lifting**

#### **Equipment Regulations (LOLER)**

**4. Amendments to the explain the specific provisions relating to the need to check, examine and test equipment (monitors, personal protective equipment (PPE), respiratory protective equipment (RPE) included in COSHH and LOLER**

**5. Inclusion of a flowchart to help in the decision making process**

It is important that anyone with responsibility for areas that includes confined spaces should learn about the new regulations and remember the doctrine that "ignorance of law excuses no one".

More information is available from <http://www.hse.gov.uk/toolbox/managing/managingtherisks.htm> and <http://www.hse.gov.uk/pubns/indg258.pdf>

#### *Editor's Notes:*

*The above article is not definitive and only contains a summary and extracts from the relevant legislation. We are grateful to Eric Dempsey for bringing this detail to the attention of readers of The Catalyst. Eric Dempsey can be contacted at tel: +44 7931 566 295, email: [arcfiretraining@ntlworld.com](mailto:arcfiretraining@ntlworld.com)*

*Eric Dempsey is Managing Director of JOIFF accredited Training Provider Arc Fire Training Services Ltd. Eric has extensive experience in emergency response and training having spent 29 years with Merseyside Fire and Rescue Operations and Training followed by a number of years as a currently JOIFF accredited Training Provider. He is a Graduate of the Institution of Fire Engineer, has a UK NVQ in Training and Assessing, a Diploma in Supervision and Management, recipient of the UK Fire Service LS &GC Medal and a very committed and supportive member of JOIFF.*

## Diary of Events 2016

### June

13th – 16th **NFPA Conference and Expo**, Las Vegas, USA  
21st – 23rd **Firex International**, London, England

### July

27th – 28th **IFE AGM and Conference**, London, England

### September

21st – 22nd **The Emergency Services Show**, Birmingham, England

### November

2nd– 8th **JOIFF Inaugural Fire and Explosion Hazard Management Conference**, Malta  
8th– 10th **SECUREXPO**, East Africa, Lagos, Nigeria  
22nd – 24th **Oil Spill India**, Goa, India

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 diary is based on information given to the Editors and is published in good faith.



### Changes in European Union regulations relating to Personal Protective Equipment (PPE)



JOIFF Member organisation BTTG Testing & Certification Ltd, England, has sent us this important information.

The PPE Directive (Council Directive 89/686/EEC of 21 December 1989) was introduced to harmonise health and safety requirements for PPE in all Member States of the European Union and to remove obstacles to trade in PPE between Member States. Experience with the Directive has highlighted inadequacies and inconsistencies in the product coverage and conformity assessment procedures. In order to take account of that, certain aspects of Directive 89/686/EEC are in the final stages of being revised and enhanced.

The application of the Directive must be identical in all the Member States and therefore the Directive will be replaced by a Regulation, which avoids the need by Member States to transcribe it in to national legislation. The new PPE Regulation, which has been approved by the European Parliament and the EU Council, lays down rules on the accreditation of conformity assessment bodies, provides a framework for the market surveillance of products and for controls on products from third countries.

The latest draft of the new PPE Regulation is now going to the final stages of editing before publication and entering into force, which is expected to be the middle of the year and the Regulations will be applied 2 years after entering force.

The major highlights of these changes include the following:

- obligations placed on the supply chain have increased, covering manufacturers, importers and distributors;
- declaration of conformity now includes expanded requirements;
- categorisation of PPE is now contained in Annex I, Risk Categories;
- category III PPE (PPE to protect against risks that may cause very serious consequences such as death or irreversible damage to health) has increased and now includes PPE against drowning, cuts by hand held chain saws, high pressure jets, bullet wounds, knife stabs and harmful noise;
- technical documentation to support EC type-examination application has increased in complexity;
- Annex III requires that an assessment of the risks against which the PPE is intended to protect is required to be submitted with the technical documentation;

- category III PPE to be subject to type-examination (notified body involved) and either conformity to type based on product checks or conformity to type based on quality assurance (notified body involved); modules B + C2 or D;
- type-examination certificates to have a maximum validity of 5 years;
- renewal process outlined in the regulation;
- review of certificates by both manufacturer and notified bodies now included;
- existing certificates against Directive 89/686 to have a maximum validity of 5 years following regulation being applied.

For further information and assistance with CE Marking and auditing of PPE please contact the BTTG Certification team at [onestopshop@bttg.co.uk](mailto:onestopshop@bttg.co.uk) or visit [www.bttg.co.uk](http://www.bttg.co.uk).

#### **BTTG Testing & Certification Ltd**

BTTG Testing & Certification Limited is the leading independent organisation for the testing of Personal Protective Equipment and Construction Products. BTTG has a very long and distinguished history. It was formed in 1988 by the merger of the world renowned Shirley Institute and the Wool Industries Research Association (WIRA), organisations that were founded just after the First World War to undertake textile research. Since 1919, both organisations have made major contributions to the development of textiles and performance materials. BTTG is extremely proud of its heritage which continues to motivate its personnel to be the best of the best.

With almost a century of expertise in textiles and related products, BTTG continues to make major contributions to the textile industry through certification, testing, auditing, advice and training.

BTTG Testing & Certification Ltd. has an extensive client base – from yarn, fabric and garment manufacturers to retailers, consultants, contractors, multinational supply chains, government bodies and international aid organisations.

BTTG has clients in over 70 countries, and operates in eight countries with three laboratories located in the United Kingdom, one laboratory in India and offices in Bangladesh, China, India, Kenya, Pakistan, Singapore, Vietnam and the UK.



## JOIFF TRAINING NOTES

*"TRAIN AS IF YOUR LIFE DEPENDS ON IT, BECAUSE SOMEDAY, IT MIGHT!"*

JOIFF accredited training is within a Competency Based Training framework and involves course content, instruction and the facilities of the training provider/training establishment. All students who successfully complete a JOIFF accredited course/programme are issued with a JOIFF Certificate of Competence which has its own unique number.

JOIFF Accredited Course	Dates	Venue / Organiser
<ul style="list-style-type: none"> <li>• <b>Site Specific Courses</b></li> <li>• <b>Fire &amp; Safety Foundation</b></li> <li>• <b>Incident Controller SCBA Initial &amp; Refresher</b></li> <li>• <b>Confined Space Entry</b></li> <li>• <b>Confined Space Train the Trainer (with SCBA for High Risk)</b></li> </ul>	As required	<p>On your own site. Subject to Risk Assessment &amp; Facilities.</p> <p>For further information contact <a href="mailto:arcfiretraining@ntlworld.com">arcfiretraining@ntlworld.com</a></p>
<b>Site Incident Controller Training</b>	16 <sup>th</sup> - 17 <sup>th</sup> August 15 <sup>th</sup> – 16 <sup>th</sup> November	Eddystone Consulting Email: <a href="mailto:opportunities@eddistone.com">opportunities@eddistone.com</a> Tel: +44 1433 659 800
<b>Site Main Controller</b>	9 <sup>th</sup> to 11 <sup>th</sup> August 8 <sup>th</sup> to 10 <sup>th</sup> November	
<b>Industrial Fire Brigade Incident Commander Course (IFBIC)</b>	4 <sup>th</sup> April to 8 <sup>th</sup> April 4 <sup>th</sup> July to 8 <sup>th</sup> July 5 <sup>th</sup> Sept. to 9 <sup>th</sup> Sept. 21 <sup>st</sup> Nov. to 25 <sup>th</sup> Nov.	Falck Fire Academy, Rotterdam, Netherlands Email: <a href="mailto:fireacademy@falck.com">fireacademy@falck.com</a> Tel: +31 181 376 666
<b>Foam School</b>	4 <sup>th</sup> to 8 <sup>th</sup> April	School takes place in France: H2K Netherlands Email: <a href="mailto:info@h2k.nl">info@h2k.nl</a>
<b>Firefighting foundation course</b>	23 <sup>rd</sup> May to 3 <sup>rd</sup> June	<p>International Safety Training College Malta</p> <p>Tel: + 356 2165 8282 + 356 9998 5211 Email: <a href="mailto:sales@istcollege.com.mt">sales@istcollege.com.mt</a></p> <p>Contact: Patrick Abela</p>
<b>Incipient Course</b>	4 <sup>th</sup> April to 15 <sup>th</sup> April 13 <sup>th</sup> June to 24 <sup>th</sup> June	
<b>Industrial Breathing Protection/ Confined Space /H2S</b>	11 <sup>th</sup> to 15 <sup>th</sup> April 25 <sup>th</sup> to 29 <sup>th</sup> April 9 <sup>th</sup> to 13 <sup>th</sup> May 23 <sup>rd</sup> to 27 <sup>th</sup> May 20 <sup>th</sup> to 24 <sup>th</sup> June	
<b>Fire Team Member</b>	11 <sup>th</sup> to 13 <sup>th</sup> April. 2 <sup>nd</sup> to 4 <sup>th</sup> May. 16 <sup>th</sup> to 18 <sup>th</sup> May. 30 <sup>th</sup> May to 1 <sup>st</sup> June. 13 <sup>th</sup> to 15 <sup>th</sup> June.	
<b>Fire Team Leader</b>	11 <sup>th</sup> to 15 <sup>th</sup> April. 13 <sup>th</sup> to 17 <sup>th</sup> June.	

The dates above have been provided by JOIFF accredited training providers. If you wish to find out any information or make a booking, please contact the training provider direct, contact email addresses provided.

JOIFF Secretariat:

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