



The Catalyst

July 2015

JOIFF



Some Industrial incidents that took place during the second quarter of 2015

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



Dear JOIFF Members & Guests,

Ever hear of the Third law of thermodynamics (in relation to entropy)? Even if you have not heard of this law before, all of you know it simply by living and working every day. Without getting too deep into the definition and exposing my limited Physics background, one thing that is clearly implied by this law is that

.....Continued overleaf

☠☠ Mexico - 4 dead, 16 hurt in oil platform fire in Gulf of Mexico ☠ Brazil - 3 fuel tanks on fire at storage facility in Santos ☠ USA - One killed, one severely injured during tanker explosion on Oklahoma highway ☠ India - Two Workers Killed in LPG Pipeline 'Pigging' Incident ☠ UK - Chem Plant fire water run-off reaches local canal ☠ China - 6 Hurt at Paraxylene Plant Explosion & Fire ☠ USA - 1 dead, 1 injured in Magnegas explosion ☠ USA - California gas pipeline ruptured due to backhoe operations, Up to 15 people injured ☠ USA - Lightning blamed for two separate oil tank battery fires ☠ US - Lightning Strike Launches Fracking Storage Tank in the Air ☠ USA - 1 dead, 1 critical in Douglas Co. refinery accident ☠ China - Ethylene Oxide Plant



Distillation
Tower LOPC & Explosion ☠ US - Hydrogen pipeline fire during routine maintenance ☠ Mexico - Pemex offshore oil rig accident kills 2 ☠ Greece - Number of workers in critical condition from refinery fire climbs to 5 ☠ USA - Black Smoke Rises From Philadelphia Refinery Fire ☠ USA - Fire on Gulf platform; 28 evacuated ☠ Canary Islands - Fire damaged crude tanker with 90,000 tonnes of fuel wants to moor in Las Palmas





all physical things move towards the gradual decline into disorder and chaos unless there is specifically directed energy applied into the system to prevent it (some of you physicists may want to have a strong debate about this with me, if so, drop me a note, I can always learn more...).

This law cannot be avoided, and I would argue applies not only in the physical realm, but in virtually every part of our experience. Left to itself without applying work, equipment breaks down, fireproofing disintegrates, training gets forgotten, bodies weaken, will weakens, organizations fail, civilizations decline, fires burn until they consume the available energy or are extinguished by greater energy. On the other hand, when we focus energy in clear ways, things get done. You get the idea, and know it intimately.

This may sound like a long and unnecessary bunch of words to express a simple concept and perhaps you are right, but the point is that this reality is an absolutely unavoidable law that if ignored or misunderstood results in much frustration and wasted energy. It is like gravity - even if we ignore it, the ground won't get out of our way.

What I see frequently as I work with professionals around the world is the struggle with three main questions.

1. EXACTLY where to apply limited energy.
2. How to apply it.
3. How to get more energy to apply in the first place.

Effective and accurate answers to these questions help us effectively address the realities of the third law of thermodynamics for our organizations and ultimately result in our ability to apply energy into the arena of response.

This issue of *The Catalyst*, like all the others, seeks to provide some specific data points for our profession. I know that JOIFF is a resource that if used with focused energy will not only help answer the first two questions in the previous paragraph, but will provide additional energy to address the third. That is what our three pillars of Training, Shared learnings and the Technical Advice strive to provide. It is where we focus JOIFF's "energy".

If you will put energy into JOIFF, it takes the energy and multiplies it, and sends it back to you. JOIFF becomes a force multiplier for those that choose to use it, in the effort to address the third law. Think of it in that way, and it might change the way you apply your limited energy.

Highest regards,

Randal S. Fletcher

Randal S. Fletcher (Randy) JOIFF Chairman

PRELIMINARY NOTICE TO JOIFF MEMBERS

At the invitation of JOIFF Member Organisation and JOIFF accredited Training Establishment International Fire Training Centre the JOIFF Annual General Meeting (AGM) for 2015 will take on Wednesday 11th and Thursday 12th November 2015 at:

International Fire Training Centre
Technology House
Durham Tees Valley Airport

DARLINGTON
Co Durham DL2 1NU
England
Website: <http://www.iftcentre.com>

The AGM will be followed by a Technical Session on subjects relating to Emergency Response in High hazard Industry.

Further detail will follow.

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

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.



New Members

During April, May and June 2015, the JOIFF Board of Directors were pleased to welcome the following new members:

Full Members:

Brandweer Amsterdam-Amstelland, Amsterdam, Netherlands represented by IJle Stelstra, Manager R&P. The Fire Department of Amsterdam-Amstelland has a large team of full and part time responders who deal with a wide range of incidents in their area of responsibility. Brandweer Amsterdam-Amstelland is the main responder in the region Amsterdam-Amstelland of the Netherlands when it comes to Hazmat incidents. With the second largest harbour in the Netherlands, the risk of incidents with hazardous materials is among the highest within the Netherlands. Therefore, the Amsterdam Fire Department has a highly trained Hazardous Materials Fast Reaction Team to deal with hazardous materials, specially trained to deal with these kind of incidents. Also, their hazmat officers give advice to fire officers and personnel within the region and also to neighbouring fire departments. Website: <http://www.brandweer.nl/amsterdam-amstelland>

Centro de Treinamento e Controle de Emergencia Eirelime - Fogare do Brasil CTCE, Luis Eduardo Magalhaes – Bahia, Brazil represented by Adrequeciano Oliveira Macedo, Director. Fogare provide services in the area of work safety, environment, occupational health, consulting, advisory services, and training in the area dangerous materials, aviation, confined space rescue, rescue from heights and firefighting in the Countries of Latin America and the Caribbean. Website: www.fogare.com.br

Dublin Fire Brigade, Ireland, represented by Pat Fleming, Chief Fire Officer and Dennis Keely Assistant Chief Fire Officer. Dublin Fire Brigade (DFB) provides emergency response in Dublin City and County to incidents involving fire, road traffic incidents, flooding, chemical incidents, water rescue etc. Their area of responsibility includes large residential areas, docklands which includes a number of oil terminals, hospitals, chemical and other industries, Universities and research departments, the 4.5km long port tunnel, railways, the city's light rail links etc. All firefighters in DFB are registered paramedics and DFB also provides a full time emergency ambulance service to the city.

Industrial Emergency Services, LLC, Baton Rouge, Louisiana, USA represented by Tom Henning, President and Fire Chief, Chuck LaStrapes, Deputy Chief; Training

and Technical Services and Danny Garcia. Industrial Emergency Services (IES) was established in 1999 and it has a large full time and part time response team whose services include industrial fire brigade and emergency response staffing, providing a comprehensive set of preparedness services on a weekly, monthly and/or quarterly basis from threat assessment and hazard mitigation, training, drills, inspection, and maintenance, standby provider of emergency response services including firefighting, medical, confined space and high angle rescue, pipeline/terminal safety and response, OSHA, NFPA and other industrial-specific training, emergency response planning, fire planning consultancy, marine firefighting, inspection, testing and maintenance. Website: www.iesllc.com

Rig Systems Ltd, Okehampton, Devon, England represented by Allan Richardson, Managing Director and Douglas Kemp, Operations Director. Rig Systems Ltd. are providers of safety training, access, rescue and health and safety services. They are also suppliers of safety training, access and rescue equipment and provide safety, rescue and work solutions to hazards created through operating at height, in water or confined spaces including access and rescue at Industrial premises. A team of full and part time emergency responders provide medical and emergency response to the Industrial sector in the UK and International. Company Website: www.rigsystems.co.uk

World Wide Emergency Services Institute Ltd., Rio Claro, Trinidad and Tobago, represented by Ravi Roopnarine, Director of Operations, Trinidad and Tobago and Nicolas Coutsouvanous, Director of Operations Florida. World Wide Emergency Services Institute Ltd was established in 2009 in Miami, Florida by a group of firefighters and now has branches in Miami, Florida, Fort Lauderdale, Florida and in Trinidad and Tobago. They offer municipal and industrial programs which are accredited by the Florida State Fire College. All instructors are professional firefighters / State certified or Proboard fire instructors. Company Website: www.wwesi.org

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



Images: some industrial incidents that occurred during the second quarter of 2015



Fire load, Moisture and Personal Protective Equipment, Oh My !!

By The late Chief Charles Brush

Consider the following with regard to suppression activities involving a residential structure fire.

- Fire Load
- Steam and Moisture
- Personal Protective Equipment

Fire Load

The heat energy of today's residential fire has more than doubled from "the good ole days". The current fire load ranges from 6 to 26 pounds per square foot. The evolution of residential content from a dominantly natural products fire load (wood, cotton, glass, ceramics, wool, metal, etc) to a dominantly petro-chemical fire load (plastics, synthetics, etc) fire load is to blame.



House Fire by alyssahsadie on Deviantart.com

For example:

- Thermo-set plastics, with the burn characteristics of wood (leaving an ash) replaced wood, metal, and many other raw materials previously used where rigid form and strength was desired.
- Thermo-soft plastics, with the burn characteristic of a flammable liquid (melts, pools and burns) replaced glass bottles, cushion / stuffing material, canvas, clothing, and drapes. In addition, multiple new, have-to-have products were created incorporating the flexibility of the material as the name implies.

The potential energy or heat of the fire load has also more than doubled from 9,000 (about the same as wood) to around 20,000 British Thermal Units (BTU, the amount of energy required to raise a pound of water 1 degree Fahrenheit. For you new age folks, 1 BTU = 1,055 Joules). In real world perspective, a pound of today's fire load has more heat energy than a pound of gasoline (17,500BTUs). This places the fire load range from just under ¾ to just over 3 gallons of gasoline.... Per square foot! Residential fires burn hotter and faster today than

"back in the day".

Safety Point – Ceiling temperatures of 1100° Fahrenheit (F) are not extraordinary.

Steam and Moisture

Steam

The expansion rate of water is 1,700 to 1 at 212 °F. At 1100 °F it is about 4,300 to 1. One gallon of water (7.48 ft³) therefore has an expansion range from 12,700 ft³ at 212 °F to 32,164 ft³ at 1100 °F. (How many cubic feet are in an average living room or bedroom in your response area?)

Safety Point – How many times are firefighters steam burning themselves with their own hose lines? (Using your combat flow, how much water will flow opening and closing the nozzle as you do now and what is the expansion at; oh let's say 3,000 to 1.)

Moisture

Moisture is a greatly overlooked aspect lurking in the shadow of steam. Moist heat transmits up to 21 times faster than dry heat at 200 °F. The higher the temperature the faster the penetration (see a familiar pattern here?). A dry heat exposure at 130 °F, for example, will not result in a burn, but a 130 °F exposure with moisture content above 60% will result in a second degree or partial thickness burn. When the heat is felt, the burning will shortly follow because of the rapid penetration.

Safety Point – Moist heat penetrating Personal Protective Equipment (PPE) and arriving at the skin with temperatures below 200 °F can and do cause burns to firefighters.

Personal Protective Equipment

PPE continues to evolve thanks to research and adaptations from the flight and space programs. The devil continues to be in the details and "wearing the gear and wearing it right". A firefighter can get in the habit of not wearing gloves, an astronaut, however, can only do that





once; if at all due to their zero tolerance rules. PPE is based upon layers of insulation including a space between you and the gear (which is a challenging gap to maintain).

The dominant burns while wearing PPE and wearing it right are from steam and moisture. As our PPE is not a closed system. Penetration occurs through the places where various components (gloves, hood, mask, and boots) join and by heat penetration through the PPE. Compression burns are normally seen at the shoulders, arms, back of the knee and hands, but can occur anywhere gravity, snugness or movement occurs. A compression burn can occur:

- When a firefighter is in a fixed stance or position for a period of time. The heat penetrates faster because of this compression.
- When an area of the gear, not previously compressed, is compressed by movement. The insulation is compressed by motion and the burn occurs.

Safety Point – Change your profile to the fire frequently, if you feel heat, pull the PPE away, do not pat it. (Non-believers: place a firefighter in gear on a cool morning or in a seriously air conditioned room and create compression points. Light up a thermal imager and take a peek.)

Safety Considerations

- Review current ventilation practices in dealing with our continuously hardened residential structures to get the

BTUs out.

- Revisit fire flow in terms of gallons per second rather than gallons per minute (the flash-over props were designed to be used with 12 GPM nozzles).
- Remember, you can still be burned while wearing the gear and wearing it right. Why tempt fate further?

This article was written due to several recent instate events involving steam burns. It was written based upon personal observation / research and supported by the article below which is an excellent / worthy read of itself.

Thermal Performance and limitations of Bunker Gear, Fire Engineering, 1998

<http://fire.nist.gov/bfrlpubs/fire98/PDF/f98066.pdf>

Editor's Note: Chief Charles (Charlie) Brush MS EFO was Safety Programs Manager, Bureau Fire Standards and Training, Florida State Fire Marshal. Before Charlie passed away in February 2013, he was a great supporter of The Catalyst and wrote many fine articles on a range of issues relevant to firefighters' health and safety, some of which we did not have the opportunity to publish. Through his articles Charlie introduced readers of The Catalyst to the dangers to firefighters of the illness that eventually killed him – cancer that he contracted during firefighting operations. The Catalyst has a number of unpublished articles that Charlie wrote which are as important and relevant today as they were when he wrote them. This article is one of those articles. Rest in peace Charlie !!



PRESS RELEASE: Voluntary Sector's Vital Role Highlighted at The Emergency Services Show

Increasing the dialogue and co-operation between the emergency services and the voluntary sector will be a key focus of The Emergency Services Show which takes place at the NEC in Birmingham from 23 to 24 September 2015.

Free to attend, The Emergency Services Show features a dedicated Emergency Response Zone where key organisations and charities from across the voluntary sector can showcase their expertise and support services at no cost. Bay Search and Rescue, British Red Cross, Maritime Volunteer Service, Mountain Rescue England & Wales, National

Association of Community First Responders, National Search and Rescue Dog Association, Royal Life Saving Society, Royal National Lifeboat Institute and The Salvation Army are among the many names who will be exhibiting there this year.

Visitors are urged to engage with exhibiting organisations to gain a deeper understanding of the capabilities of the voluntary sector and the breadth of work it undertakes. Many will be surprised to discover free support services, training opportunities and the potential for joint operations.

Among the organisations with rescue capabilities is the RSPCA. HQ superintendent Timothy Minty, says: "Generally people are not aware we have capabilities in rope, boat and water rescue." Another is urban search and rescue team, Search And Rescue Assistance in Disasters (SARAID). The NGO, which offers its services at no charge, is keen to meet with UK-based resilience organisations, emergency services and flood rescue teams. Meanwhile on the Leicestershire & Rutland 4 x 4 Response stand visitors can find out more about this group of volunteers who utilise their own vehicles and equipment to provide assistance to



the emergency services and community in times of severe weather or disaster.

Also exhibiting in the Emergency Response Zone are The Radio Amateurs' Emergency Network (RAYNET) and UK Civil Air Patrol. Established for over 60 years, RAYNET provides voluntary emergency communications using amateur radio and PBR, and does not charge for its services. UK Civil Air Patrol encourages volunteers with the right qualifications to fly light aircraft, including helicopters and autogyros, to support the blue light emergency services and local government civil contingencies with affordable air observation and air to ground photography. Chairman Tony Cowan MBE explains: "The use of a light spotting aircraft is particularly useful when the emergency involves an industrial or chemical accident, wildfires and serious flooding."

Sticking with aerial platforms new developments in exciting emerging drone/ sUAV technology can be experienced. Justin Pringle of Drone

Ops Ltd says "Gaining live intelligence and footage from the air will allow for the emergency services to make life saving decisions faster and support effective management of ground crew risk, with added use of multiple sensor selection we can further reduce the human risk considerably". Drone Ops Ltd will be speaking and exhibiting supported by RectrixAS Ltd.

St John's Ambulance also hopes to raise awareness of this aspect of its work. Peter Huckle, national events and emergency operations manager, says: "Many are aware of the first aid our volunteers provide in their communities and at events, like football matches, marathons and music festivals, but they don't always know about the work we do in schools training hundreds of thousands of young people or our campaigning work or the free direct education we provide."

In the light of austerity cuts it is not surprising that the voluntary sector is emerging as a key partner. David Brown, event director, The Emergency Services Show, explains why: "The emergency response

voluntary sector has a substantial resource of trained and skilled people, vehicles, equipment and premises that provide practical and emotional support before, during and after an emergency. This allows the emergency services to concentrate on the immediate needs of a crisis, freeing up vital resource."

The Voluntary Sector Civil Protection Forum (VSCP) confirms that the voluntary sector employs over 15,000 and has around 260,000 volunteers it can call upon in the event of an emergency. It operates more than 2,000 vehicles including ambulances, 4x4s, lifeboats and aircraft.

To register for free entry visit www.emergencyuk.com

The NEC is physically linked to Birmingham International Station and Birmingham Airport and is directly accessible from the UK motorway network. Parking for visitors and exhibitors is free of charge.

Falck Risc Maasvlakte

FALCK is a privately owned company with training centres worldwide to service the needs of high risk Industry. The FALCK training centre Falck Risc, in Masvlaakte, Rotterdam, The Netherlands focus is on the prevention of incidents within companies and sites in all industries. Realistic training is provided for emergency response to small and large scale industrial incidents, indoor and outdoor fire incidents, incidents with hazardous substances and other emergencies.

FALCK Risc has been a JOIFF Member organisation since 2008 and was first audited and awarded JOIFF Accreditation status in that year. Since 2008, the accreditation of Falck Risc has been renewed annually. The most current renewal of Falck Risc's JOIFF accreditation followed an audit in June 2015 of the policies, protocols and procedures relating to the Establishment, Instruction and Courses provided by Falck Risc as JOIFF accredited.



From left to right: Gijss Brouwer, Project Manager, Falck, Imco Dantuma, Certification and Quality Coordinator, Falck Safety Services, Steve Watkins, Product Manager Falck Risc, Robert van der Veen, Director, Falck Risk, Gerry Johnson, JOIFF Director of Standards of Training and Competence, Alec Feldman JOIFF Director of Organisational Management



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For further information please contact your local MSA affiliate or visit MSAsafety.com



Would You Like To Step Into These Boots???

By Pine Pienaar FIFireE;FSAESI;NHDFireTech

My phone starts ringing, waking me up from the first part of a well-deserved night's rest. I do not switch on the light as to spare my wife the agony of the sudden awakening and battle to press the green button to answer the phone. After the third attempt the voice on the other side comes to life...."Fire at Unit X, Please respond!"

I stumble out of the bed; get dressed in a hell-of-a-hurry; grab my phone and car keys; go for the back door; have to return to cancel the security alarm in the bedroom; unlock the door; get into the car; open garage door and gate; make sure both are closed again and speed off to the plant.

Now the mind takes over....

What can I expect from a fire at Unit X? What previous experiences have I had? Will the first responding crew know where to stage?

Seeing the first images of the fire makes the mind go into overdrive...

The colour of the flames tells me it is hydro-carbon/gas/light chemicals? The size of the flames tells me the pressure is high/medium/low? The size of the fire tells me it is a spill/contained in a bund/spread over a large/medium/small area? The sound of the immediate surroundings tells me it is a pressure fed fire/the plant is still in full operation/busy shutting down/already shut down?

I stop my car, get my bunker gear out of the boot, get dressed also in a hell-of-a-hurry, battle to get the fire boots on and the bunker trouser over the boot, grab my radio and start walking briskly towards the fire...what can I expect and what must I instruct the crew to do?

Get the cold stuff on the hot stuff and the white stuff on the red stuff...yes BUT...

Are all people accounted for, or do I need to activate search and rescue first? Water or Foam or Dry Powder or a combination of some or all? Extinguish or protect and do not extinguish until I know what the source is feeding the fire...gas/very light product must not be extinguished unless the source can be isolated immediately, or even be the first action to extinguish the fire? Is the fire spreading via drains, slopes and ditches? Why is it taking so long for the crew to get the fire appliances hooked up and start cooling? Must they use the fixed monitor, or hose lines and ground monitors first? Do I have sufficient resources on the scene or must I start mobilizing standby crews/more extinguishing media/support resources like fuel supply/refreshments for the crews/special tools/equipment?

The first cold stuff on the hot stuff and the white stuff on the red stuff are going full force...

What reaction can I see from the visuals projected at me from the fire? Flames changing colour? Heat subsiding? Height of the flames changing? Smoke emitted changing colour? Sound emitted from the fire changing, indicating pressure dropping?

Then all of a sudden the fire disappears and only heat waves remain with some emissions drifting around.

Do I call the total shutdown of actions or must I maintain some cold stuff on the hot stuff and the white stuff on the red stuff and for how long still? Are all my firefighters safe? Can I radio through that the fire is successfully extinguished?

I walk back to my car, take off the wet and smelly bunker gear and boots, get into my car and drive off wondering... *Why was I successful in extinguishing the fire? What made me decide on the specific actions? Was there a better/quicker/more effective way? Will I be able to defend the common reaction from the "very clever others" that stood on the side lines? Why did you take so long to get to the scene? Why did it take so long to get the first cold stuff on the hot stuff and the white stuff on the red stuff? Why did you use/not use foam/dry powder/water? Why did you not attack from the West/East/South North? Why...Why...Why...????????????????*

Getting back home I take the smelly bunker gear from the car's boot, spread it out on the lawn or a garden chair and table to try and get it dry and less smelly. Take off my smelly clothes and quietly enter the house...The dogs start barking and I trip over the chair...Oh what the hell...I switch on the kitchen light and fill the kettle. I go to the spare bathroom and get into the shower. I go back to the kitchen just to find that I never switched the damn kettle on. I grab the milk jug, take a few big sips. I go back to bed and roll around for what feels like hours. The alarm starts screaming next to my bed and I get up, get dressed, say goodbye to the spouse and kids, drive to work and wonder...

DO I belong in these boots at all????

Editor's note: Pine Pienaar is Senior Manager: Emergency Management in Sasol Secunda, He is a member of the Board of Directors of JOIFF. Pine has been a professional in the Fire Services for more than 40 years. He is a Fellow of the Institution of Fire Engineers, a Fellow of the South African Emergency Services Institute and a founder member of The South African Petrochemical Fire Chief's Committee.

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The JOIFF Roll of Honour

The JOIFF Diploma is a competency programme for both 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 is to allow the emergency responder to enhance their knowledge and skills having already demonstrated their competence in Key Skills.

Both programmes are drawn from National and International Standards and 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 are 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. The programme is assessed locally and remotely verified.

All students who successfully complete the JOIFF Diploma and JOIFF Technician programmes receive JOIFF accredited certificates. Those successfully completing the JOIFF Diploma programme can use the post nominals Dip.JOIFF and those successfully completing the JOIFF Technician programme can use the post nominals Tech.JOIFF after their names.

During January to March 2015, the following persons were awarded the JOIFF Diploma:

BP Exploration Operating Company Ltd. Sullom Voe, Shetland, Scotland
Lindsey Leslie and Stephen Denoon

The Directors of JOIFF and The Catalyst extend congratulations to:



Lindsey Leslie started with BP at the Sullom Voe Oil terminal as an Emergency Response technician in Sept 2013. Prior to that he worked as a fire fighter at Sumburgh Airport at the south end of Shetland, Scotland.

Lindsey has undertaken many courses since starting with BP including rigging, slinging, forklifts, truck and boat mounted cranes, RYA Day Skipper, foam testing, air purity testing etc. etc. and he even volunteered to attend the BP Mid Stream Conference in his first year at Sullom Voe



Stephen (Steve) Denoon joined BP at Sullom Voe along with Lindsay Leslie in Sept 2013. Prior to that he was employed by the Highland and Islands Fire & Rescue Service (HIFRS) in Inverness, Scotland where he was employed as a Watch Manager Instructor within the Learning & Development Department of the Fire Service. This role involved overseeing, directing and having overall responsibility for the delivery of a wide range of training throughout the whole of the HIFRS area – including instructing in Breathing Apparatus and confined space procedures, Road Traffic Collision procedures, Fire Behaviour procedures, Trainee Firefighter courses, Gas-Tight Suit training and other specialist courses such as Swift Water Rescue and Working at Height. Since joining the emergency response team in BPM Sullom Voe, Steve gained many more skills and qualifications to which he can now add his JOIFF Diploma



MSA Named as a 2015 World's Most Ethical Company by the Ethisphere Institute.



MSA Safety Incorporated (NYSE: MSA), announced that it has been recognized by the Ethisphere Institute, the global leader in defining and advancing the standards of ethical business practices, as a 2015 World's Most Ethical Company®.

The World's Most Ethical Companies designation recognizes those organizations that have had a material impact on the way business is conducted by fostering a culture of ethics and transparency at every level of an organization.

Being recognized in this manner underscores MSA's century-long commitment to developing and utilizing ethical business standards and practices that ensure long-term value to key stakeholders including customers, employees, suppliers, regulators and shareholders, said William M. Lambert, MSA President and CEO. Of the 132 companies recognized this year, MSA is one of only six U.S. industrial manufacturing companies to be honored and the only company recognized in the Safety Equipment category.

"On behalf of our Board of Directors, our Executive Leadership Team and our 5,200 associates around the world, we are incredibly proud and honored that the Ethisphere Institute included MSA in its 2015 list of the World's Most Ethical Companies," Mr. Lambert said. "At MSA we conduct our business along seven core values, with integrity at the center of that values system."

"The World's Most Ethical Companies embrace the correlation between ethical business practice and improved company performance," said Ethisphere's Chief Executive Officer, Timothy Erblach. "These companies use ethics as a means to further define their industry leadership and understand that creating an ethical culture and earning the World's Most Ethical Companies recognition involves more than just an outward facing message or a handful of senior executives saying the right thing. Earning this recognition involves the collective action of a global workforce from the top down. We congratulate everyone at MSA for this extraordinary achievement."

The World's Most Ethical Company assessment is based upon the Ethisphere Institute's Ethics Quotient™ (EQ) framework developed over years of research to provide a means to assess an organization's performance in an objective, consistent and standardized way. The information collected provides a comprehensive sampling of definitive criteria of core competencies, rather than all aspects of corporate governance, risk, sustainability, compliance and ethics. The EQ framework and methodology is determined, vetted and refined by the

expert advice and insights gleaned from Ethisphere's network of thought leaders and from the World's Most Ethical Company Methodology Advisory Panel.

Scores are generated in five key categories: ethics and compliance program (35%), corporate citizenship and responsibility (20%), culture of ethics (20%), governance (15%) and leadership, innovation and reputation (10%). The full list of the 2015 World's Most Ethical Companies can be found at <http://ethisphere.com/worlds-most-ethical/wme-honorees/>.

About MSA

Established in 1914, MSA Safety Incorporated is the global leader in the development, manufacture and supply of safety products that protect people and facility infrastructures. Many MSA products integrate a combination of electronics, mechanical systems and advanced materials to protect users against hazardous or life-threatening situations. The company's comprehensive line of products is used by workers around the world in a broad range of markets, including the oil, gas and petrochemical industry, the fire service, the construction industry, mining and the military. The company's core products include self-contained breathing apparatus, fixed gas and flame detection systems, portable gas detection instruments, head protection products, and fall protection devices. With 2014 revenues of \$1.1 billion, MSA employs approximately 5,200 people worldwide. The company is headquartered north of Pittsburgh in Cranberry Township, Pa., and has manufacturing operations in the United States, Europe, Asia and Latin America. With more than 40 international locations, MSA realizes approximately half of its revenue from outside North America. For more information visit MSA's website at www.MSAsafety.com.

About the Ethisphere Institute

The Ethisphere® Institute is the global leader in defining and advancing the standards of ethical business practices that fuel corporate character, marketplace trust and business success. Ethisphere has deep expertise in measuring and defining core ethics standards using data-driven insights that help companies enhance corporate character. Ethisphere honors superior achievement through its World's Most Ethical Companies® recognition program, provides a community of industry experts with the Business Ethics Leadership Alliance (BELA) and showcases trends and best practices in ethics with the publication of Ethisphere Magazine and The World's Most Ethical Companies Executive Briefing. Ethisphere is also the leading provider of independent verification of corporate ethics and compliance programs. More information about Ethisphere can be found at: <http://ethisphere.com>.



Foam – The Emerging Risk - JOIFF Executive Statement

Questions:

- What about Foam and all the environmental impact concerns that are resulting in (or will potentially have) very significant rule changes on the ways we, as responders, use (or not) foam?
- How should end users of the technology address this issue?

Introduction:

Though there has been no specific question sent into the “Ask the Experts” column in The Catalyst regarding proposed limits on foam usage and the environmental impact concerns, legislation is being proposed in many locations and we have received many requests for a JOIFF stated position. Our past experience of the many foam issues that have arisen is that there is nowhere near a unanimous opinion amongst our members as to what is the correct path to follow. There are many opinions out there and certainly room to disagree in this arena while still being technically sound, tactically effective and environmentally responsible.



There is some clear separation possible between opinion and objective data. We will attempt to identify some of these. As response professionals, we believe it is in our best interest and our responsibility/remit to introduce a balanced approach to the discussion and establish ourselves in this very significant issue.

As you all know, JOIFF is not a commercial business and we rigorously work to keep ourselves objective and avoid endorsing any specific business, product or entity except from a strictly technical aspect - and not in exclusion of others. We have several different foam manufacturer and or distributors as JOIFF member organisations and believe that this diversity only makes us all better as they each strive to develop technically effective and commercially viable products. There are many specialists from around the world who are working on the issue of Foam and the Environment and we are confident that good solutions will be found. It is not our goal here to

simply add another voice into the technical debate, but rather to offer a perspective on how organisations might address the management of this complex issue.

Discussion:

As it has been for many years, today, foam is still the basic and necessary tool for class B fires used across industry, the very target demographic of JOIFF, until a viable alternative is found. This is a topic with different answers and all are not necessarily right or wrong. Each may be the correct path dependent on multifarious factors of which JOIFF members MUST determine on a case by case basis.

JOIFF stands on a platform of recognition of each camp's position, however, recognising that each JOIFF member organisation must determine what is the correct decision for each of their assets. Thus each member organisation should insure that it has conducted an environmental and performance based impact risk assessment to determine the totality of exposure and derive an objective position asset by asset and describe that position within the asset's Fire and Explosion Hazard Management Plan.

Fire-fighting foam is indeed an '*emerging risk*' for our industry and never before has there been such a critical time to manage this risk professionally. Media reports of significant remediation cost at fire-fighting training establishments in the USA and Australia and potential legal threat of human health claims from the Persistent, Bio-cumulative and Toxic nature of some foam concentrates is starting to focus the mind.

There are many new foam formulations on the market all with the best intentions of reducing the environmental footprint from fluorinated compounds - two main industry drivers to this problem are reducing carbon chain length and the other removing fluorine surfactants creating so called F3 foams. However, whichever camp you are in and whatever your views (and some of these are very passionately voiced) on the future direction, technically all foams have the potential to impact the environment.

All of us within the high hazard Industries who extract, process, transport, store and dispense flammable/ combustible liquids rely on fire-fighting foam as the media of choice for mitigation of vapour or fire control and extinguishment. We live with the hazard which is fire-fighting foam and the management of its use through training and exercising, systems testing and incident management resulting in firewater run-off control requirements.

So we make a couple of statements and a question;

1. Hazard is a constant, it does not change and is ever present – one such hazard is fire-fighting foam.



2. Risk is variable – that is the degree of exposure which is a matter of choice and often a matter of how much money you want to spend to reduce the risk.

QUESTION: Do you really understand the totality of risk exposure matched to your foam use philosophy at your facility?

Every facility is different in response capability and philosophy, fixed systems, mobile emergency response (flowing foam from mobile rather than fixed systems) plant layout, secondary and tertiary containment, geographically, urban or remote, target or receptor vulnerabilities - there are no two facilities the same. Performance of foam is paramount to prevent escalation and domino effects, reduce asset damage, business interruption and reputational risk. Managing with high performance foams could lead to higher impact from runoff and potential clean up disposal and remediation cost. An alternative approach may be the use of lower performance foam, accept higher asset and consequential related losses but reduce fiscal risk associated with environmental management.

A further alternative is use no foam have a 'burn down policy' thus not adding chemical to the problem.

Each has its merits, however, each has its pitfalls – BUT the million dollar question (literally) is “do you know which is best for your asset?” – have management made the call? Does management even know a potentially significant risk and the scope of its cost exists? We would argue they do not in many cases.

A risk process must be developed – one which will provide a comprehensive fire-fighting foam impact assessment to

enable our senior leadership to make objective decisions not guesswork. Our industry needs to develop a good practice assurance and impact assessment risk methodology, one which can be consistently applied from one asset to the other to fully understand the totality of risk, to enable benchmarking asset by asset to fully appreciate where risk reduction dollars/pounds/euro are best spent. Managing residual risk is not new, however, understanding the risk in the first instance is fundamental to that process being a reality.

Some of the factor which may be included could be and are not limited to:

- Assessment of need
- Foam concentrate specification
- Physical Properties
- Fire Performance
- Guarantees
- Procurement procedures
- Storage
- Stock Management
- Concentrate Assurance
- Compatibility
- Systems Testing
- Containment Measures
- Contamination of equipment and systems on site
- Remediation
- Firewater management
- Disposal
- Training
- Site specific Risk Assessment

It's up to each JOIFF member organisation to develop its own answers based on its own impact study and research. This is far too complex a problem to make

Danger—Confined Space

Entering confined spaces results in a large number of tragedies. These are just some of the confined space tragedies that were reported during the last quarter of 2014:

Australia – Copper miner dies after being sucked into a pipe
 Bangladesh – Man and son die after inhaling toxic gas in septic tank
 Belgium – 2 workers die in confined space accident
 Canada – Worker dies in mine in Ontario
 Colombia – Death toll from Colombia one collapse climbs to 7
 England – Teenager dies after falling into farm silo
 Ghana - Illegal mining pit kills 3
 India – 2 youths drown in tank in Athani
 Indonesia – 4 miners found dead in poisonous well
 Ireland – Farmer dies in slurry tank incident
 Japan – 10 suffer carbon monoxide poisoning while

filming at old mine shaft
 Malaysia – Human skeleton found in sewage tank
 Mongolia – 20-year old mine worker dies of suffocation
 Nepal – 2 die of asphyxiation inside a water well
 New Guinea – 5 dead from suffocation on barge
 Northern Ireland – Man stable after slurry tank incident
 Pakistan – 4 die of suffocation in Lower Dir
 Peru – 7 marine workers dead after inhaling toxic gases
 Philippines – 2 miners die from suffocation
 Poland – 7 die after falling into septic tank on pig farm
 Saudi Arabia – 2 die in Jeddah septic tank incident
 United Arab Emirates – Worker dies, four in hospital after inhaling toxic fumes
 USA – Police identify 2 workers who died in sewer
 Zimbabwe – 7 miners perish in horrific 800mtr. Underground fall

This very tragic list of reports from all over the World is just a small percentage of the actual incidents involving



confined spaces that take place during the last quarter of 2014 alone.

A number of years ago, JOIFF identified the necessity to produce a Guideline that would give Best Industry Practice direction to those who engage in activities in Confined Spaces. The JOIFF Guideline on Confined Space Entry, developed by a JOIFF Working Groups of experts from JOIFF member organisations around the World was completed and put on the JOIFF web site for free download in July 2011.

A confined space is an enclosed, restricted, or limited space which, by virtue of its enclosed nature, creates conditions that give rise to a possibility of an accident, harm or injury to those partially or fully entering the space. Confined spaces are significantly more hazardous than normal workplaces. The hazards involved may not be unique to confined spaces, but are always exacerbated by the enclosed nature of the confined space. Persons should only enter a confined space for any purpose when it is not reasonably practicable to achieve that purpose without entering the space.

Before allowing persons to enter a confined space, hazard identification and risk assessment should be carried out to ensure that all risks associated with the hazards of the confined space are evaluated and controlled. Persons should not enter a confined space unless there is a system of work in place that has been planned, organised and can be carried out and maintained for the duration of

the entry, so as to render the work safe and without risk to health.

Persons who enter confined spaces, who supervise entry into confined spaces and who approve permits-to-work in confined spaces should be competent to carry out this work and should have the information, training and instruction appropriate to the particular characteristics of the proposed work activities. Before any confined space entry, suitable emergency arrangements appropriate to the confined space in question should be made.

The above 3 paragraphs are extracts from the Introduction in the Guideline and anyone who is currently or might be engaged in working for whatever reason in confined spaces, should read this Guideline and make themselves aware of the factors that need to be addressed in this activity.

Persons who are untrained in the necessary competences of their job role relating to confined spaces, should not be allowed enter a confined space and to continue with this hazardous work, it is necessary to maintain these competences.

JOIFF has accredited a number of Training Establishments to provide Confined Space training. For information see the JOIFF Training Page or contact the JOIFF Secretariat.

JOIFF Guideline on Foam – Croatian language version

During 2014, JOIFF was approached by Aleksandar Regent, Dr. Sc. in Environmental Engineering, Dipl. Ing. in Mechanical Engineering, a Senior Lecturer at the Department of Occupational Safety, Polytechnics of Rijeka, Croatia who requested permission to translate the JOIFF Guideline on foam into the Croatian language. Dr. Regent had already translated the JOIFF Handbook on PPE to protect against Heat and Flame into the Croatian language – available for free download on the JOIFF website - and so JOIFF was pleased to give this permission. As with the JOIFF Handbook on PPE, the translation of the JOIFF Foam Guideline into Croatian was a direct translation from the original with no changes to the original text which now formed part of the JOIFF Standard. JOIFF thanks Dr. Regent for his contribution which provides access to JOIFF's standards to the large number of emergency responders in many Countries who speak Croatian.

Aleksandar Regent, Dr. Sc. in Environmental Engineering, Dipl. Ing. in Mechanical Engineering, is currently employed as a Senior Lecturer at the Department of Occupational Safety, Polytechnics of Rijeka



(www.veleri.hr, aregent@veleri.hr), where he has been teaching courses on Personal Protective Equipment, Environmental Management, Physical Agents (protection from noise, vibration, lighting, ionising radiation, thermal environment factors) and Firefighting Equipment since 2006. He has also been the director of TPI Teh-projekt Inzenjering Ltd. Rijeka for 23 years (www.tehprojekt.com), a company specialized in fire protection equipment and



PPE manufacturing and 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). He has been registered as an active scientist within the national register of the scientists under the auspices of the Ministry of Science, Education and Sports and as a scientific assistant. He has published more than 100 professional and scientific papers. He has been working as 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 active in Croatian Standards Institute as the president of the HZN/TC21 Fire Protection and Fire Fighting Equipment for 12 years, the president of the

HZN/TC556 Personal Protective Equipment, a member of the HZN/TC557 Protective clothing and a member of the HZN/TC207 – Environmental management. He has been a member of the NFPA since 1983, a member of the SZPV – Slovenian Fire Protection Assn. and of the HUZOP – Croatian Fire Protection Assn. He has more than 40 years of working experience in the industry and 9 years of teaching experience at the Polytechnic of Rijeka. In his spare time, he has been an active mountaineer, climber and skier.

*Aleksandar Regent,
Dr. Sc. in Environmental
Engineering, Dipl. Ing.*



Diary of Events 2015

July

15th - 16th IFE International Conference and AGM

August

26th – 29th Intern. Assoc. of Fire Chiefs Conference & Expo Atlanta USA

September

22nd - 24th	Securexpo East Africa	Nairobi	Kenya
23rd – 24th	Emergency Services Show	Birmingham	England

November

2nd - 4th	Civil Defence Exhibition and Conference	Doha, Qatar
11 th – 12 th	JOIFF Annual General Meeting, IFTC,	England

January 2016

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.

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.

*"If you think that you can do it, that is confidence.
If you can do it well on an on-going basis, that is competence!"*



JOIFF TRAINING PROGRAMME FOR 2015

The following dates 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 Accredited Course	Dates	Venue / Organiser
Site Specific Courses Fire & Safety Foundation 4 x 1 Day Modules Incident Controller 2 or 4 Days SCBA Initial & Refresher Confined Space Entry Confined Space Train the Trainer (with SCBA for High Risk)	As required	On your own site. Subject to Risk Assessment & Facilities For further information contact arcfiretraining@ntlworld.com
4 Day Xtreme Foam Workshop	27th Sept. – 1st October	GESIP France Williams Fire & Hazard Control Details: http://www.europeworkshop.com/europeworkshop/
Industrial First Responder Course (5 days)	19th – 23rd October	Falck Risc, Rotterdam, Netherlands Email: industrie@falck.nl
Industrial Fire Team Leader Course (5 days)	28th Sept. - 2nd October.	Falck Risc, Rotterdam, Netherlands Email: sales@falck.nl
Fire Incident Command Course (5 Days)	6th – 10th July 7th – 11th September 23rd – 27th November	Falck Risc, Rotterdam, Netherlands Email: r.deklerk@falck.nl
Site Incident Controller Training 2 Days	22nd – 23rd September 2016 16th – 17th February 17th – 18th May	Eddistone Consulting Email: opportunities@eddistone.com Tel: +44 1433 659 800
Site Main Controller 3 Days	15th – 17th September 2016 9th – 11th February 10th – 12th May	
Industrial Safety and Emergency Response 3 Days	1st – 3rd September	H2K T. +31 174 41 48 72 E. info@h2k.nl www.h2k.nl

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