



The Catalyst

The Official Newsletter of JOIFF

June 2004

www.joiff.com

FROM THE EDITORS

This is the second edition of The Catalyst for 2004 and we welcome our growing numbers of Readers. Our policy is to bring you high quality articles on new developments and other happenings in the area of Emergency Services Management.

In this edition, we have an article from one of our regular contributors, Mike Willson of Kidde Products. We welcome new Associate Member / Sponsor of JOIFF, DuPont and are sure that you will find their article of great relevance and interest. Bill Marrs, of long standing Associate Member / Sponsor Ten Cate gives details of flame retardancy of fabrics, Steve Fahey of Associate Member Simulation reports on a new training simulator they have developed for shipping incidents and RGIT Montrose, Scotland tell us about their Emergency Response and Incident

Control Training. We are particularly delighted to publish details of the UK Airport Fire Officers Association who are beginning to work with JOIFF on issues of mutual interest and hope that this will be the first of many such contributions to The Catalyst.

Our other regular features - New Members, Training Column, Members Section, Diary - are also included in this edition.

In addition to The Catalyst, current information relevant to Emergency Services Management is posted on the JOIFF website. We sincerely thank our advertisers / sponsors without whom we could not function. We look forward to your continuing support

ABOUT JOIFF

JOIFF, the Joint Occupational Industrial Fire Forum, the Organisation for Emergency Services Management in Process Industry, is a grouping of Companies, represented by their Emergency Services Manager - or equivalent position - and nominated Deputies.

For the purposes of JOIFF Membership, a Process Industry is considered to be any Industrial / Commercial Organisation that is engaged in processing, storage, handling and/or transport of high risk materials and that has nominated personnel as Occupational Firefighters /Emergency Responders.

Associate Members of JOIFF are Organisations or Individuals who do not comply with the requirements for Full Membership but who share the same interests.

JOIFF provides a forum for discussion amongst peers, accredited training, information dissemination and technical advice.

JOIFF welcomes interest from suitable Organisations who wish to become Members or Associate Members - contact the JOIFF Secretariat, details on the back page.

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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

New Members

During the past three months, the Executive of JOIFF were delighted to welcome the following new Members:

Members:

Glaxo SmithKline UK. Ltd., Montrose, Scotland represented by Christopher M. Reid, Assistant Safety Advisor / Fire Support Manager. Glaxo SmithKline Provides Emergency cover to the Site with Full time and Part time Emergency Responders.

GE Advanced Materials, Bergen op Zoom, The Netherlands represented by Jeremy Barber, Emergency Preparedness Specialist and Rein Heezius Emergency Response Leader. GE Advanced Materials has a large Emergency Response Team of full time and mainly part time personnel.

Members - Associate / Corporate:

DuPont de Nemours International S.A., Luxembourg. represented by Elaina Harvey Marketing Executive and Andreas Fries, Marketing Manager, Emergency Response EMEA (Europe, Middle East and Africa region www.emea.dupont.com). DuPont is a science

company founded in 1802 and DuPont Personal Protection (DPP), a DuPont business unit, comprises five product families, each corresponding to specific and distinct risk situations. They integrate DPP's entire portfolio of products and services for Personal Protection Equipment in the following brands: NOMEX(R) - thermal protection, heat and flame; KEVLAR(R) - cut and abrasion protection; TYCHEM(R) - protection for hazardous-chemical environments; TYVEK(R) - protection from dry particulate and water-based chemicals; PROSHIELD(R) - general purpose protection. Further information can be found at www.dpp-europe.com See also the DuPont article in this edition of The Catalyst.

Pursuit Dynamics Plc. England.

represented by Paul Grimwood Operations and Technical Manager (Fire) and John Heathcote, Chief Executive Officer.

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

MEMBERS' SECTION

The Members of JOIFF have approved the first of the new Guidelines being developed by JOIFF to Best Industry Practice. The initial aim is to draw up a suite of JOIFF Guidelines to assist Members in their Risk Assessments and the first Guideline that has been completed is on Hydrant Testing. Work is currently being done on JOIFF Guidelines for Testing Wet and Dry Risers and consideration is being given to a Guideline on testing Gaseous Systems. It is hoped that the JOIFF Foam Committee will develop JOIFF Guidelines on aspects of Foam and no doubt other subjects will be covered as they are identified. This Guideline will be put on the Members Area of the JOIFF website and will be added to as other detail is developed.

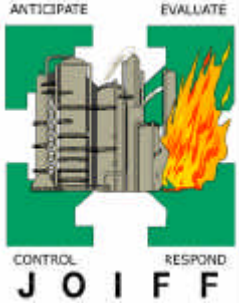
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Planning for the joint conference being organised by the Industrial Fire Journal and JOIFF continues and

Members will be advised shortly about the first email "round table" conference to be hosted by IFJ.

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The first meeting of the JOIFF South East Asia Region took place in Singapore a few weeks ago, chaired by JOIFF Regional Chairman I.M. Raj of SUT Sakra and attended by Alec Feldman of the JOIFF Secretariat. All the Singapore Members attended the meeting which provided the opportunity for a good exchange of information about the work being done in JOIFF Worldwide and in particular about local issues that the Members of the Region wish to address. As a result of the decision of the meeting , a Report is being prepared which, when agreed and submitted to the relevant Authority, is hoped will cause significant changes for Emergency Services personnel in the Region.



EMERGENCY MANAGEMENT & INCIDENT CONTROL

by
RGIT Montrose

Leading training & training management provider, RGIT Montrose provides emergency response and incident control training and assessment for the energy industries on a worldwide basis. Realising that taking control in a real emergency is not an easy task for anyone they have developed purpose built emergency management simulators to re-create potential emergency scenarios which are used to train managers and their teams to react and deal with emergency situations.

The purpose built Management of Major Emergencies Training Simulators are used for the training and assessment of Offshore Installation Managers and Emergency Response Teams and include a state of the art Computer Assisted Emergency Response Training and Assessment (CAERTA) System. The system was installed to simulate an offshore production platform's Fire and Gas panel and process facilities. In training, the system provides the delegate with the information on a platform's safety and process facilities in a manner similar to that which would be experienced in the offshore working environment.

The delegate is also able to interact with the system to perform a number of control room operations associated with emergency response. These operations include manual shutdown and depressurisation of process facilities and activation of fire fighting systems. In addition, the system enables delegates to participate in courses specifically designed for them. To ensure that the training is as appropriate and realistic as possible, company specific information is often used for the basis of the simulations.

Those delegates who have undertaken the training include Offshore Installation Managers, Control Room Operators, senior managers, emergency response teams and those personnel who wish to learn more about major emergency management.



RGIT Montrose undertakes emergency response training in the UK, Gulf of Mexico, and Trinidad using purpose built simulators and also conducts training worldwide using unique mobile simulators.

*Note from the Editors:
RGIT Montrose, Scotland, are the latest Training Establishment to be accredited by JOIFF as a Training Provider for JOIFF accredited Courses.*

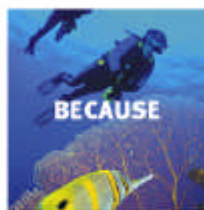
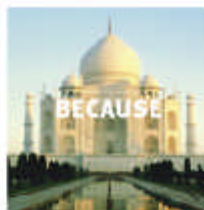




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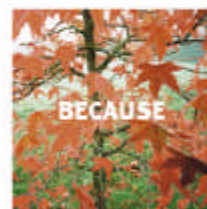
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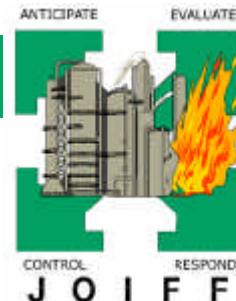
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DUPONT PERSONAL PROTECTION - PROTECTING THE WORKFORCE WITH THE MIRACLES OF SCIENCE

It is widely believed that both the injury rate and subsequent costs to organisations could be drastically reduced if the correct type of protection was used for the job in hand. DuPont Personal Protection (DPP) is committed to providing the best protection possible for people who work in potentially hazardous environments. People who are properly protected can work more efficiently, deliver better performance and can continue to enjoy life outside the working environment without the risk of personal injury caused by an unnecessary occupational accident.

Using specialised materials, expertise and technologies developed over 200 years, each brand under the DuPont Personal Protection umbrella offers solutions for personal protection from specific risks and levels of exposure in the workplace. DuPont integrate the entire portfolio of products and services for Personal Protection against: heat and flame, cut and abrasion, hazardous and non-hazardous chemicals, vapours, liquids, dry particulates and general dirt:

NOMEX® - for when the heat is on

Every day, workers in the petroleum and petrochemical industries, who work around flammable and explosive materials, are exposed to the hazards of flash fire. DuPont™ NOMEX® fibre gives protection which is inherent, "built into" the molecular structure of the fibre itself. It does not come from chemical treatment or add-ons. This means that the flame and heat resistance of NOMEX® garments is stable and permanent.

NOMEX® is available in a wide range of Personal Protective Equipment (PPE) from flame resistant coveralls to polo shirts, underwear and socks. All possess the superior heat and flame resistance of NOMEX® fibres, whose properties last the life of a garment, through rigorous wear and laundering or dry cleaning.

When compared to control tests using garments made from other conventional fabrics, tests show that NOMEX® scores very high on the safety scale as it does not melt or drip, unlike other fabrics. It also has excellent wicking properties and will self extinguish when removed from the heat source. NOMEX® withstands heat up to approximately 370°C, at which point it starts to carbonise, meaning that in the event of a flash fire or electric arc, the skin underneath the garment is likely to escape the 2nd or 3rd degree burns probable if conventional fabrics are worn.

To evaluate their performance under simulated lifelike scenarios, garments made with NOMEX® fibre are tested on DuPont's Thermo-Man® and Arc-Man™. Thermo-Man®, a life-size mannequin equipped with 122 thermal sensors, assesses the protective performance of garments and garment systems under realistic flash fire conditions, where temperatures can rise up to 1000°C. Arc-Man™ evaluates the performance of PPE worn, in particular, by utilities workers. It measures the ability of a fabric to resist ignition and break-open and to provide a thermal barrier between the arc blast and the skin. An electric arc, although over in a split-second, can generate heat in the range of 6,000 to 30,000°C.

NOMEX® thermal technology manages the extremes



DuPont's Thermo-Man® testing system evaluates the protective performance of PPE.

of heat yet still delivers incredible lightness and durability. The NOMEX® fibre family consists of: NOMEX® IIII, NOMEX® Anti-static, NOMEX® Comfort, NOMEX® Tough and NOMEX® Tough+, all of which have been specifically developed for primary protection such as work wear and fire fighters' clothing. Used widely in Europe, fabrics made with NOMEX® Comfort fine fibres are softer, more comfortable and have a higher rate of moisture wicking - ideal for wearing next to the skin in the form of jackets, trousers, coveralls, underwear, socks and accessories.

DuPont™ KEVLAR® - Excellent hand and wrist protection

According to statistics, hand and wrist injuries are among Europe's biggest safety issues, with injuries costing businesses millions of pounds per year. Where safety is crucial, KEVLAR® performance technology really makes a difference. Extraordinarily strong, light and cut resistant, gloves, sleeves and garments made with KEVLAR® brand fibre provide outstanding protection without sacrificing flexibility or comfort. In



In addition to their mechanical protection they are also flexible, breathable, washable and light weight, which adds up to a level of comfort and protection that workers want to wear.

All garments carrying the DuPont™ KEVLAR® and NOMEX® brands comply with stringent quality, performance and compatibility standards and are available only from manufacturers licensed under the DuPont™ KEVLAR® and NOMEX® Quality Assurance Programme. This ensures that the end user benefits from DuPont's experience, gains excellent quality garments and has peace of mind.

DuPont™ TYVEK® and TYCHEM® - Outstanding



Range of KEVLAR® gloves

barrier protection in a range of coveralls

Protective coveralls made of DuPont TYVEK® offer excellent barrier protection, durability, comfort and fit. TYVEK® garments and a new range of TYVEK® accessories can be used to protect the wearer in environments where the risk of dry particulates, liquid spills and water-based chemicals as well as dirt are a threat to the health or safety of personnel. Low weight, high strength, puncture, tear and abrasion resistance, vapour permeability, water repellence, rot resistance, and biological inertness are some of these. In addition, DuPont TYVEK® is low-linting and smooth.

For a higher level of protection against hazardous and chemical environments, TYCHEM® C and TYCHEM® F coveralls can be specified. These garments consist of a TYVEK® base with either a coating or film added to the base product. They offer a combination of chemical and biological protection in a lightweight, single garment. For high level protection against toxic corrosive gases, liquids and solid chemicals DuPont offers a TYCHEM® TK. fully encapsulated gas-tight garment.

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To help you choose the correct DuPont protective equipment for your task, DuPont has a team of technical experts who can recommend the best garments for protection against heat and flame, electric arc, cut and abrasion, specific chemicals, biological pathogens, dry particulates, liquids or general dirt. For details of the Techline Service, call 00 352 021 164 043 or for more information on all brands under the DuPont Personal Protection umbrella, please visit the new website at www.dpp-europe.com.

DuPont Safety & Protection is focused on finding solutions to protect people, property, operations and the environment by leveraging and expanding 200 years of DuPont experience as one of the safest companies in the world; its recognized excellence in science and technology; and its knowledge of key markets. DuPont (<www.dupont.com>) is a science company. Founded in 1802, DuPont puts science to work by solving problems and creating solutions that make people's lives better, safer and easier. Operating in more than 70 countries, the company offers a wide range of products and services to markets including agriculture, nutrition, electronics, communications, safety and protection, home and construction, transportation and apparel. Information about DuPont in the Europe, Middle East and Africa region is available in all major European languages at <www.emea.dupont.com>.

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DuPont Personal Protection

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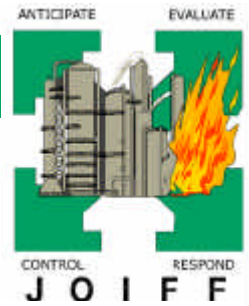
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AN INHERENT DILEMMA

by
Bill Marrs

Back in the mid eighties an attempt to convince a senior safety manager in a major oil company of the benefits of flame retardant coveralls over non-flame retardant polyester cotton garments was met with dogged resistance as he pondered the effects of a flash fire, one of the major risks in the offshore oil and gas industry. Apparently in his experience flash fires "...at worst singed the eyebrows..." and therefore the extra cost of flame retardant garments could not be justified.

This was his own assessment of the risks involved. Thankfully this particular safety manager was in a minority even at that time as the majority in the industry at least recognised the need for flame retardant garments to protect their workers.

However we do have to pose the question of how far safety issues have moved on in almost 20 years in the offshore oil and gas industry, particularly in relation to protection of workers from one of the major hazards, the effects of flame and heat.

Of course there have been tremendous steps forwards in many matters related to safety and protection of workers. Safety professionals within the industry have knowledge and skills that are way ahead of their predecessors and the companies themselves are acutely aware of the potential liability costs associated with inadequate protection of workers.

Personal Protective Equipment (PPE) is now used extensively and viewed with great importance by both employee and employer. Detailed risk assessment is commonplace and indeed is covered by legislation. Employers

not performing a risk assessment are in violation of European legislation, European Council Directive 89/656/EEC, which has in fact been in place since 1989. This directive obliges the employer to assess the risk and provide adequate PPE, and also to inform workers on the use of PPE and other health and safety issues.

Similarly a further European directive, European Council Directive 89/686/EEC, obliges PPE manufacturers as to the performance levels of PPE. Here minimum performance levels are defined to relevant European standards. In the case of flame retardant garments the minimum performance level is to the European standard EN 531 wherein a fabric or fabric assembly (simulating a garment) is subjected to a small ignition source and its performance rated in terms of flame spread, hole formation, afterflame and afterglow time and the presence or not of molten/flaming debris. Performance against convective and radiant heat is also assessed. EN 531 is a useful test in determining if a fabric is flame retardant or not and to a very limited degree basic levels of flame retardancy. However is cannot define the properties of a fabric under severe conditions of heat and flame eg flash fire or indeed if those properties may change under severe laundering, the latter of which is experienced in an offshore environment.

The offshore oil and gas industry can therefore select PPE on the basis of a measure which determines not the level of flame retardant performance but essentially only if the material is flame retardant or not.

In practise this market sector has been dominated for many years

by one class of flame retardant fabric, chemically treated cotton and cotton / polyester blends. The latter are produced by processes which add phosphorous and nitrogen compounds either into or onto the cotton fibre and cross-linking them to "lock" them into position. They are in effect the most basic of the so called permanently flame retardant fabrics. However one must exercise some care with these chemically treated cotton based fabrics as their flame retardant properties can be affected by for example chlorine bleaching agents and in some cases laundering conditions. The latter is particularly important if sufficient levels of phosphorous or nitrogen are not adequately fixed onto the cotton fibre and in cotton / polyester blends where the cotton is in effect carrying the whole of the flame retardant burden, there being no effect from the polyester fibre. There have been well known cases of chemically treated cotton fabrics burning during testing after commercial laundering thereby rendering them useless for their primary function, protection against heat and flame.

Laundering conditions on most offshore installations are known to be severe and it is a contention that an adequate risk assessment should include the potential effects of these conditions. At the very least chemically treated cotton garments should be tested for basic flame retardant performance periodically in such an environment and that this should be on an on-going basis if best practise risk assessment is to prevail.

The market for PPE in the offshore oil and gas industry is now dominated by one factor, the price



of a garment, and this has largely been the case for many years.

Recently this has intensified with intense supply side price wars between distributors and with the introduction by the major oil companies of online supply auctions with the effect that potentially inferior fabrics are beginning to creep into the sector. If this appears to be a negative view of the industry then perhaps the position is justified by the fact that garments are used in the oil and gas industry which are constructed from an outer shell of a fabric which will meet EN 531 but have an inner lining of nylon, a thermoplastic material which can cause the most horrific life threatening melt burn injuries - reason ; cost.

The picture is however not without some light as there are fabrics available from single fibres

or blends of fibres which are classed as inherently flame retardant. These fabrics are by their nature flame retardant and they do not rely on the addition of chemicals and nor do they lose their innate flame retardant properties by inappropriate laundering.

There is available a wide selection of inherently flame retardant fabrics including Ten Cate Protect's Tecasafe range which is not only inherently flame retardant but also anti-static, a property which can be essential in environments with potentially explosive atmospheres. Nomex is also used to some extent offshore. It was, for the right reasons, used extensively after the Piper Alpha disaster - then as the memory dimmed cost once again became important and companies forgot about adequate protection of their workers.

Inherently flame retardant fabrics are generally more expensive

than chemically treated cotton fabrics. However if the contention is that the use of these chemically treated cottons should because of their nature go hand in hand with a testing regime in line with best practice risk assessment then the cost differential would lessen dramatically. That major companies are not using best practise risk assessment is a cause for concern not only for the workers but also for the companies themselves with regard to their liability for their employees. Is the real dilemma to go the inherent route ?

Note from the Editors:

Bill Marrs has specialised in technical fabrics, with an emphasis on flame retardant behaviour, for over 20 years. During that time he has held both technical and commercial roles and is currently Sales Manager, UK and Ireland for Ten Cate Protect.

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THE UNITED KINGDOM AIRPORT FIRE OFFICERS ASSOCIATION - AFOA(UK).

AFOA(UK) is a re-launched version of the old Senior Airport Fire Officers Association which came into existence approximately ten years ago. Unfortunately this never proved to be a significant success as it was only open to a narrow band of high -ranking officers who in turn struggled to deliver work whilst dealing with issues on station. Allied to this was a certain amount of scepticism from some Airport Operators and Owners who misinterpreted our agenda and felt we were an officers union.

With this backdrop it was imperative that a newly formed Association (AFOA(UK)) had a clear mandate not to become involved in any form of industrial relations issue either in a direct or indirect manner. We would only be concerned with the development of standards, best practice and the promotion of communications throughout the industry.

In short we see ourselves as a professional body that would be able to offer advice, experience and knowledge on any technical issue relating to Aviation Fire Fighting.

The idea of opening the Association up to all serving Airport Fire Officers was to ensure that the Industry as a whole was represented whilst tasks and projects could be accomplished as the pool of resources would increase significantly.

Additionally, AFOA(UK) is being used as a great vehicle to develop the younger junior ranks as undoubtedly these personnel are the senior officers of the future.

Examples of the work undertaken to date include the production of a Generic Guidance Manual produced for the implementation of an in-house Maintenance Scheme for Fire Fighters. This will be expanded as and when the Supervisory and Managerial Roles have been identified and agreed.

Other projects have ensured that we encourage a better, more pro-active relationship with manufacturers, suppliers and training providers as we feel the need to be involved with fire fighting technologies and, their on-going development.

Strong links have been forged with the International Fire Training Centre, Teesside (Training Provider), KIDDE Fire Trainers (Hot Fire Simulators), Carmichael International (Fire Appliances), Angus

(Foam and Fire Fighting Equipment), Brothertons Specialist Products (Runway De-Icing Fluids) etc...

The Association has nearly every major airport/airport group as a member including:- The BAA, Manchester Airport Group, Highlands & Islands, the TBI Group, Birmingham, Bristol, Newcastle, Norwich, Exeter and London Manston to name but a few, which gives us a total of 37 members to date. As the Association has grown in size it has attracted Airports from Eire and the Scilly Isles who are now members, these include Cork, Dublin, Jersey and Guernsey.

The low category end of the market have been a little resistant in joining so far although we are making great strides to inform them of their significance in signing up to such an Association.

In conclusion, AFOA(UK) are now well established within the industry and has a strong rapport with legislative bodies in the UK such as the Civil Aviation Authority Safety Regulations Group (CAA SRG) as well as comparable associations overseas.

It is clear from our membership, manufacturers and CAA SRG, that there is such a forum in order for us to try and achieve a better degree of commonality amongst the airports and more in line with our counterparts within the Local Authority Brigades.

AFOA(UK) is only a young organisation and is striving to assist both the CAA SRG and the Airport Operators and Owners in achieving best practice within our industry. Our first steps have been difficult at times as you would imagine, however, from the work already completed by the Association the full support of the industry is beginning to fall into place.

It is hoped that the Airport Fire Officer Association (UK) has a bright future.

Note from the Editors:

AFOA and JOIFF have started to work together on areas of mutual concern and Airport Fire Services are welcome to join with JOIFF in the development and improvement of standards to Best Industry Practice.

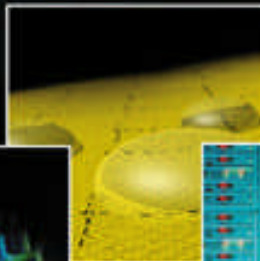
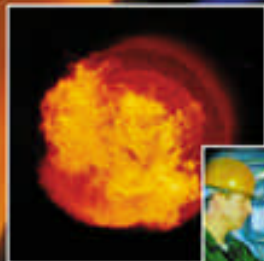


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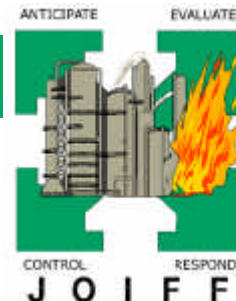
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NEW FLUORINE FREE TRAINING FOAMS

by

Mike Willson, Kidde Products

An innovative new range of Fluorine Free Foams (F3) for non-emergency applications has been launched by Angus Fire. The new foams are completely biodegradable and comply with the strict UK Groundwater Regulations Act 1998 since they contain none of the hazardous substances listed on the prohibited List I or restricted List II substances. Biodegradability and aquatic toxicity testing has been carried out to international OECD guidelines by specialist independent environmental testing authorities. This is consistent with Angus Fire's environmental testing policy for all its foam products.

The new F3 foams are natural protein-based products developed to meet the needs of organisations which face restrictions on the use of conventional fluorine-containing foams in non-emergency applications. They are ideal for enabling airport fire services and local authority fire services to carry out vehicle testing and foam training exercises, as well as enabling companies to commission fixed foam systems. They are increasingly being adopted by these sectors in the UK and elsewhere around the world. They meet the stringent non-emergency discharge requirements of the Environment Agency of England and Wales and the Scottish Environmental Protection Agency.

The new F3 products TF3 and TF6 mimic the induction performance and foam quality characteristics of certain leading front-line products. TF3 is a mimic for Petroseal 3% Film-Forming FluoroProtein (FFFP) and is also a close match for Niagara, the world's only UL Listed high fluidity

(polymer free) Alcohol Resistant FFFP. TF6 is a mimic for Petroseal 6% FFFP.

Natural Protein

Natural protein based foams (eg. FP, FFFP and AR-FFFP) are recognised by environmental bodies in UK and Europe as being readily biodegradable and less toxic to aquatic organisms and wastewater treatment bacteria than synthetic chemical based foams (eg. AFFF and AR-AFFF).

This is largely because the detergent component is acutely toxic to fish, other aquatic organisms and wastewater treatment bacteria. It has also been proven that there are major differences between brands within foam categories. Angus Fire has dedicated itself for over twenty years to ensuring that its foam formulations are as environmentally responsible as possible, while at the same time achieving the highest levels of fire fighting performance required by fire professionals. As a result Angus Fire is today the largest foam brand in the world with the widest range of natural protein and synthetic based products designed to meet every foam application.

Airport Fire Services

Airport Fire Services are increasingly moving towards the new F3 products for their routine vehicle testing and training needs. Small additional modified foam tanks on their vehicles are sized to accommodate 200 litres of F3 foam with separate switching between the F3 tank and front-line Petroseal FFFP main tank. Highlands and Islands Airports Ltd (HIAL) in the UK, the second largest airport group in the UK after BAA, has led this requirement and developed a

clever colour-coding system to avoid any possible risk of cross-contamination. In addition, Angus Fire supplies TF3 in green drums to distinguish them from front-line fire fighting products that are supplied in blue or black drums.

To meet growing demand for F3 training foams, Angus Fire also produces a synthetic based F3 called Trainol to mimic Tridol AFFF and alcohol resistant F3 products called TFA3 (mimics Tridol ATF AR-AFFF) and TFAL3 (mimics Alcoseal AR-FFFP)

Fluorosurfactants

Following the withdrawal of 3M from the fluorosurfactant market in 2002 there has been increasing attention paid to the safety of fluorosurfactants. More users have wanted to explore alternative fluorine-free routes to fire fighting in future. Despite intensive R&D, progress in fluorine-free development is slow. This is perhaps not surprising since it is like trying to produce the best fighter aircraft without using jet engine technology and solely reliant on propeller engineering!

The best achievements so far are for spill fire applications where ICAO Level A performance and 3B rating against EN1568:2000 has been achieved by the award-winning Angus Fire F3 product Syndura. One manufacturer is claiming ICAO Level B approval for a fluorine-free product, but evidence suggests this product does not pass consistently and could fail in hot climates, effectively reverting to a Level A performance with all the implications that this brings.

Why is there so much interest in fluorosurfactants? It all goes back to the problem with PFOS



(PerFluoroOctanyl Sulphonate), manufactured by the 3M Simon Cell electrofluorination process, and shown to be Persistent, Bioaccumulative and Toxic (PBT). PFOS was an ingredient and subsequent breakdown product of the 3M range of AFFF and AR-AFFF fire fighting foams and is highly mobile and accumulative in the environment.

Telomer-Based Foams

An alternative process called Telomerisation, which is used by manufacturers like DuPont,, produces fluorosurfactants with different chemical formulae that cannot breakdown to form PFOS. Although there is a theoretical pathway for C8 telomers to degrade to PFOA (PerFluoroOctanoic Acid), this has not been proven in practice. Recent scientific data confirms that PFOAs, whilst persistent like all fluorochemicals, are neither toxic to humans nor bioaccumulative in the environment. PFOAs have been confirmed as safe for continued use by the US Environmental Protection Agency (USEPA). In Europe, the UK recommended to Oslo & Paris Convention for the Protection of the Marine Environment (OSPAR 2002) that all PFOS-based substances should be added to the OSPAR list of substances of possible concern and the OSPAR list of Chemicals for Priority Action. However PFOAs and PFCs (perfluorocarboxylates) were recommended not to be added to either OSPAR list at this stage, as there was no evidence to suggest they would behave like PFOS.

Most of the telomers used in leading fire fighting foam brands like Angus Fire, Chubb Fire, Kerr Fire Fighting Chemicals, National Foam, Ansul and others use C6 telomers, a hexyl group which behaves differently from the

octanyl group and cannot breakdown or degrade to PFOS or PFOA. Telomer based fire fighting foams do not suffer the problems associated with PFOS and are therefore safe for continued use as front-line fire fighting foams. These telomer foams currently offer huge performance advantages over current fluorine free products. Of course equivalent AFFF type performance with fluorine free foams is the aim of most foam manufacturers and extensive development work continues with this aim, but realistically it is likely to be many years before this will be consistently realised.

Not Up To The Mark

No fluorine free foam currently available achieves a rating above a category 3B/3C in the EN1568:2000 internationally recognised foam standard. They therefore cannot be considered effective substitutes for AFFF, FFFP, FP, AR-AFFF, AR-FFFP foam types yet, which achieve 1A-2C ratings (1A being the highest and 3D being the lowest rating possible).

Care should also be taken when considering so-called "FluoroSurfactant Free Foams" (FSFF) as they are not fluorine-free. These can be misleading because they imply "fluorine free" since most fluorine containing foams do contain fluorosurfactants! However FSFF foams contain a fluoropolymer (instead of a fluorosurfactant), so they certainly do contain fluorine and technically are effectively just AFFFs and AR-AFFFs by another name. These FSFF products are certainly not fluorine free as some users have inadvertently been assuming and should be treated like any other non-PFOS based, fluorine containing product.

Conclusion

PFOS based products are undesirable and should not be

discharged to the environment. Scientific data also confirms that it is only PFOS which is a PBT, not PFOA or telomer based foams which are safe for continued use.

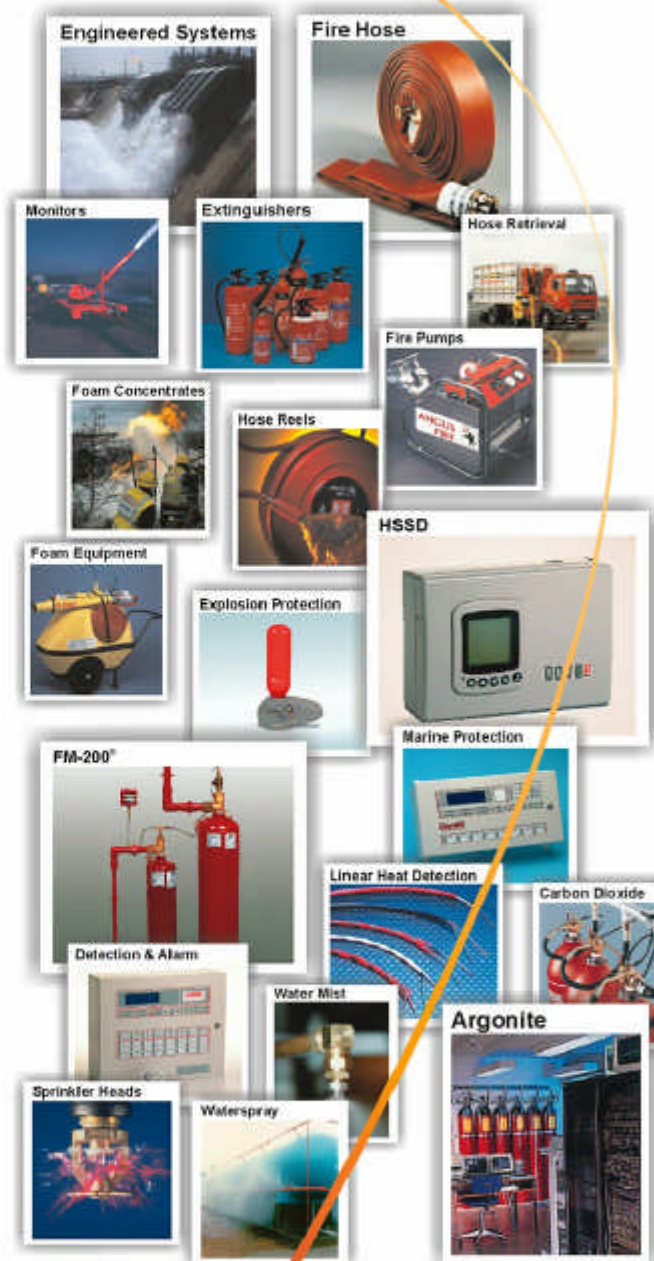
Telomer based fluorosurfactant foams, unrivalled in terms of fire and environmental performance, are consequently essential for continued use in fire emergencies to protect the life of fire fighters and the public, and to safeguard the environment.

Natural protein based foams have been shown to be more environmentally gentle than equivalent synthetic based products, and there are major differences between branded products. Angus Fire has dedicated itself for over twenty years to ensuring that its foam formulations are as environmentally responsible as possible, yet achieve the highest levels of fire performance required by fire professionals.

Fluorine-free foams are currently best suited to fire fighter training and non-emergency testing of foam systems to complement these front-line products and minimise discharges of fluorinated products into the environment .

FluoroSurfactant Free Foams are not fluorine-free. They do contain fluorine and are effectively just AFFFs by another name.

Kidde Products



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PRESS RELEASE



Simulation TERS Ltd based in Staffordshire in the UK are pleased to announce that they have been awarded the contract to supply a Ship Fire Training and Damage Limitation to Unit to the New National Maritime College in Ringaskiddy, County Cork.

The Simulator is a combined unit that provides facilities to perform fire and rescue training as well as damage limitation and repair to a breached engine room. The Contract was awarded at the end of 2003 and is due for handover in July of 2004. This contract marks an important step forward for Simulation TERS Ltd in Ireland. Simulation have been involved in a number of feasibility studies for a wide range of clients in Ireland. These studies have involved projects in the Civil Airport, Industrial and Local Authority Sectors. We hope that this work, which has been on going over the last three years, will result in Simulation being able to announce more successful contract awards over the next 12 months.

The ship simulator for the New Naval Maritime Training College has the following features. It simulates three decks of a ship. It has been designed to provide an engine room and accommodation areas including mess and sleeping facilities. It has a total of 4 pressurised fuel fires. Three fire scenarios will all be natural gas. They are: the Engine, a Cooker and a Bed Fire. There is one kerosene fire in this is in the Engine Room. The fire part of the simulator connects, by a series of internal corridors and external walkways and platforms, to the damage limitation unit. The damage limitation unit provides that instructors to simulate engine room water ingress as a result of wall fractures, hatch seal failure and high level fire main fracture. There are a total of 5 fracture points. Both the fire-training unit and the damage limitation unit have realistic ships doors, hatches, viewing ports and internal ladders.

All of the scenarios are controlled from a central control panel. This is located in the corridor between the fire training unit and the damage repair unit.

We will inform JOIFF when the project has been completed and will publish further details and photographs of the simulator in full training and exercise conditions. You will note from the timescales involved in fire training ground projects, from inception through to completion are very lengthy. The reason for these timescales is that the projects are extremely complex when all of the issues have to be considered. Choosing the right simulator in the first place is a long process. Many factors need to be considered. Location, the environment, planning and cost also provide other significant hurdles that need to be carefully thought through in order that the project is ultimately a success.

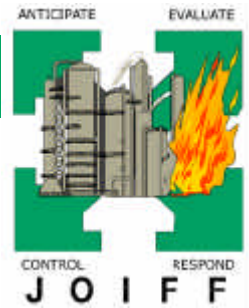
For many customers consideration needs also to be given to the potential income streams that could be generated by providing these facilities to train third parties. It is clear that in order for a project to be successful in this case then a business plan needs to be prepared in order to evaluate these options. These issues result in the project costs being quite high and therefore create problems for customers to make that first step. The first step is normally to seek approval for the capital expenditure

Simulation has developed a strategy to assist clients to overcome, in part, these problems. The way forward for some customers is to consider modular fire ground development. This process allows for a planned expansion and growth of a training facility over a 3, 5 or 7 year period.

The key to this solution is to assess the immediate needs, review the site location, satisfy environmental conditions and most importantly produce a "template"



- Fire Scenarios Deck 1 - Engine Room - Engine Fire - N Gas*
- Deck 1 - Engine Room - Bilge - Kerosene*
- Deck 2 - Accommodation - Cooker Fires - N Gas*
- Deck 2 - Accommodation - Bed Fire - N Gas Water Entry Points*
- Deck 1 - Floor - Engine Room - Hatch Seal Failure*
- Deck 1 - Floor - Engine Room - L.L. Wall Fracture*
- Deck 1 - Floor - Engine Room - H.L. Wall Fracture*
- Deck 1 - Floor - Engine Room - Hull - Fracture*
- - High Level Fire Main Fracture*



drawing of how the training facility may look in its completed stage after the 3,5 or 7 year period. This sound very daunting, as how can we plan that far in the future and how do we know what specific training facilities we need. These are valid points, but the success is to build into the infrastructure, i.e the site and services so that training modules can be added. What these training modules look like can vary throughout the course of the fire ground project.

We have recently had experience with some customers who are changing simulators from kerosene to gas to ensure they meet the environmental considerations. This is proving to be expensive. Other customers have built projects and which have proven to be highly successful. This success has resulted in more facilities being required on the same site. These are also proving expensive as the works, in particular the infrastructure, are very costly to revisit.

It is economical for any one wishing to develop a fire ground to consider this step-by-step modular approach. A facility can be installed at stage one that may have only one training rig, but this is controlled from a master control panel and fuel storage and delivery systems that can accommodate a total of three, four or fire more rigs in the future

We have a number of projects in the development stage at this present time that are adopting the measures described above and if anyone feels that it may something they wish to discuss further then please do not hesitate to contact us.

DIARY OF EVENTS

2004

June:	21 - 23	Fire Australia 2004.
July:	7 - 9	Storage Tank Fire Hazard Management Workshop, RPI, Aylesbury, England.
	8 - 9	5th International Fire Sprinkler Conference, Berli, Germany.
	12 - 14	Firefighting Foam & Foam Systems Workshop, RPI, Aylesbury, England.
	14 - 16	Institution of Fire Engineers. International AGM. Dublin, Ireland.
Aug:	12 - 15	AFC Conference and Exhibition. New Orleans USA.
	28 - 4 Sept	World Firefighters Games. Sheffield, England.
Sept:	7 - 9	FIRE 2004. GMEX, Manchester, England.
Oct:	3 - 6	IFE Malaysia International Conference, Kuala Lumpur.
	19 - 20	FIREX North, Harrogate, England.

2005

March:	15 - 16	JOIFF/Industrial Fire Journal Conference Manchester England
May:	16 - 19	International Fire Expo Birmingham, England.
June:	6 - 11	Interschutz. Hanover Germany.

Please contact the JOIFF Secretariat with details of any event that you think that JOIFF Members might be interested in attending.

*Note: The Catalyst is not responsible for the accuracy of dates and / or venues announced.
This is based on information given to the Editors and is published in good faith.*



JOIFF TRAINING NOTES

The following bookings for JOIFF accredited Training Courses have been made and places are available.
If you have Training needs which are not covered in this list, please contact the Secretariat.

Course Name	Dates	Venue
3 day Occupational Firefighter (Part Time)	13 - 15 September	Washington Hall
	4 - 6 October	IFTC Teesside
	8 - 10 November	Washington Hall
	13 - 15 December	IFTC Teesside
2 day Practical Firefighting	1- 2 September	Washington Hall
	23 - 24 October	IFTC Teesside
	25 - 26 October	Washington Hall
	29 - 30 November	Washington Hall
5 day Team Leader	6 - 10 September	Washington Hall
	25 - 29 October	IFTC Teesside
	15 - 19 November	Washington Hall
	6 - 10 December	IFTC Teesside
5 day BA Wearer	11 - 15 October	IFTC Teesside
10 day Breathing Apparatus Instructor (BAI)	18 - 29 October	IFTC Teesside
	20 - 31 October	Washington Hall
5 day BAI Refresher	4 - 8 October	IFTC Teesside
	27 - 31 October.	Washington Hall
Fire Extinguisher Instructor	9 -11 August	Humberside Fire
	22 -24 November	Brigade Industrial Training Centre

For further information on JOIFF accredited training and to book places on any of the courses, contact the JOIFF Secretariat.

The Catalyst is published by ABCom. www.abcom.ie

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