

The Catalyst

The Official Newsletter of JOIFF

September 2003

www.joiff.com

FROM THE EDITORS

This, the third edition of The Catalyst for 2003 covers a number of diverse areas of activity. Training and assessment for competence is becoming increasingly important in this modern World and as in many areas of Safety activity, the United Kingdom once again leads the way, this time in the development of a new system of Personal Development for Fire Service personnel - IPDS. We include in this edition an article giving comprehensive background on the System, mentioning the growing interest that there is in IPDS in the European Union and how a number of Countries including the United Kingdom and Ireland are currently preparing a proposal to have the System accepted as a pan European vocational development for all Fire Service personnel. We extend particular thanks to Daryl Oprey, IPDS Policy Development Team, IPDS Hub, The Fire Services College, Moreton-in-Marsh for his assistance with this article.

Kidde Products is one of the Sponsors of JOIFF and our regular contributor from Kidde, Jon Brittain has joined forces with his colleague Mike Willson, to provide a report on the Angus Emergency Service which helped provide urgently needed resources to

assist in the extinguishments of the fires following the recent explosions at the Respol plant in Spain. One of the most dangerous and unpredictable fires to tackle is what is called a Wildland Fire and their frequency and destructive power is increasing as the global weather systems change. We include in this edition some detail in Wildland Fire Environments.

Our regular features - New Members, Reactor, PPE and the Training Notes Columns - are also included in this edition as is the PPE column.

Our aim continues to be to bring you high quality articles on new developments and other happenings in the area of Emergency Services Management. In addition to The Catalyst, current information relevant to Emergency Services Management is also posted on the JOIFF website which is under continuous development.

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.

JOIFF Ltd. Registration number 362542.

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NEW MEMBERS

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

Members:

Caltex Oil (SA) (Pty) Limited, Milnerton, South Africa

our third Member from South Africa, represented by Willem J. von Gruning, Specialist Fire Protection and Security, with Xolani P. Maseti, Senior Fire Training Instructor, as Deputy. Willem is responsible for a large Fire Brigade who are suitably equipped to provide fire cover to the Plant and Processes.

Members - Associate / Corporate:

Angloco Limited, Bately, West Yorkshire, England,

represented by Mick France, Technical Sales Manager and Martin Aust, Sales Projects and Marketing Manager. Angloco design and manufacture specialist vehicle and rescue equipment.

EFA Sales (Pty) Ltd., Dunsuurt, South Africa,

our first Associate Member/Corporate from South Africa. EFA manufacture, import, supply, service and

train on Firefighting vehicles and equipment and are represented by Managing Director Trevor Fiford.

Emergency One Inc., Florida, USA,

our first Member of any category in the United States of America. E1, represented by Adele Evans, Sales Manager for Europe and Latin America are the largest manufacturer of Fire Appliances and Emergency Vehicles in the USA.

FirstFire Ltd., Halesowen West Midlands, England,

represented by Clare Jackaway, Sales Manager and Gerry Styler, Managing Director. FirstFire Ltd. are suppliers of Personal Protective Equipment and clothing to the Fire Industry.

This brings the total Membership of JOIFF to 49 Full Members, 14 Associate Members / Corporate, 3 Associate Members / Individual and a JOIFF Fellow from 18 Countries.

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

GD are pleased to introduce its new range of confined space equipment, emergency rescue and evacuation, safety harnesses, sked stretchers, tower rescue kits, blockfor, retrievable devices.



Safety Harness



Blockfor



Tripod and Winch

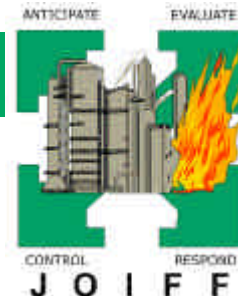


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ANGUS INTERNATIONAL EMERGENCY RESPONSE SUCCESS

Mike Willson & Jonathan Brittain

Keeping foam manufacturing plants in five countries on full readiness for a potential disaster that will hopefully never happen is a far from easy task! But being able to co-ordinate and deliver urgently needed foam and equipment supplies is nevertheless a critical element in the back-up service available to all Angus Fire customers.

Incidents rarely happen during normal working hours. So to ensure an instant and reliable response at any time, the Angus Fire Worldwide Emergency Service is regularly reviewed and tested. A dedicated telephone number +44 (0) 15242 61166 that puts the emphasis on simple communication is permanently manned, and when a call for help is received the emergency response procedure springs into action.

Rapid Response

All the planning and preparation proved worthwhile on Friday 15 August 2003 when the Angus Fire Worldwide Emergency Service was called into action following a tragic explosion and multiple storage tank fire at the Repsol YPF oil refinery at Puertollano some 150 miles South of Madrid.

Acting with all the speed the situation demanded, fire officers on the scene put out a call for emergency stocks of fire fighting foam concentrate. The timing of the incident, however, presented several challenges. Not only were many people away on annual holiday, but Friday was also a public holiday in Spain and much of Europe.

Despite these problems, Angus Fire responded immediately to the emergency phone call. Foam stocks held on stand-by at sister company Kidde Iberia in Tarragona were transferred to Puertollano by Friday evening.

Ready for Take-Off

More foam was needed, however. So it was decided to source extra supplies from the Angus Fire foam production facility at Bentham in the UK, the largest of its kind in the world. Within only four hours of receiving the call for help, Angus Fire had the foam stocks packed up and ready to go.

However, chartering a suitable cargo aircraft to transfer it to Spain proved more difficult. Most cargo aircraft had been pre-booked that weekend for humanitarian aid flights to Iraq and Liberia. The situation was made worse by the fact that no aircraft were available from US suppliers due to widespread power cuts across North America.

Undaunted, Angus Fire solved the problem by making arrangements for a Ukrainian-registered

Antonov, the largest heavy transport aircraft in the world, to be flown specially from Germany into nearby Manchester Airport. Less than 24 hours after the initial phone call, the aircraft was fully laden with foam stocks and on its way to Spain.

Keep on Truckin'



Additional foam stocks were supplied by road. The first truck was despatched from Bentham on Saturday evening. Since trucks are not normally allowed to travel in France on Sundays, special authorisation had to be obtained at short notice from the French Embassy in London. The provision of two drivers and co-operation between Repsol YPF and the police meant the truck could travel non-stop over the weekend apart from essential fuel stops. It arrived on-time at Puertollano on Monday morning under police escort. Several more trucks were soon on their way with replenishment supplies.

Throughout the weekend the foam plant at Bentham was stepped up to 24-7 production to ensure additional stocks would be available to Repsol YPF if required, and to avoid any disruption to normal deliveries.

A Job Well Done

This latest incident further strengthens the proven track-record of success which Angus Fire has established in delivering urgently needed supplies of foam to major incident sites around the world.

While most other foam suppliers were on holiday, or unable to supply the large quantity of foam required, or unable to cope with the complex transport logistics, Angus Fire got the job done.



The Catalyst

The Official Newsletter of Joiff

Chris Milburn, Managing Director of Angus Fire, was quick to credit everyone who played a role in the successful operation: "Our people showed their true mettle that weekend. I am extremely proud of their dedication and professionalism, and the way they worked together as a team to make sure the foam stocks reached Puertollano so quickly. Well done everyone, and thank you!

Special Offers For JOIFF Members

Angus Fire is pleased to offer JOIFF members and their mutual aid partners priority access to emergency foam stocks in the event of heavy demand following a major incident. This is in recognition of the large quantities of high risk materials processed, stored and transported by JOIFF members.

In addition, Angus Fire offers a price guarantee to JOIFF members. When you need foam urgently during an emergency, the last thing you want to do is worry about the price. So to avoid any confusion Angus Fire guarantees that we will supply emergency stocks of foam to JOIFF members at the same unit price as that supplied most recently during the preceding eighteen months. The only additional charge will be for special transport arrangements.

Whether foam supplies are needed during a fire to enable continued foam attack, or after a fire for fast replenishment, this latest incident proves that JOIFF members can rely on the Angus Fire Worldwide Emergency Service to provide invaluable assistance to fire fighters every time!

FIRE AID DONATION PACKAGE



Since 1995 BP International Plc has provided 2nd hand fire appliances, equipment and fire protective clothing to municipal fire departments from remote Siberian communities in Russia to Lusaka in Zambia & Brazilian interior townships that previously lacked resources for fire & rescue that are taken for granted in Western Countries.

Currently, assistance to third world fire brigades is not on the agenda of any of the major UN, World Aid Programmes or UK charities such as Red Nose African Aid. The BP sponsored Fire Aid Donation programme is the only one of its kind by any industrial, commercial or government worldwide.

As part of this programme the previous Scottish stockpile of 'Green Goddess' fire engines plus all spares and support equipment, was shipped out in 1996 and donated to the Azerbaijan State Fire Department where all 80 appliances are still on front line operational service.

The donations are sent to developing Countries where there is a real and genuine need i.e. grossly inadequate or no fire cover. One example of the type of

problem identified is in this extract from a review of fire protection in sub Saharan Africa countries in the mid 1990's where BP have operations:-

"Between the four countries of Angola, Malawi, Mozambique and Zambia there are a combined total of 16 working municipal fire trucks, all in poor condition, for a total population of over 40 million many of whom are in overcrowded towns and cities of 500,000 plus population. Lusaka alone has a population of 1.4 million and only one small mobile Japanese fire pump"

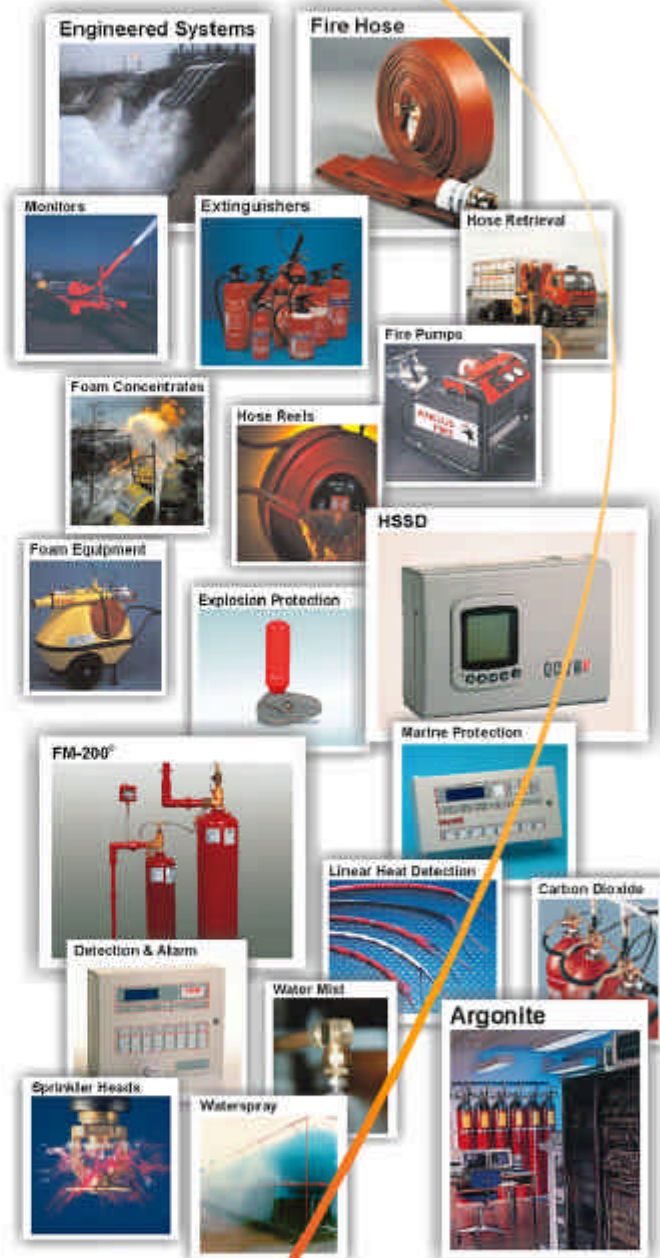
Recently, through this scheme, West Yorkshire Fire Authority donated fire appliances having repaired and refurbished them in their brigade workshops for shipping to third world and developing countries as part of a unique and distinctive programme of community assistance sponsored by individual BP business units with the help of other like minded organisations. Some of this aid was sent to Beira in Mozambique, Upington and Springbok rural townships in northern South Africa and Ras Shukheir in Egypt, the latter serving the local community and road network from the oil terminal.

Richard Coates, Founder of JOIFF and BP Group Fire Advisor personally supervises this project from sourcing the equipment to training and feeding the recipient Firefighters. Some of the problems that he encounters in this work are shown in this extract from his report on Lusaka, Zambia fire aid package 2001

"On arrival it was found that the fireman, who rarely get paid, had not had cooked food for some weeks, would have been incapable of the sustained effort required during the intense training period with the donated fire engines. As a first step BP provided one basic meal per person per day and repaired the sanitation on the fire station, which was unserviceable after years of neglect".

If any organisation has any fire equipment for which they no longer have use, or which they would like to donate to such a cause, please contact the BP Group Fire Adviser based at Sunbury or contact the JOIFF Secretariat.

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PPE CORNER

The European Standard for Firefighters gloves is EN 659. This Standard was first published in 1996 and now that an update has been published as EN 659:2003, EN 659:1996 has been withdrawn from publication. BTTG, British Textile Technology Group, is the foremost Testing laboratory in the United Kingdom for most items of Personal Protective Equipment including clothing and gloves and they have circulated an excellent document informing their clients of the changes in the Standard.

Most significantly, they say that in their opinion, it is unlikely that many Firefighters gloves currently certified to the 1996 Standard will meet the requirements of the 2003 Standard because of the higher performance requirements - some of them significantly higher - than in the original standard, particularly for radiant heat protection. The main changes are summarised as increase in performance requirements for abrasion, tear and puncture resistance and a significant increase in requirements for radiant heat resistance and contact heat tested wet. New tests are introduced for heat shrinkage, seam strength, removal time, optional whole glove waterproofness and resistance to liquid chemicals. What this will obviously mean is that manufacturers of



gloves must introduce new processes and designs and possibly new materials to ensure their gloves meet the new requirements, but the positive side for Manufacturers in doing this will be more Sales. Test Houses will gain major financial benefit also by the amount of testing and certification that will have to take place. And who will pay for all this - the User of course! All new purchases will have to be to the higher levels of protection - which will inevitably be more expensive. Have Users asked for higher levels of protection? If not the User, who has instigated this change? Is there a body of data supporting the requirement for extra levels of protection? The question is - why are higher levels of performance required and new tests introduced?

Early last year, the European Standards Organisation (CEN) Joint Working Group (JWG) for Firefighters PPE produced a report entitled "Relationship Between Firefighters Environments and their Personal Protective Equipment (PPE)". In this Position Paper, the JWG considered that the range of performance Standards for Firefighters' Personal Protective Equipment (PPE) appears to have been developed without taking due cognisance of actual conditions experienced as established in recognised scientific studies of Firefighters' environments which show that most of the working environments of Firefighters are at much lower exposures than the levels of perceived ultimate danger at which Standards of performance of Firefighters' PPE are set. What has resulted is a level of protection by PPE that probably submits Firefighters to unnecessary physiological stress on a consistent basis.

Amongst the conclusions of the JWG in this Report are:

- It is no longer acceptable for Standards-makers to consider themselves final arbiters in setting levels of protection to perceived levels of exposure and to assume that all PPE Standards must aim for protection to the highest possible levels as the only means of setting performance Standards.
- The results of studies of thermal levels in Firefighters' Working Environments show that the main risk to the health of a Firefighter in his/her working environment is not potential burns, it is the effect that persistent and continual heat stress has on the body, a big contributor of which is PPE that is certified to the relevant European Standard but which in many cases, is overprotective and not suitable for the conditions under which it is used.
- Limiting the time of exposure of persons to extreme Environments is a major factor contributing to Firefighter Safety.
- Before any further work is done on the revision and development of Standards for PPE for Firefighters, serious consideration should be given to the direction of this work, and the validity of the actual potential exposures and therefore the levels of performance that are to be established, should be authenticated.

It is obvious that the Working Group that prepared the revision of the Standard EN 659 took absolutely no heed of the recommendations of the experts in the JWG and indications are that other Working Groups are doing exactly the same because the revisions currently being worked on of the Standards for Firefighters Protective Clothing, for Firefighters Helmets and for Firefighters footwear, will all have requirements for higher levels of performance and new tests.

For the Single European Market to operate when it was established in the early 1990s, there had to be a free flow of goods between Member States and this required the elimination of differing National Standards. To effect



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this, a series of European Directives were issued to allow harmonisation of Standards across the European Union. The implementation of these Directives means that European Standards should set out Basic Safety Requirements for a product or range of products. In practice this means that European Standards should establish minimum levels of performance that will protect against hazards that will be identified by a User Risk Assessment. The stupidity of the System is that whilst the main criterion behind this excellent principal is User Safety, the Organisation writing the Standards has been given its mandate under a Directive solely about Products and those in charge of the System are increasingly insisting that User issues must not be considered in Product Standards.

Unless those developing Standards are aware of what happens in the Real World in the use of the products,

this means that there is a decreasing allowance for consideration of User requirements. The words included by the JWG in its report - "...perceived levels of exposure..." are unfortunately well chosen and what has happened and is happening is that because Users don't take the time and trouble to attend Standards meetings in sufficient numbers to bring to the discussions the realities of the use of products, the gap between what actually happens in use and what is perceived that happens by those representatives from a very small percentage of Manufacturers, Test Houses and National Regulatory Authorities who do attend the meetings, is getting wider and wider. And who pays the price - the User.

For Users to say that they cannot afford to attend these meetings is nonsense, because eventually they will be paying a whole lot more for a whole lot longer !!

INTEGRATED PERSONAL DEVELOPMENT SYSTEM (IPDS) EXPLAINED.

"IPDS is the cornerstone of the Government's reform of the human resource management of the Fire and Rescue Service"

United Kingdom Office of the Deputy Prime Minister White Paper "Our Fire and Rescue Service"

IPDS, the new Integrated Personal Development System, is a vocational system of personal development which has been adopted by the United Kingdom for all Emergency Fire and Rescue Service personnel - Local Authority and Occupational - regardless of whether they are service delivery or service support. Its application will enable the modernisation of the Fire and Rescue Service. The application of IPDS will become a requirement for all Fire Service personnel in the United Kingdom in November 2003. For the first time we have a suite of National Occupational Standards which are available for all the Emergency Fire Services to adopt ensuring that we are all able to drive down risk in our communities be they local authority or industrial services.

IPDS was developed as a result of a number of reports into Firefighter fatalities in the United Kingdom which identified certain deficiencies in the skills which in turn brought into question some of the Training methodology used. IPDS is founded on developing Organisations through developing people and is much more than just training - the key objective of the System is the structured development of individuals to help Organisations achieve their strategic objectives. An essential element of IPDS is that of ensuring that people have underpinning skills and knowledge required to fill a post prior to taking up the appointment.

The method of Assessment that has traditionally been used in the Fire Service has been based on examinations. An examination is a knowledge based test which has been used as an indicator of demonstrating a person's suitability for a qualification, for being appointed to a job position and for promotion. The Examination System can be an unfair form of measurement as it is merely a snapshot in time and it doesn't necessarily prove that the person who passes the exam is suitable for the role. Vocational Development on the other hand aims at preparing people for a job and uses "learning by doing" as the main teaching method. In vocational terms, the only meaningful indicators of potential for progression to the next role are personal qualities, attributes and evidence gleaned from performance in their current role. To reach this point, persons must have demonstrated competence in their current role and have actively maintained and continuously developed their skills through the process of development and assessment. People who reach this stage of progress will have been assessed against performance outcomes and will have demonstrated that they have acquired and consistently applied the knowledge and understanding that underpins their current role in the actual Workplace. The competence based approach is particularly important for Emergency Responders because if people can demonstrate competence in dealing with all the activities that can be expected to occur in their Work Place, then by



definition, they must be acting safely - and the main thrust of IPDS is to drive down the risk that accrues to the Fire Service, its people and the public.



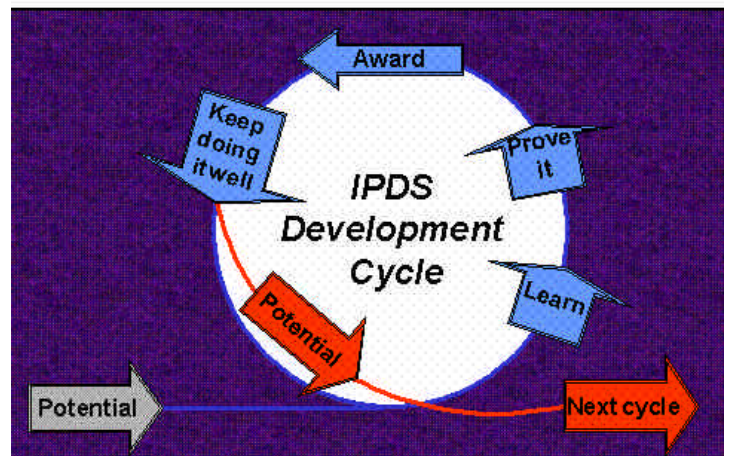
In the United Kingdom, the system of National Vocational Qualifications (NVQ and SVQ in Scotland) has been in existence for many years and established competency criteria for a wide range of roles in Industry and Commerce. IPDS incorporates this Vocational Award Model and currently within the S/NVQ system, awards are being developed covering the spectrum of Fire Service roles - it must always be remembered that it is the consistent application of the National Occupational Standards and not the achievement of the award which confirms competence.

United Kingdom Fire Service matters are the responsibility of the Office of the Deputy Prime Minister and the Deputy Prime Minister himself in a recent speech to Parliament, announced the acceptance by the Government of this system and the commencement of its implementation before the end of 2003.

The Integrated Personal Development Working Group has developed guidance for implementing and communicating IPDS- it involves contributions from various occupational fire services who have also assisted in the development of the National Occupational Standards. The group have also created a database of development modules which will assist in targeting the specific learning and development needs of individuals reducing the need to 'sheep dip' everyone through routine training courses. An administrative IPDS Hub has been established at the Fire Service College in Moreton in Marsh. It continues to provide advice and guidance in IPDS. The hub has also developed programmes of these modules to be delivered to replace its traditional courses. This modular programme of development will focus on the acquisition of knowledge and skills. The skills development includes those of key (core in Scotland) which are now very much part of mainstream education and so lifelong learning. For example, under the heading "People" amongst the skills identified are Interview techniques and incident debriefs; Leadership skills; Facilitating Learning and Development; Building Teams; Working within your community etc. Under

the heading "Finance", the skills identified are budgetary planning and control and Organisation finance and control. And under the heading "Operations", amongst the skills identified are Community Safety and Advice and Support, Incident Command - planning and monitoring; Investigation techniques; Hazards and Risks - buildings and structures; Drive operational vehicles; Dealing with fire incidents; Dealing with HAZMAT incidents etc.

All the development modules have been extrapolated from the National Occupational Standards (NOS) which form the focus of a Helix for development which traces potential roles in a Firefighter's career from point of entry as a new trainee, to Brigade Management. For the effective implementation of IPDS, changes will have to take place in other Fire Service activities. For example, adoption of the NOS and the development and measuring of role relevant skills and knowledge will mean a change in the identities of the various levels of Fire Service Management and the move from Rank to Role will begin in November 2003. The roles currently identified in the Helix are Firefighter / Control Operator, Crew Manager, Watch Manager, Station Manager, Group Manager, Area Manager and Brigade Manager. These Management roles will form levels of supervisory, middle and strategic. As there is currently a statutory requirement in the United Kingdom for Local Authority Brigades for examinations to be passed in order to rise in rank, this legislation will be rescinded / amended to allow for the new Management Titles and method of achieving these roles.



A great deal of work has been and is currently being done by the various Steering Groups to co-ordinate Fire Brigades' own Training Programmes to comply with the principals of IPDS and the prerogative to share resources. There is a large and growing



interest in this development Internationally and under the leadership of the United Kingdom, a group of Countries including the United Kingdom and Ireland are currently preparing a proposal to the European Union which it is hoped will result in the IPDS System being adopted across the European Union as the vocational development for all Fire Services personnel. If this can be achieved, it will be a monumental step forward in all aspects of the operation of Fire Services as for the first time, there will be common Standards for role for Fire Services personnel across the European Industry - Authority, Aviation, Occupational etc.

In JOIFF, we are very conscious of the changing Training Environment for Emergency Services personnel. From the outset, all JOIFF accredited Training has been Competency Based and the principal of the new JOIFF/ Institution of Fire Engineers (IFE) accredited site specific Competency Based Training Programmes will be developed to encompass the principals, aims and objectives of IPDS. We have commenced working on bringing the detail in line entirely with the IPDS. As the JOIFF / IFE accredited Programme results in qualifications, it is a first step towards what has been established within IPDS.

The four keystones of IPDS are:

- Task skills - being able to do something well
- Task management skills - being able to prioritise between tasks
- Contingency Skills - being able to cope when something goes wrong - problem solve etc.
- Environmental/People Skills - doing all the above in differing environments with different people.

The key criteria behind both IPDS and the JOIFF/IFE accredited site specific Competency Based Training Programmes are:

- Competence is the driver, not qualifications
- Don't ask "Train Me" ask "How can I be developed ? "
- Don't base Training on repetitive skills - base it on skill based development focussing on the outcome.

In the JOIFF/IFE accredited Training Programmes - which result in the IFE Preliminary Examination and IFE Technician Grade - under a regime of on-going assessment and verification competencies are developed on site including site specific requirements. Specialist Training and Continuous Personal Development can take place off site if the facilities are not available on site. On conclusion of the Programme, verified competencies are rewarded with the issue of Certification and personal development continues with further strategically developed site specific Competency Based Training on the same principals. As competence to role must be ongoing, the JOIFF Programmes also include methodology for verifying Maintenance of Currency of Competence. We will on your behalf develop and maintain close working relationships with those responsible for strategic development and implementation of IPDS.

Please contact The JOIFF Secretariat if you require any further information. For more detail on IPDS, go to the website at "www.fireservicecollege.ac.uk" double click on National Occupational Standards and go to Operations in the Community which will give you the IPDS Firefighter Role maps.

DIARY OF EVENTS

September 2003:	9th - 11th.	FIRE 2003 Glasgow, Scotland.
October 2003:	22nd - 23rd	Institution of Fire Engineers Republic of Ireland Branch, Annual Meeting and Exhibition, Cork, Ireland.
April 2004:	12th - 15th 26th - 1st May	Industrial Fire World Exhibition / Conference. Houston USA . FDIC Exhibition, Indianapolis, USA.
May 2004:	23rd - 27th	NFPA Exhibition and Conference Salt Lake City USA.
July 2004:	TBA	Institution of Fire Engineers. International AGM. Dublin, Ireland.
August 2004:	12th - 15th	IAFC Conference and Exhibition. New Orleans USA.
September 2004:	TBA	FIRE 2004 UK. Details to be announced.
June 2005:	6th - 11th.	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.

New: Evolution 5000

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WILDLAND FIRE ENVIRONMENTS.

The Catalyst has reported in previous editions on the activities of ISO TC 94 SC 14, the new Sub-committee in the International Standards Organisation, which was set up to write International Standards on Personal Protective Equipment for the full range of activities of Firefighters.

One of Working Groups of SC 14 is WG 3, the Working Group dealing with PPE for Firefighters when fighting Wildland Fires. *"Wildland Firefighting"* is defined as *"suppression action involving a fire in vegetative fuels such as forest, crops, plantations, grass or farmland."* Until this year, many Firefighter Organisations throughout the World thought that the only Countries with serious Wildland Firefighting problems were North America and Australasia, but the very hot / dry weather that has been experienced during the past many months in Europe has changed that opinion amongst many European authorities. Under European law - indeed under any effective Safety policy - the type of PPE chosen must be based on a Risk Assessment and in many cases, for financial and logistical reasons, it is common practice in Europe for Firefighters to attend such incidents in their standard Firefighting PPE - clothing to EN 469, helmets to EN 443, gloves to EN 659 etc. In the type of ambient temperatures experienced, particularly during this Summer in Europe, this level of personal protection can have serious implications for Heat Stress - one of the reasons why the SC 14 Wildland Working Group is developing more appropriate standards for PPE.

In order to ensure that the range of performance levels offered by each item of PPE is suitable, SC 14 is working to identify the environments in which Firefighters

will work for each of the categories of its Working Groups - Firefighting, Wildland Firefighting, Exposure to Chemical, biological and radiological substances and non-fire Rescue activities. WG 3, the Wildland Working Group, has recently published a most interesting paper which provides an overview of Wildland fires and some of the potential risk that Wildland Firefighters may face.

Typical of Wildland Firefighting is that Firefighters will work for days on end up to 16 hours a day, exposed to levels of general radiant heat flux of between 1 kW/m² and 8 kW/m², but in certain locations and conditions such as over-run or entrapment, the levels of heat flux can be as high as 20 - 100 kW/m². Ambient air temperatures can range from general conditions of 25° - 49°C up to 1200°C in severe fire over-run or entrapment conditions.



The main fuel component of a moving fire front will be fine fuels - cured grass, fallen leaves, small twigs etc. - with the top layer of this fine fuel primarily contributing to the forward spread of fire and the high flames of the fire front. It is assumed that the flame front, which contributes most to the radiation output of the fire front,

will be a result of the rapid combustion of fine fuels, and therefore will have a residence time which varies from 5 - 12 seconds (grass fires) to 1.5 minutes for logging slash fires with general Wildland fires being in between these times. Large downed woody material (>6 mm) will not be consumed in the passage of the fire front but instead will be consumed after the fire has passed - the ongoing or smoldering stage. The combustion of this material will contribute to the background heat released and will depend upon the amount of the material available to burn and its moisture content.

Exposure to the hazard of smoke is another issue addressed by this Report. The components of Wildland Fire Smoke are generally made up of:

- Respirable particulates (majority 0.1µm (PM0.1) decreasing in number up to 3.5µm (PM3.5))
- Carbon monoxide
- Carbon dioxide
- Benzene
- Formaldehyde
- Acrolein

The presence of genetically modified products and of pest control sprays or other additives to assist disease control or growth can result in off-gassing during combustion and is an issue that may need to be further investigated. As the temperatures reached cannot always be controlled, particularly at some small fires, these products may only be partially destroyed or decomposed to produce other products which are unknown at this stage.

Wildland fire over-run or entrapment is an incident in which a Firefighter may be caught in a temporary escalation in severe to extreme fire behaviour. The Firefighter is usually unable to retreat and is engulfed by flames. This entrapment can occur when Firefighters are on foot or in a



vehicle. Very high to extreme fire danger is not needed for an over-run or entrapment situation to occur. As an example, on one recorded occasion, a low forest fire was extinguished by rain minutes after the burn-over. The combination of unexpected or under-appreciated fire behaviour with long unburned fuels on slopes can quickly result in a Firefighter being caught unaware and in the path of a fire front.

The Report concludes that in order to provide the correct blend of protection against heat and flame and metabolic heat and heat stress, Wildland Firefighters protective clothing should

- Permit free evaporation of sweat and be loose fitting, light, well-ventilated and permeable to water vapour.
- Shield Firefighters from radiant heat
- Completely dissipate metabolic

- heat
- Allow free evaporation of 1 to 2 litres of perspiration per hour
 - Sustain thermal equilibrium and comfort despite wide variation in:
 - Fire intensity
 - Weather
 - Work intensity and duration
 - Minimise the risk of burn injuries
 - Minimise episodes of heat exhaustion.

It also concludes that During extreme fire activity involving fire over-run conditions, no PPE can prevent serious to life threatening injuries.

PPE to be used for Wildland Firefighting needs to provide a compromise between protection against flame and elevated temperature exposures whilst at the same time allowing the Wildland Firefighter the ability to work for extended durations by minimising the build-up of metabolic heat and heat stress and

PPE should also be durable to meet the conditions and terrain that may be encountered in such work.

Footnote:
 This incident actually took place earlier this year in a European Country. What PPE would you have chosen for the Firefighters dealing with it ??
 Firefighters were attending a Wildland fire of low level vegetation beside a main road burning over a large area and producing lots of smoke. As they were sizing up the incident and deciding what action to take, a motorist traveling at speed came down the road past them and continued to drive at speed through the smoke. Incredibly, another motorist was doing exactly the same thing coming in the opposite direction from the other side of the fire and of course the inevitable happened - the Firefighters heard with horror the noise of the collision. So now the incident to be dealt with was a road traffic accident, probably with fatalities (which there were) in the middle of a Wildland fire with lots of smoke - and the weather was very, very hot that day.

"THE REACTOR COLUMN."

Write to The Reactor, Mr. R., with comments, problems, ideas or anything at all that you would like to be heard. The Editors may decide not to print a letter or part of a letter and letters may be edited. No letter will be published unless the name and address of the Writer is given to the Editors, but names and addresses will not be published without the writer specifically requesting it

There is always something to catch the eye in the NFPA Journal, the bi-monthly publication of the National Fire Protection Association USA. In the July/August 2003 edition, the President and Chief Executive of the NFPA, James Shannon, makes some interesting comments on the resources available to First Responders in the USA. In the USA, there is currently a major debate raging as to whether funding of the Fire Service is a Federal or a Local responsibility. (Does this sound familiar ??) Mr. Shannon states that this is a particularly serious issue these days because of the demands being placed upon Fire Services by the post September 11th threats for which they must prepare.

Mr. Shannon reports that a needs assessment conducted by the NFPA has identified that only 1 in 10 Fire Departments in the USA has the personnel and equipment required to respond to a building collapse or the release of chemical or biological agents; half the Firefighting force lacks the necessary formal training in technical rescue; one third of the protective clothing being worn by Fire Departments is more than 10 years old; at least 65% of cities and towns nationwide lack sufficient fire stations to achieve widely recognised response-time guidelines and on a typical Fire Department shift, 45% of first responding firefighters lack portable radios and 36% lack self-contained

breathing apparatus. Quite staggering results but before you start to criticise, look to your own Country's resources and the will to properly equip and train its Fire Departments and other First Responders to tackle the type of incident that we now know that we can expect. The USA Fire Service may not be as good as it sometimes portrays itself to be, but one thing that must be admired about them is that they are not afraid to establish and highlight their deficiencies and by doing so, they are surely streets ahead of the Fire Services in other parts of the World who don't even know they have deficiencies.

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 The July/August NFPA Journal is traditionally the edition in which statistics of Firefighter deaths in the USA are published. During the calendar year 2002, 97 Firefighters in the United States lost their lives whilst on duty. Of these deaths, eleven occurred in Training, and eleven occurred during the performance of non-emergency related on-duty activities. Seven died while engaged in normal or administrative station activities - all as a result of heart attacks. Stress and overexertion is still the leading cause of fatal injury. The second leading cause of injury was struck by or contact with an object and the third leading cause was caught or trapped.



JOIFF TRAINING NOTES

JOIFF accredited Training.

During the late nineteen nineties, JOIFF Members had become increasingly aware that the issue of "attendance certificates" from Training Establishments and the convenient use of nearby Local Authority Fire Brigade Training facilities did not meet the modern Training needs of the Industry. Fulcrum Consultants gave a Presentation about Training needs at the 1999 JOIFF Annual meeting in Harrogate, following which, the JOIFF Training Standards Group, comprising experienced operational Fire Officers elected from the Membership of JOIFF and Fulcrum Consultants was established and during the following twelve months, the Group developed several Courses to "Best Industry Practice". A number of Training Establishments had been inspected, culminating in the first JOIFF accredited Training Courses taking place at a JOIFF accredited Training Establishment in December 2000.

Since then, the portfolio of JOIFF accredited Training has grown and there are now several hundred JOIFF Certificates of Qualification held by Emergency Response Teams in the Industry.

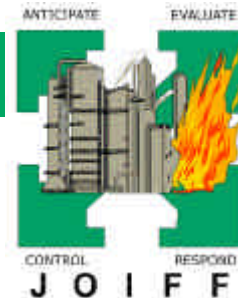
It is very much in the interest of JOIFF members when carrying out their Training Needs Analysis to be aware of current legislation and to train to Best Industry Practice. There are currently only two JOIFF accredited Training Establishments, both in the United Kingdom, but work on accrediting Training Establishments in other parts of the World is at an advanced stage, to reflect the Worldwide role of JOIFF.

More recently, JOIFF training programmes have been accredited by the Institution of Fire Engineers, thus providing the platform to give Emergency Response Team members recognition within the Fire Industry Worldwide. With the introduction in the United Kingdom of the Integrated Personal Development System - see details of this in an article in this edition of The Catalyst - and the likelihood that it will be introduced in other Countries in the not too distant future, it is critically important that Training and assessment to Best Industry Practice remains a dynamic concept that JOIFF Members consistently apply.

Courses and Programmes currently accredited by JOIFF through the Training Standards Group.

JOIFF ATE = JOIFF Accredited Training Establishment*

#	Course Name	Duration	Venue
A 1	Occupational Firefighter /ERT Part Time	3 Days	JOIFF ATE*
P 1	Occupational Firefighter/ERT Full Time Training Programme (site-specific)	Up to 12 months	Company Site
P 2	Occupational Firefighter/ERT Technician Programme (IFE accredited /JOIFF accreditation pending)	Up to 6 months	Company Site
B 1	Breathing Apparatus Wearer	5 Days	Company Site or JOIFF ATE*
B 2	Breathing Apparatus Instructor	9 days	JOIFF ATE*
B 3	Breathing Apparatus Wearer Refresher (accreditation pending)	1 day	Company Site
B 4	Breathing Apparatus Instructor Refresher (accreditation pending)	5 days	JOIFF ATE*
C 1	Principles of Fall Protection Management	1 day	Company Site
C 2	Fall Protection Equipment Use	1 day	Company Site
C 3	Confined Spaces Entry/Access Techniques	2 days	Company Site
D 1	Practical Firefighting	2 days	JOIFF ATE*
E 1	Team Leader	5 Days	JOIFF ATE*
F 1	Fire Extinguisher Instructor	2 ½ days	Company Site or JOIFF ATE*
G 1	Emergency Planning for Incident Controllers	1 day or 2 days	Company Site or JOIFF ATE*
H 1	Train the Trainer	2 Days	Company Site or JOIFF ATE*



As needs arise, the JOIFF Training Standards Group develop and accredit further Courses and policies - the most recent JOIFF policy on Training relates to pre attendance requirements for Confined Spaces Training where a Safety need was identified and addressed.

JOIFF accreditation is a minimum Standard and some of the Courses held exceed this minimum. An example of this is the site specific JOIFF/Institution of Fire Engineers accredited Competency Based Training Programme for Occupational Firefighters where the core competencies are based on but far exceed the 3 week residential JOIFF accredited Occupational Firefighter Full Time Course.

In this article are the list of Courses and Programmes currently accredited by JOIFF through the Training Standards Group.

Other Courses and Programmes are currently under

consideration.

Breathing Apparatus Instructor

We are delighted to announce that JOIFF recently certified its first accredited Breathing Apparatus Instructor. Heartiest congratulations to Adrian Donovan of Irish Refining Plc. who has added this qualification to his JOIFF accredited Team Leader qualification. Adrian attended the Course at a JOIFF accredited Training Establishment and impressed the Instructors with his competence and the manner in which he applied himself throughout the Course.

To qualify as a JOIFF accredited Breathing Apparatus Instructor, successful Trainees must demonstrate competencies in all aspects of Instruction in the safe use of Breathing Apparatus.

Well done Adrian !!

JOIFF TRAINING 2003 / 2004.

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.

Programme for the remainder of 2003:

Course Name	Dates	Venue
3 day Occupational Firefighter (part time)	6th-8th October	IFTC
2 day Practical Firefighing Course	9th-10th October	IFTC
5 day Team Leader Course	15th-19th September	IFTC
	17th - 21st November	IFTC

Programme for 2004:

Course Name	Dates	Venue
3 day Occupational Firefighter (part time)	16th - 18th February	Washington Hall
	8th - 10th March	IFTC Teesside
	12th - 14th April	Washington Hall
	7th - 9th June	Washington Hall
	6th - 8th September	Washington Hall
	4th - 6th October	IFTC Teesside
	8th - 10th November	Washington Hall



Programme for 2004 continued...

Course Name	Dates	Venue
2 day Practical Firefighting Course	26th - 27th January 19th - 20th February 15th / 16th March 19th - 20th April 10th / 11th May 6th / 7th September 23rd - 24th October 25th - 26th October 29th - 30th November	Washington Hall IFTC Teesside Washington Hall IFTC Teesside Washington Hall Washington Hall IFTC Teesside Washington Hall Washington Hall
5 day Team Leader Course	9th - 13th February 29th March - 2nd April 10th - 14th May 7th - 11th June 6th - 10th September 25th - 29th October 15th - 19th November 6th - 10th December	Washington Hall IFTC Teesside Washington Hall IFTC Teesside Washington Hall IFTC Teesside Washington Hall IFTC Teesside
5 day BA Wearer Course	19th - 23rd April 11th - 15th October	IFTC Teesside IFTC Teesside
10 day Breathing Apparatus Instructor (BAI) Course	19th - 30th January 15th - 26th March 18th - 29th October 20th - 31st October	Washington Hall IFTC Teesside IFTC Teesside Washington Hall
5 day BAI Refresher Course	26th - 30th January 26th - 30th April 4th - 8th October 27th - 31st October.	Washington Hall IFTC Teesside IFTC Teesside Washington Hall

Following recent occurrences, the JOIFF accredited Training Establishments have implemented a 4 week cancellation charge for short notice cancellations.

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