2005, Issue 2

The Catalyst

The Official Newsletter of JOIFF June 2005

www.joiff.com

From the Editors

This is the second edition of The Catalyst for 2005 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 addition to The Catalyst, current information relevant to Emergency Services Management is posted on the JOIFF website.

As always, we thank those JOIFF Sponsors who have contributed articles - for this edition, Ten Cate Protect and DuPont Personal Protection. Ten Cate announce the launch of an exciting new material to be used as an outer shell for Protective Firefighting garments for Firefighters and they provide detailed information on this in an article from Bill Marrs.

JOIFF Member Dave Cox from New Zealand provides interesting detail on a Project in which he has been engaged in India and we provide details of NRIFD Japan. In the last edition of The Catalyst we announced a meeting which was an attempt to revitalise the Institute of Fire Safety Managers and we are pleased to publish a report on this successful meeting.

We are delighted to tell Readers that Tommy Clarke of JOIFF Member BP Sullom Voe Oil Terminal, Shetland, Scotland has recently received the award for Fire Manager of the Year and we publish a report from Tommy on this.

Some of our regular features are also included in this edition and once again 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.

New Members

During March, April and May the Executive of JOIFF were delighted to welcome the following new Members:

Members

ChevronTexaco Products Company/Global Marketing Solutions, Florida, USA represented by Lindsay Hamilton. ChevronTexaco Products Company/Global Marketing Solutions is a global group looking after safety issues including fire. Lindsey was previously based in New Zealand as National Fire and Safety Officer for Caltex New Zealand.

Saudi Aramco Shell Refinery, Kingdom of Saudi Arabia represented by Mansour Sadgah Al-Sulaimani, Manager Industrial Security and Governments Relations with Hadi Saleh Al-dehor, Fire prevention suppression superintendent, as Deputy. Saudi Aramco are one of the World's major Refining and Petrochemical Operations and they have a large Emergency Response facility.

Wray Park Training Centre, Surrey, England represented by Malcolm Styles, Divisional Officer, Head of Learning and Development, with Martin Garrod, Operational Training Manager as Deputy.

The Wray Park Centre is an International Training Centre offering a divers range of Courses for Local Authority Fire Services, Commerce and Industry and Overseas Fire Services.

Members - Associate / Corporate:

Knowsley SK Ltd, Manchester, England, represented by Ian Korny, Operations Manager, with Tony Morrissey, Area Sales Manager - UK and Ireland as Deputy. Knowsley SK are designers and manufacturers of Firefighting equipment and systems. More information about Knowsley can be found on their website at www.knowsleysk.com

Tyco Safety Products, Great Yarmouth, England, represented by Andy Shiner, Director of Marketing and Karla Scriven-Supple, Marketing Co-ordinator. Tyco Safety Products are Manufacturers and Suppliers of Firefighting and Fire Suppression products. More information about Tyco Safety Products can be found on their website at www.macron-safety.com

Members - Associate / Individual:

John Nicholson, Middlesex, England. John is currently the Fire and Safety Manager at the new Terminal Five Project in London Heathrow Airport and is currently in the process of formulating a number of Emergency Response Teams for the Project. He is a Member of IAFPA and was amongst the first people to receive JOIFF accredited Certificates of Competence when he successfully completed the very first JOIFF accredited BA Wearer, Auxiliary Firefighter and Practical Firefighting Courses that were held in IFTC Teesside in December 2000.

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

Members Section

JOIFF Members Meeting

The recent JOIFF Members' meeting, which took place on Tuesday 17th May at the FireExpo Exhibition in the National Exhibition Centre, Birmingham, England was well attended by representatives of United Kingdom Members. The meeting was very kindly hosted by JOIFF's newest Corporate Member, Tyco Safety Products, whose Director of Marketing Andrew (Andy) Shiner welcomed participants to the event.

JOIFF Secretary Kevin Westwood said that the PFOS/Foam issue was now with the European Commission who were expected to report towards the end of this year and until then, no action could or would be taken by any EU Member State. This is an area of great interest to many JOIFF Members and Kevin said that he would keep JOIFF up-dated of any developments advised to him.

A report was presented on the outcomes of the recent meeting of the JOIFF Executive at which important decisions were taken on the way that JOIFF would be structured in the future.

Gerry Johnson, Chairman of the JOIFF Training Standards Committee, discussed the need for Members to be aware of Health and Safety Legislation in relation to Training and distributed the requirements for Employers to ensure the competence of Staff. He stated that there was a need for Organisations to ensure that their Training Programmes were at least equivalent to the latest National Occupational Standards for Emergency Responders and suggested that achieving National Vocational Qualifications was one way of demonstrating such competence. The need for this is linked to various Fire Service Integrated Risk Management Plans (IRMP) with most Sites experiencing a decrease in pre-determined attendances, Most of those present agreed that this was the case. Gerry Johnson stressed the importance of Sites obtaining copies of their Local Fire Service IRMP which must be made available to them.

Alec Feldman of the JOIFF Secretariat, who represents JOIFF on the United Kingdom Fire, Rescue and Safety Vocational Standards Group, gave an up-date on current activities of this Committee. There was some discussion on the proposed new "Cluster Awards", which are being regarded as a "half-way house" on the way to the full National Vocational Qualification. Of particular interest to JOIFF Members was the proposed inclusion of a Unit on driving, manoeuvring and deploying Fire Service vehicles, with the stipulation that where people are required to drive fire appliances and other vehicles as part of their employment, then it is expected that they would be required to be assessed against this Unit.

It was reported that the JOIFF website is continually being updated and plans for a facelift for the site in general and for the rapidly growing archive of JOIFF Shared Learning and other pages in the Members Area in the not too distant future were mentioned.

After the meeting, Tyco Safety Products provided an excellent lunch for all attendees.

Fire, Rescue and Safety Vocational Standards Group

In July 2004, JOIFF was invited to become a Member of what was then called the Emergency Fire Services Vocational Standards Group (EFSVSG) and has since then been participating in its work. Some months ago, the name of the EFSVSG was changed to the Fire, Rescue and Safety Vocational Standards Group (FRSVSG) to more correctly reflect the growing scope of its activities. It is an important policy of the JOIFF Executive that Members are aware of JOIFF's affiliations and activities and we set out below detail of FRSVSG.

FRSVSG, working under the auspices of the United Kingdom Employers' Organisation for Local Government is responsible for defining, maintaining and improving National Occupation Standards (NOS) for the fire and rescue sector. These NOS are used to develop Vocational Qualifications (VQs) for the sector. The group is also responsible for developing the Vocational Qualification structures and associated assessment strategies.

The NOS are statements of the skills, knowledge and understanding needed in the workplace and are expressed as outcomes of competent performance. In other words, they define good practice in the performance of individuals in the workplace, based on the functions they perform. They may be regarded as quality standards for people.

Competence is defined by the Qualifications and Curriculum Authority as "the ability to perform to the standard required in employment across a range of circumstances and to meet changing needs."

The FRSVSG is responsible for developing the assessment strategy used by the awarding bodies. The assessment strategy defines the scope and the qualification structure of the award, the Assessor, Verifier and Quality control requirements and the performance evidence requirements. Each qualification consists of a number of units based around functional roles. The qualifications are achieved through training and assessment in the workplace with Candidates being signed off by a Qualified Assessor when they reach the required level of competence in each unit. This is then verified by a qualified Verifier.

The NOS covering the Operations in the Community, Control Operations and Watch Management functional roles were completed in 2001. Level 3 S/NVQs for these roles were made available to the industry in 2002.

The NOS covering Fire Safety functional roles were completed and approved by the UK Co-ordinating Group in 2004. The assessment strategy has also been developed and the Fire Safety S/NVQs were submitted to UKCG for approval in January 2005.

It has been identified that several specialist operational support roles will not be provided for by existing NOS and will have to be defined. These roles include Fire Hydrant Maintenance, Emergency Planning (in a fire/flood or civil defence context), Fire Ground Technician and Maintenance of Specialist Fire Fighting Equipment.

The development of fire and rescue sector NOS has concentrated on operational roles, however FRSVSG would like to develop NOS for all roles within the fire and rescue services including non-operational support roles such as clerical and administrative staff and HR practitioners and managers, so that qualifications can be offered to all staff. Work is being done by CFOA (People and Organisational Development Group) on developing role maps for support roles within the fire and rescue sector. The majority of these NOS will be drawn from existing job descriptions and documents held by a range of cross-sector bodies. Appropriate VQs will then be available to support staff within the sector.

The Organisations that constitute the FRSVSG are drawn from a broad range of Fire and Rescue Services so that it is representative of the industry as a whole. As well as JOIFF, the members include :- Chief Fire Officers Association, Fire Brigades Union, Local Government Association, London Fire and Emergency Planning Authority, Retained Firefighters Union, Airport Operators Association (AOA) Ops and Safety Committee, British Fire Services Association, Civil Aviation Authority, Ministry of Defence, Fire Service College, Fire Protection Association, Institution of Fire Engineers, Department for Education and Skills, Employment Organisation for Local Government, Fire Services Awarding Bodies (Edexcel, SQA), Office of the Deputy Prime Minister (ODPM), Qualifications and Curriculum Authority (QCA).

Members take note….

Annual General Meeting

The Annual General Meeting of JOIFF Ltd. will be held on Tuesday 20th September in Dublin Ireland. For further information, please contact the JOIFF Secretariat.

FIRE SAFETY MANAGER OF THE YEAR

Note from the Editors:
We are delighted to advise readers that Tommy Clark, Emergency Response Team Leader in JOIFF Member BP Exploration Co. Ltd., Sullom Voe, received the Fire Industry Award 2005 as Fire Safety Manager of the Year. These Awards are to recognise and celebrate excellence, achievement and innovation among Fire Industry professionals and Fire Service staff over the previous 12 months. A judging panel of 22 experts selected the Award winners from an outstanding short-list of nominees, which in the category Fire Safety Manager of the Year included as well as Tommy, Michael Hamilton, Cheshire Fire Service; Chris Blake, Hereford and Worcester Fire and Rescue Service; Ian Evans, HM Fire Service Inspectorate; Alan Patmore, Luton and Dunstable NHS Trust and Rory Campbell, Sandwell Education Department. The Editors extend congratulations to all excellent final nominees but in particular to Tommy Clarke, Member of the JOIFF Training Standards Committee and to his colleagues in the Emergency Response Team and to the Management of the Terminal for their support to Tommy and his Team.

Tommy Clark, 2nd from the left, receiving the award

Report on the Award

by Tommy Clark, BP Exploration Operating Company Ltd.Sullom Voe

I had the great pleasure in receiving the Fire Safety Manager of the Year award on the 17th of May 2005 at the Fire Service Awards in Birmingham during the Fire Expo. I was made aware of this new category by one of the JOIFF Shared Learning emails from JOIFF Secretary Kevin Westwood, in which he encouraged JOIFF members to apply, thanks Kevin.

The submission for the award had to cover the following different areas:

- Staff Training
- On-going fire risk assessment, Improvements
- Improvements made in the fire safety provisions and maintenance procedures.
- Leadership
- Effective communication with senior management
- Personal development

This did seem to be very comprehensive list to say the least, but as an Emergency Response Team Leader working in the private sector, these are areas which we all have to address during our normal working year, to varying degrees.

The Emergency Response team at BP's operated Sullom Voe Terminal (SVT) has been through a recent re-organisation, this resulted in there being a redistribution of skill and therefore a need for training. Training is always a difficult area to get right for your individual requirements, thankfully the JOIFF training standards assisted. The training developed for our teams was submitted to the Training Standards committee and received approval for JOIFF accreditation, meeting BP's requirements that all training should be accredited.

The Control of Major Accident Hazard Regulations (CoMAH) has made all Sites covered by the regulations in the UK, review their individual hazards. This is a very positive aspect of the regulation, as far as I am concerned.

At SVT we decided to review all of our potential scenarios to ensure we could respond in a safe and effective manner, identifying gaps in both equipment and procedures. The gaps in our equipment have been partially addressed by some lateral thinking, utilising tried and tested agriculture equipment. This has given us cost effective user friendly equipment, an article in last months Industrial Fire Journal covers this in more depth.

The gaps in procedures has been addressed by the development of specific Emergency Response Plans (ERP's), which give guidance to our On-Scene Commander, ER teams, Operations Controlroom, Incident Controlroom and the Local Authority Fire Brigade. The key to these new ERP's, was to make them as users friendly as possible, providing the information to the responders involved in the incident, whether they are on-scene or in the controlroom. Each ERP's is specific to the process units involved and covers all scenarios from the

small to the large. They are all one page documents providing only the important relevant information with process unit location maps highlighting fire hazard information and location of fire safety equipment.

The changes I have mentioned have not been easy, particularly when I informed my ER teams that we were going to buy a Tractor, as part of ER response capabilities.

BP's Terminal Management has been supportive in the development of ER at Sullom Voe and appreciates our individual requirements.

It can be seen that by carrying out my role as Emergency Response Team Leader the criteria for the submission was already in progress. I would encourage you all to submit for this award and others like it to highlight the good work being carried throughout Industrial Emergency Response.

Further Note from the Editors:

Sullom Voe Terminal (SVT) is located on the Shetland Islands, around 350 kilometres north of Aberdeen. The Terminal is operated by BP and is owned by a consortium of companies.

The SVT was constructed in the 1970's to store North Sea crude from the Brent & Ninian pipelines. The Terminal now also receives crude oil from the Schiehallion field via shuttle tanker and Clair field via pipeline. The Magnus Enhance Oil Recover pipeline operating at a maximum pressure of 235 barg operates through the Terminal.

Tommy Clark, is the Emergency Response Team Leader at SVT, he manages an emergency response team of 60 personnel who respond to all Terminal emergencies including fire, gas leak, security and pollution. The team carry out maintenance on all ER equipment and carry out all Jetty operations.

Mr. T L Clark,
Emergency Response Team Leader.
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PRESS RELEASE

MILLENIA LIGHT® OPTIMUM SOLUTIONIN FIRE PROTECTION FOR FIRE FIGHTERS.

Millenia Light® optimum solution in fire protection for Fire Fighters.

The introduction of MILLENIA LIGHT® by Ten Cate Protect is a highly significant stepping stone in the ongoing development of high-tech fire protective fabrics. Advanced engineering, using super-strength fibres has delivered a new material with exceptional properties.

Millenia Light® is the lightest and toughest outer shell material: tear resistance, cut resistance, wear resistance and tensile strength are unsurpassed. Even more exciting is the strength retention in extreme exposure to heat. After exposures such as a simulated flash fire similar to those described in EN 469 (test methods EN366/367) Millenia Light® fabric is almost 100% greater than any other outer shell used world wide. Millenia Light® is the lightest outer shell material. At 180 g/m2 this fabric is
10-30% lighter than any other outer shell fabrics. This gives freedom of movement and less weight on fire fighters' backs to keep them going longer.

This new development is truly a major milestone for Fire Fighter Gear:

- The lightest outer shell presently in use
- Improved comfort and potential for lower heat stress
- The lightest and most breathable components
- Excellent thermal protection
- Extremely durable in dangerous and demanding work environments

A detailed article on Millenia Light® is published in this edition of The Catalyst.

For more information on Millenia Light® contact:
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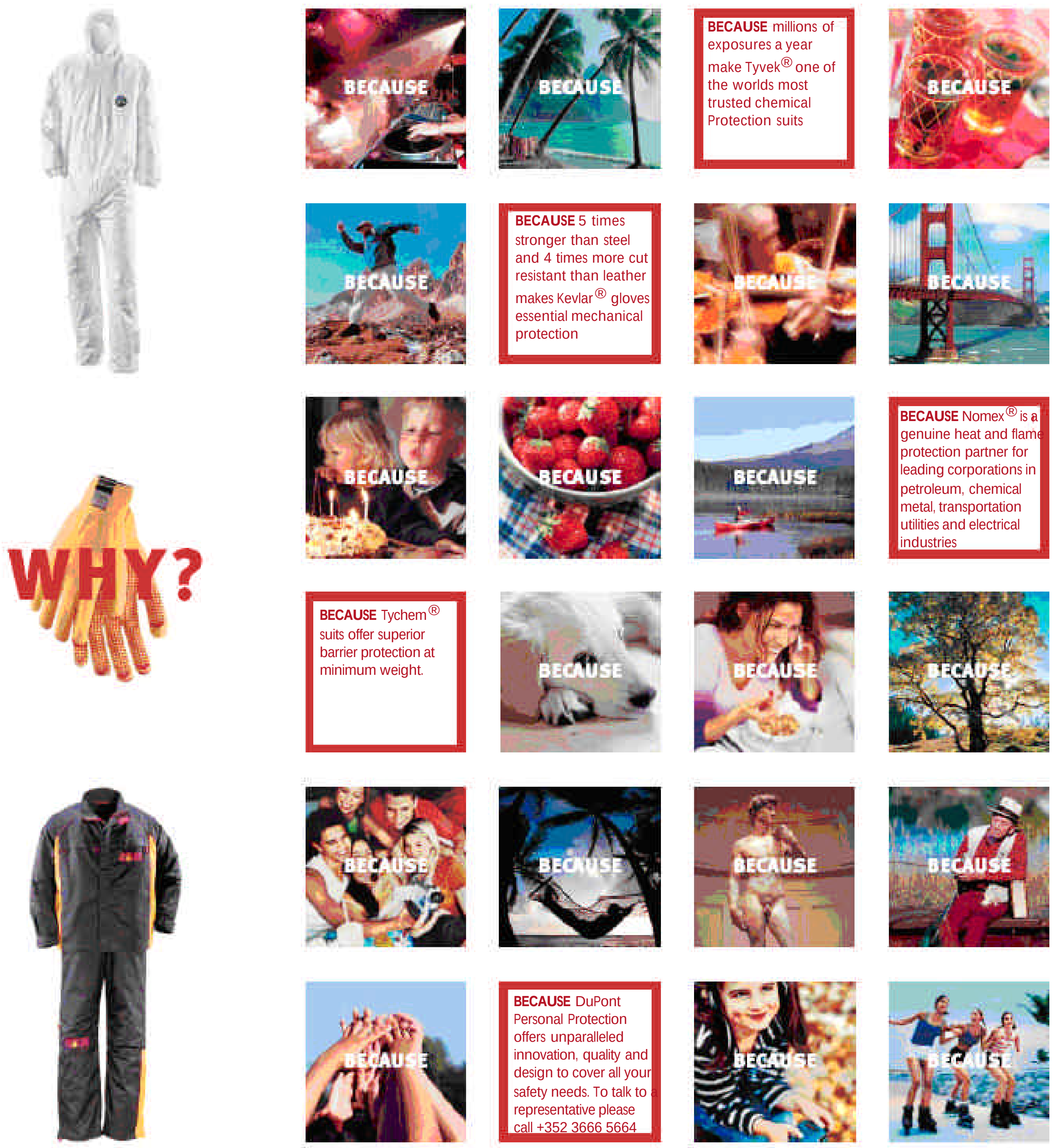
Ten Cate Protect



The Catalyst
The Official Newsletter of Joiff

INCIDENT MANAGEMENT TRAINING IN INDIA

Report submitted by JOIFF Member Dave Cox.

Emergency Response Solutions, a New Zealand based company, was recently contracted to a newly commissioned petrochemical plant in the North West of India to provide them with the theoretical basics of Incident Management.

We believe the essence to effective Incident Management is regular exercising. When there exist recognised potential risk areas within a site, planning an exercise based on a range of event types gives credibility to the exercise scenario. During the exercise all groups who would normally be involved in the managing of the Incident must take part. Systems, equipment and manpower must all be used during the exercise for an accurate review process to take place.

The training we delivered consisted of three modules; they were:

- Pre-Incident Planning
- Size Up
- Structured Incident Management Model

Pre-Incident Planning is one of two key elements to successful Incident Management. The training was based around a computerised programme that calculated heat flux contours as well as vapour cloud dispersion for a wide range of product types and incident types. After a basic introduction to the values of pre-plans and an outline of the key information they should include, each of the groups were taken through the stages on how to prepare and write pre-plans. By the time of our departure 3 pre-plans had been completed ready for the first review stage and exercising.

The second key element to Incident Management is to have a structured Incident Management System suitable for that site. The system chosen by ERS is based on the New Zealand Coordinated Incident Management System. This system has been in use for many years in various countries and is as suitable for multi response agencies and equally as well for a single industrial or commercial site. It nominates one person or agency as the Incident Controller and allows a cascading management structure to be formed from there, depending on the size and duration of the incident.

Another important factor in incident management is Size Up. Size Up is based on the initial actions and reactions that are taken in a logical and sequential manner based on the first impressions of the incident by the initial senior person. These actions are the basis on which further decisions are made by the Incident Controller and Incident Management team to control the incident.

The training method we used was group critique. We used actual incidents that had occurred in petrochemical sites over a number of years supported with newsreel footage and reports of the incidents as they occurred.

For further information contact Dave Cox at e-mail address dave@ers.net.nz

MOBILES DON'T CAUSE EXPLOSIONS !!

UK Researchers say the idea that switching on a mobile phone on a petrol station can cause an explosion is a myth. Dr. Adam Burgess of the University of Kent said that out of 243 petrol station fires attributed to mobile phones around the world in the last 11 years, not one was caused by a handset. In fact BP's International Group Fire Officer Richard Coates found that many incidents happened after discharge of static from the body ignited petrol fumes.

"The petrol station / mobile phone story crosses into the realm of humour and urban legend" Dr. Burgess comments. "Even on an oil rig, the only real reason not to use a mobile is because of the issue of distraction." He suggests that bans on mobiles in service stations were the result of "a relatively instinctive precautionary response."

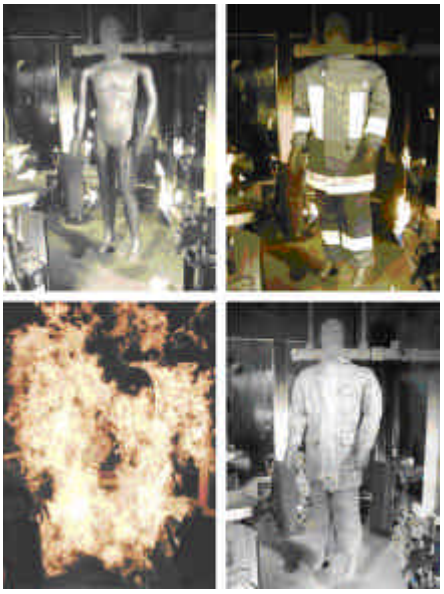
Reproduced from the April 2005 edition of Industrial Fire Journal (with thanks).

AIRPORT FIRE CHIEFS VISIT THE DUPONT TECHNICAL CENTRE IN GENEVA

The recently formed Airport Clothing Standards Group (CSG) was off to a flying start with a visit to the DuPont Technical Centre (Geneva) in early March. The object of the visit was to gain an appreciation of what makes good Personal Protection Equipment (PPE) work.

"If we are going to do this we are going to do it right" said Symon Clifford Chief Fire Officer of Bristol Airport who headed the delegation. "We are looking at PPE and how it works, especially in relation to the clothing worn underneath, and not only when aircraft fire fighting but also when other Emergency Response work is being carried out by airport fire fighters". What better place to start, than with witnessing different clothing systems and designs that will be tested to the limit on the DuPont Thermo-Man.

"This has opened up a whole new thought process, which is something that I very much encourage. It has also made us think outside the box", said Paul Hardiman, Senior Airport Fire Officer at Inverness Airport.



The DuPont Thermo-Man®
- a life size mannequin

The Integrated Clothing Project (ICP) for public brigades has been a catalyst for the CSG to look closely at what they are currently providing for their fire fighters who are in danger of being left behind after the ICP has specified its clothing system. There are over 2500 airport fire fighters in the UK and Ireland who, if they buy one design as a standard, would be a very sizable contract for any manufacturer to win.

Symon Clifford went on to say "it's time we got together and drove the market along rather than following along and taking what's left on the shelf".

There is now a genuine commitment amongst airport fire officers to come together and form a buying consortium not unlike the ICP The immediate advantages are commonality of design and colour which would help with cost, stockholding and maintenance. But more importantly they can have a clothing system that fulfils their specific needs.

Hopefully the knowledge gained will aid us in working down through the layers of clothing. Heat stress is a great concern to all fire fighters and the management of sweat with high wicking fabrics is a proven advantage. However, there is not one easy answer for as soon as protection is increased in one area we are likely to cause problems in another. This knock on effect usually manifests itself in the form of heat stress. It may be time to re-visit designs and see if the advantages gained by the provision of certain layers are in fact real.

Studies into Fire-fighter fatalities and injuries in the US would suggest that heat stress is the main contributory factor. So are we protecting our Fire-fighters from extremely low risks or even theoretical risks, yet increasing their exposure to the known and tangible dangers of Heat Stress,
It is expected that the group will visit a weaver during or shortly after their next meeting and then move on to visit garment manufacturers. The CSG are rapidly becoming some of the best informed purchasers in the fire market. Once a disparate group who were picked off one at a time and even ignored by some sections of the industry, they are now becoming a force to be reckoned with.

Back row: (from L to R) Tom MacKerrell, Robert Holmes, Symon Clifford, Kevin Hornett, Andy Haworth, John Curran. Front row: (From L to R) Paul Hardiman, Richard Lynn, Mike Onda, Paul MacDonald, George Farendon

PPE Corner

The Fourth Symposium of the Japanese National Research Institute for Fire and Disaster (NRIFD)took place in Tokyo, Japan from 9th - 11th March 2005. The subject matter for this Symposium was "Protective Clothing for Firefighting Activity" and it was addressed by more than 20 key Speakers from around the World, all specialists in their own particular sphere of activity relating to Personal Protective Equipment. The well attended event which was conducted through simultaneous translation, took place in the Headquarters of the Japan National Research Institute of Fire and Disaster (NRIFD) - further details of NRIFD in an article in this edition of The Catalyst.

The Programme for the 2 day meeting was divided into 7 Sessions:

- Session 1, "Implications for Firefighters Personal Protective Equipment (PPE) and their Ergonomic Properties";
- Session 2, "Effects of Clothing Layers, Moisture, Moisture Barrier on Thermal Protective Performance of Firefighters Clothing";
- Session 3, "Evaluation of Heat Protection and Comfort performance of Firefighters Protective Clothing";
- Session4, "Development and Performance of Firefighters Protective Equipment";
- Session 5, "Instrumented Manikin Test";
- Session 6, International Standards" and
- Session 7 "Specification, Standard, Present situation and Future Trend of Firefighters Protective Clothing in Foreign Countries"

The Symposium was organised by NRIFD and supported by the Fire and Disaster Management Agency (Japan), Japan Association for Fire Science and Engineering, Japan Ergonomics Society, Japan Society for Occupational Health, Japan Society of Physiological Anthropology, Japanese Society of Biometeorology, Firechiefs' Association of Japan and the Japan Fire Retardant Association. The purpose of the Symposium was to contribute to the improvement of safety and performance of Firefighters Protective Clothing by learning what is happening in this field both in Japan and Internationally.

SVT Demo203
8,400 litre Foam Tanker with POK monitor in operation.
BP Sullom Voe Oil Terminal

SVT Demo236
Valtra Tractor fitted with hose recovery reel.
BP Sullom Voe Oil Terminal

NEW DEVELOPMENTS IN OUTER - SHELL FABRICS

TOUGHEST AND LIGHTEST YET

by Bill Marrs

Firefighters clothing is designed to meet a variety of hazards and within Europe this clothing or Personal Protective Equipment (PPE) must meet a minimum set of requirements and performance levels as defined in the norm EN 469.
This norm is currently under revision and the revision recognises that different operating conditions may require modified garment constructions by introducing a second set of performance levels. In essence this provides for different climatic conditions and acknowledges the need for lighter weight garments in hotter climates whilst still maintaining a good level of protection.

However the need for lighter weight garments is not simply confined to hotter climates as it is widely recognised that firefighters throughout the European industry are often subjected to conditions in which heat stress can be a real problem. This can lead to a loss of performance and can prove lethal in extremes.

Hence the constant drive is to try to reduce potential heat stress by garment design or fabric design and reduced weight, whilst maintaining the required performance levels.

Firefighters garments are usually multi-layer assemblies, designed to combat a number of hazards and consist of :

- Outer shell fabric
- Moisture barrier
- Thermal barrier (sometimes combined with moisture barrier)
- Lining fabric

All of these layers provide elements of protection and all contribute to the weight of a garment and therefore can have an effect on potential heat stress.

Outer shell fabrics are the first line of defence and there are many excellent fabrics which garment makers may choose from. The evolution from wool to meta- and para-aramid, blends such as Nomex DeltaT, achieved the goal of reducing weight and the burden on firefighters and giving very good protection. The introduction of fibres such as polybenzimidazole (PBI) continued this evolution and now a new fibre PBO (poly p-phenylene-2,6-benzobisoxalate) has given garment makers and specifiers an opportunity to enjoy an entirely new level of performance. A comparison of fibres is shown in Table1.

High Performance Fiber Comparison

	Tensile Strength	Moisture Regain	LOI	Decomposition Temperature
	g/d	%		°C
Pbo	**42**	2.0	**68**	**650**
Pbi	3.1	15	41	600
P-Aramid	22	4.5	29	550
M-Aramid	5.3	4.5	29	400

LOI = limited amount of oxygen needed to burn

Table 1

The Limited Oxygen Index (LOI), which is the amount of oxygen needed in the atmosphere to support a materials combustion, shows PBO's exceptional fire resistance and its decomposition temperature is the highest of the commonly used fibres used for making firefighters fabrics. Similarly, comparison of physical properties shows the exceptional strength of PBO, far superior to meta-aramids and PBI and double that of para-aramids.

In fabric form these fibres are generally blended together to give a balance of properties and PBO is no exception being blended with para-aramid in a 40/60 ratio. This blend was first introduced by Southern Mills into the North American market as "Millenia" and subsequently into the European market by Southern Mills parent company Ten Cate under the name Millenia Light.

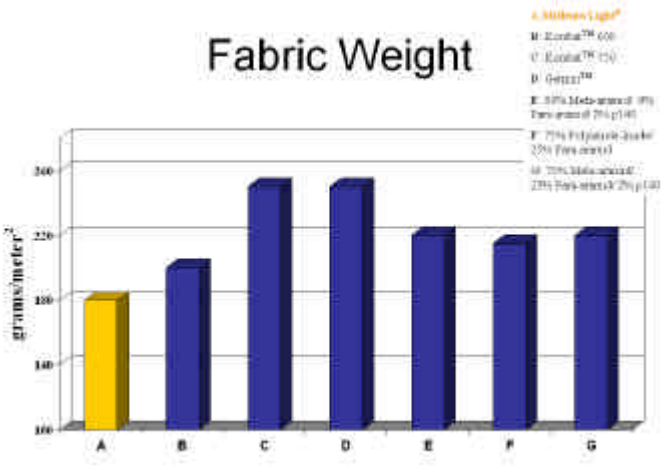


Table 2

Millenia Light is the lightest weight fabric currently available as an outer shell and has in comparison to other outer shell materials some outstanding properties.

Table 2 shows the weight of fabrics tested and even at this comparatively light weight it is the strongest and toughest as shown by tensile and tear strengths after laundering in Tables 3 and 4.
PBO also has outstanding abrasion resistance and as

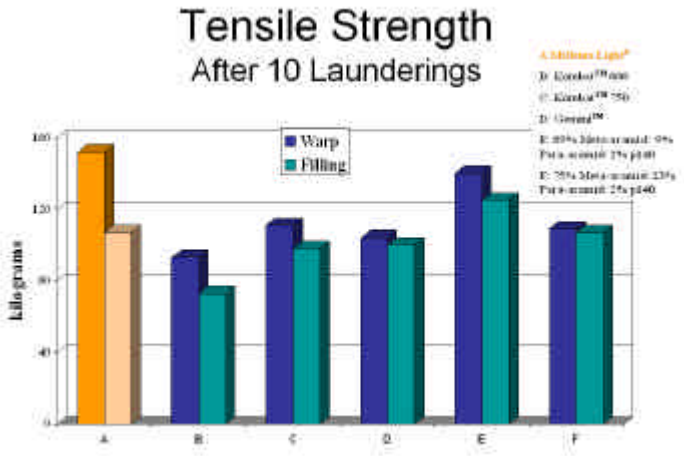


Table 3

Table 4

Millenia Light it far exceeds meta- / para-aramid blends.

However, exceptional as its physical properties are it is when Millenia Light is exposed to heat that it really differentiates from the competition. Tables 5 - 7 show the physical properties of outer shell fabrics after exposure to a combined source of radiant and convective heat of 2 cal/cm2/sec for 17.5 seconds in the Thermal Protective Performance (TPP) test.
Here the tensile, tear and burst strengths of the PBO / para-aramid blend is far superior to any of the other fabrics, so much so that the figures for meta- / para-aramid blends were negligible and it is only the reinforced para-aramid / PBI blend that even

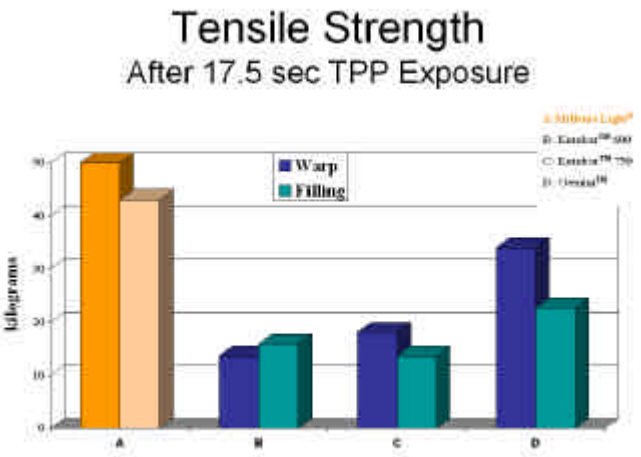


Table 5

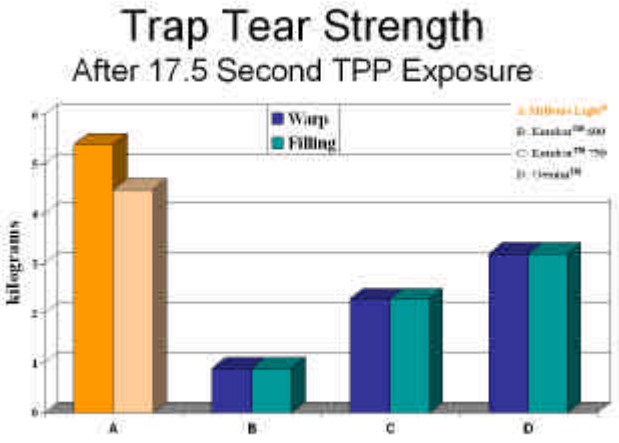


Table 6

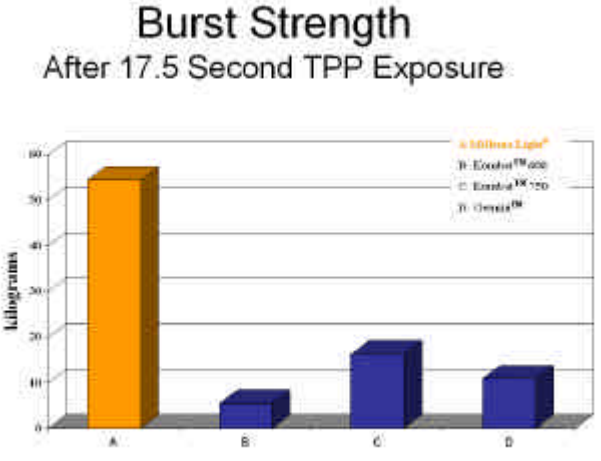


Table 7

approaches the performance of Millenia Light.
The performance of PBO / para-aramid blends as seen in these figures is truly exceptional, however as Millenia Light it also conforms to the requirements and performance levels of EN 469 in combination with commonly used moisture and thermal barriers.

PBO fibre has given fabric manufacturers the ability to produce outer shell fabrics for firefighters at comparatively very light weights and to outperform all other fabrics currently available in terms of durability, strength and heat and flame resistance. Such fabrics give garment makers the opportunity to produce even lighter weight and more comfortable garments which must be to the benefit of the firefighter.

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.

INSTITUTE OF FIRE SAFETY MANAGERS

Report by
Gary DN Whitworth, FIFSM, FIFireE, FIMgt, MIFPO, MIIRSM, IFSM Vice President & IFSM Public Relations Officer

'An excellent meeting' was how one member described the Institute of Fire Safety Managers (IFSM) Special General Meeting held at Armstrong Priestley's offices at Beeston, Leeds, on Wednesday 13th April 2005. The special meeting called to discuss measures to improve facilities for IFSM members and to help the Institute to recruit more fire safety professionals, took some important and exciting decisions including :

(a) Amending the IFSM's Membership Constitution to reflect recent introduction of the 'Advanced' CFPA Diploma.
(b) Taking a decision to regularise the Institute's status by forming a company limited by guarantee.
(c) Setting up a registration system for those who undertake fire risk assessments, and
(d) Agreeing to hold at least two major events for members in the coming year

Changes to the management of the Institute included some important new personalities including a new Secretary General - Dr Bob Docherty (MD of Flamerisk Safety Solutions Ltd and former President of the IFE) and a new Chairman - John Williamson, former ACO with Lancashire Fire and Rescue Service (MD of UK FireSkills Ltd).

Stewart Kidd, the former Director of the FPA and a well known figure in fire circles, was re-elected as IFSM President, and Gary Whitworth former CFO Kent (MD of Fire-Stat International Ltd) was re-elected Vice-President. Bob Docherty was also elected as an additional IFSM Vice President.

The Meeting also heard two extremely interesting presentations from Peter Armstrong (Chairman, BASA) who gave an excellent update on 'Fixed Fire Suppression Systems' and the keynote presentation by the Immediate Past President of the IFE - Assistant County Fire Officer John Judd, who explained how Manchester Fire and Rescue Service coped with last years major fire incident in a BT cable tunnel in Manchester.

The Institute of Fire Safety Managers was formed in 1993 as an organisation that would provide a professional 'haven' for those people who were involved directly with fire safety management in industry and commerce. Up to that point, there was no real professional institute, organisation or association that leant primarily towards this speciality and that could cater for those coming into this arm of the profession. On top of that there was a push in the industry, especially via the UK based Fire Protection Association (FPA), to provide a practical as well as an academic base to the industry by providing a recognisable diploma in fire safety. This they did with the FPA Diploma in Fire Prevention followed quickly by the Confederation of European Fire Protection Associations (CFPA) European Diploma in Fire Prevention which is a recognised qualification throughout Europe.

Membership of the Institute was initially based around these qualifications although Constitutional amendments now mean that those people who are working in the sphere of fire safety management in all its forms and guises can apply to join at either one of the three levels of membership grade i.e. Student (SIFSM), Associate (AIFSM) and Member (MIFSM). There is also a Fellow grade by election to those persons who has made an outstanding contribution in furthering the aims and objectives of the Institute. The grade system is progressive and is set to recognise both the academic achievement of the individual member as well as the different levels at which they will be operating at within the world of fire safety management.

The aims and objectives of the Institute can be summarised by stating that it is there to facilitate and represent the views and aspirations of members, and to liaise, encourage and exchange the flow of information, ideas and concepts of fire safety management.

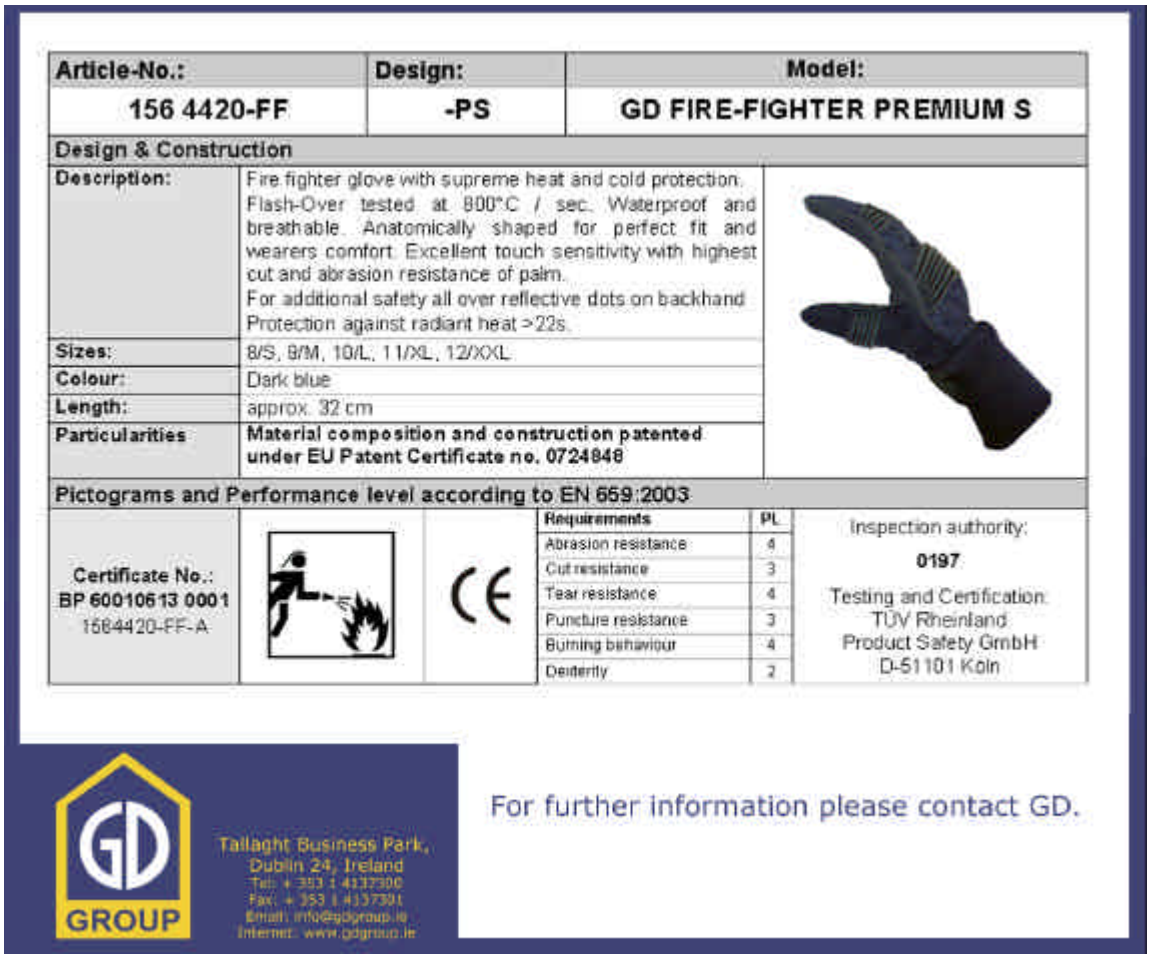
National Research Institute of Fire and Disaster, Japan

In 2001, the National Legislature of Japan passed a law establishing the National Research Institute of Fire and Disaster (NRFID) as an independent administrative institution. The work of NRIFD is based on the principal that in order to deal with the type of disasters that happen in today's World, simply relying on past experiences does not allow them to be effectively dealt with - NRIFD is working to utilise the latest Information Technology in the most effective manner in firefighting, rescue and disaster prevention.

Japan's experiences of disasters such as earthquakes and subsequent multiple point fires and other resultant extensive damage has taught them that it is difficult to control such situations simply by means of the fire brigades in the effected areas, no matter how well trained and equipped they might be. At such times it is necessary to mobilise and operate every resource available for disaster control in the best possible way to minimise damage.

One of the major research projects of NRIFD has resulted in the development of a simplified earthquake damage prediction system which can predict the damage of an earthquake in any part of the Country and of a detailed earthquake damage prediction system for particular cities, towns and villages. This information is stored in a central location and can be communicated by a mobile wireless system developed exclusively for Fire Defence use and from mobile terminals. Information on fire outbreak points in particular will be utilised for fire prediction based on building distribution databases to give detail such as how far fires will spread in for example two or three hours time.

The state of a disaster taking place at ground level can be captured by remote sensing equipment such as cameras mounted on a satellite or an airplane. Monitoring disaster situations covering an extensive area at ground level from high above without the need of entering the area where the disaster is occurring provides an effective means of understanding what is happening at the early stages of a disaster and allows building damage situations to be identified from afar. NRIFD has instigated a research project utilising Synthetic Aperture Radar (SAR) data to identify building damage situations,



Article-No.:	Design:	Model:
156 4420-FF	-PS	GD FIRE-FIGHTER PREMIUM S

Design & Construction

Description:	Fire fighter glove with supreme heat and cold protection. Flash-Over tested at 800°C / sec. Waterproof and breathable. Anatomically shaped for perfect fit and wearers comfort. Excellent touch sensitivity with highest cut and abrasion resistance of palm. For additional safety all over reflective dots on backhand. Protection against radiant heat >22s.
Sizes:	8/S, 9/M, 10/L, 11/XL, 12/XXL
Colour:	Dark blue
Length:	approx. 32 cm
Particularities	**Material composition and construction patented under EU Patent Certificate no. 0724848**

Pictograms and Performance level according to EN 659:2003

Certificate No.:
BP 60010613 0001
156 4420-FF-A

CE

Requirements	PL
Abrasion resistance	4
Cut resistance	3
Tear resistance	4
Puncture resistance	3
Burning behaviour	4
Dexterity	2

Inspection authority:
0197
Testing and Certification
TÜV Rheinland
Product Safety GmbH
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For further information please contact GD.

since SAR, which produces images from reflected and scattering microwaves, allows observation free of cloud and fog interference whether at night or during daytime. Fundamental research is also taking place into a technique of identifying seismic soil amplification by extracting topographical information from numerical altitude data obtained by remote sensing.

Approximately 3,000 forest fires of varying scale take place in Japan each year causing enormous damage to property and the environment. They spread quickly and devastate extensive areas and necessitate tremendous efforts in terms of time, labour and cost to bring them under control. Another research project of NRIFD is to study a method of predicting the risks of a forest fire and its spread, incorporating real time forest fire risk indices, calculated on the basis of past fire databases and online meteorological information. The ultimate goal of this project is to produce a countrywide forest fire risk index map in real time.

Research into landslides is also taking place in NRIFD. When a landslide occurs, the slope has a potential risk of slipping again even if the surface appears to be held stationary. NRIFD is working to establish a technique to predict the time interval before a secondary fall takes place by deducing what is happening underground.

NRIFD is also developing prevention systems such as fire detectors and new alarm notification systems taking into account the needs of "disaster vulnerable people" e.g. the elderly and handicapped. Research is being carried out on warning techniques for hard-of-hearing persons utilising odours, vibrating beds or pillows, blinking flash lamps etc.

Utilising the latest Information technology, NRIFD are also working on ways of preparing data obtained from fire experiments and the investigation of fire into databases and converting these into visual data such as picture images. These can then be made available on a website for information dissemination or further research and also used to develop fire experience simulators using VR technology. This means that people wearing anaglyphic glasses in a simulator can be exposed to real life fire scenes. Such simulation models have already been prepared and NRIFD are studying a methodology to utilise these data in evaluation of evacuation guidance and to develop more effective techniques.

The work of NRIFD encompasses many other research areas to assist in the reduction of deaths and injuries during disasters and fire including:

- prevention of the upward spread of fire in high rise apartment buildings,
- investigating ways of more effectively utilising limited resources in an emergency,
- ensuring the safe use of new extinguishing agents and systems by elucidating such phenomena as ignition and flame extinction and processes of combustion emission generation particular to them, by employing advanced numerical simulations etc.,
- developing a greater understanding of fire involving products that require very special action e.g. sodium, lithium,
- studying the safety of various new types of energy e.g. safety assessment of fuel-cell cars,
- fire prevention and firefighting techniques at waste treatment facilities,
- measuring and analysing firefighters protective garments for their performance in terms of heat resistance, comfort, functionality etc., with the object of proposing comprehensive performance standards,
- development of rescue aid robots -to develop rescue robots able to go to the aid of fallen persons when an accident occurs in a nuclear facility etc. The research objective is to develop compact, light-weight, self-running robots that can link together to become a protective barrier to shield the victim from radiation or to rescue a victim by gathering around him/her and changing the position of his/her body for easier transport and removal to a safe place. Robots are being developed which can climb a building by moving from one balcony to another of a high rise block and others are being developed to detect persons buried under debris and rubble,
- examining the causes of serous fires and explosions,
- risk level prediction and risk management of oil storage tanks. This Project was introduced primarily as a result of serious damage to such tanks in the Kobe earthquake in 1995. Damage caused to an oil storage tank in an earthquake is a complex phenomenon involving the characteristics of seismic motions, the tank structure, the characteristics of the ground, the properties of the substance contained etc. all interacting with each other,
- promoting a study to utilise the acoustic emission method in assessing the soundness of an oil storage tank bottom and making efforts to establish a safety evaluation procedure analysing the condition of oil storage tanks with computer simulations using forecast seismic motions. Most oil storage tank damage is attributable to age deterioration and seismic motions. While factors affecting tank corrosion are complicated such tanks deteriorate with the passage of time due to rust, fatigue or cracks and they are generally subject to harsh environments because of where they are installed, e.g. near a sea shore, and cyclic load upon charging and discharging of the contents. Accordingly, it is important to assess the safety of oil storage tanks individually.

National Research Institute of Fire and Disaster,
14-1 Nakahara 3-Chome,
Mitaka,
Tokyo 181-8633, Japan.

Press Release - FIRESA

Editor's note: We are pleased to publish the following Press Release:

A new trade association is becoming established for the fire and rescue suppliers industry, with secretarial support provided by the Association of British Fire Trades (ABFT). Following a foundation meeting in October 2004, a Steering Committee comprising fourteen companies in the sector has been established to take responsibility for inaugurating the new association. A Prospectus is available for prospective members which presents the case for the inauguration of FIRESA and details issues of Constitution.

Chairman of the Steering Committee is Dave Chisnall of AS Fire and Rescue Equipment Ltd who comments as follows:

"The changing market conditions and the ODPM National Procurement initiative have highlighted the need for a coherent trade body for the fire and rescue supply industry. I am pleased that FIRESA is to be established to meet this need. Over the past few months, I have been encouraged by the cooperation displayed by many representatives from the industry and I am pleased to assist with the formation of FIRESA by Chairing the Steering Group until membership is established and election of officers can take place. Its success will be determined by its membership. It will allow us to speak with a voice that will be finally heard!"

The Steering Committee is delighted to report significant support not only from prospective members but from across a range of fire and rescue stakeholders. Ken Knight, Commissioner of the London Fire and Emergency Planning Authority (LFEPA) comments:

"I am delighted that the UK equipment suppliers to the Fire and Rescue Service have taken the opportunity to establish a trade association at such an important time. This innovative step will allow UK industry to meet the challenges and opportunities of the newly created national procurement agency 'FiReBuY' which commences in April this year and will greatly assist in the modernisation of the Fire and Rescue Service. The potential of a single voice for this important sector of industry which is responsible for safety critical equipment for both the public and fire fighters is extremely welcome."

FIRESA will join the Fire Industry Confederation (FTC), the umbrella organisation which already comprises the British Fire Protection Systems Association (BFPSA), the Fire Extinguishing Trades Association (FETA), the British Automatic Sprinkler Association (BASA) and the Industry Committee for Emergency Lighting (ICEL).

Diary of Events 2005/2006

2005

July	19th - 21st	**National Fire Protection Association Security and Fire Expo** Miami Beach, Florida, USA.
	20th - 22nd	**Institution of Fire Engineers Annual meeting**, Conference and Exhibition.University of Birmingham, England.
Aug	11th - 13th	**International Association of Fire Chiefs (IAFC) Fire Rescue International.** Denver, Colorado, USA.
Oct	16th - 18th	**Advanced Personal Protective Equipment: Challenges on protecting First Responders.** Virginia USA,
	18th - 19th	**Republic of Ireland Branch Institution of Fire Engineers Meeting/Exhibition** Maritime College, Cork.
	24th - 27th	**A + A 2005 - International Congress for Safety and Health at Work.** Düsseldorf, Germany.
Nov	2nd - 3rd	**FIRE 2005** G-Mex Manchester

2006

Feb	21st - 24th	**SICUR International Security, Safety and Fire Exhibition.** Madrid Spain.
April	24th - 29th	**Fire Department Instructors Conference (FDIC)** Indianapolis, Indiana, USA.

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 2005

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

3 day Occupational Firefighter (Part Time)

3rd - 5th August	Serco IFTC Teesside	
10th - 12th October	Serco IFTC Teesside	**FULL**
2nd - 4th November	Serco IFTC Teesside	
14th - 15th November	Serco IFTC Teesside	**FULL**
21st - 22nd November	Serco IFTC Teesside	**FULL**
28th - 29th November	Serco IFTC Teesside	**FULL**
5th - 6th December	Serco IFTC Teesside	**FULL**
12th - 13th December	Serco IFTC Teesside	**FULL**
19th - 20th December	Serco IFTC Teesside	**FULL**

5 day Team Leader

22nd - 26th August	Serco IFTC Teesside
17th -21st October	Serco IFTC Teesside
12th - 16th December	Serco IFTC Teesside

IFTC Teesside also provide the following JOIFF accredited Courses and subject to numbers and availability of places will be pleased to discuss possible dates with interested Organisations.

- 5 day BA Wearer Course.
- Breathing Apparatus Instructor (BAI) Course
- Breathing Apparatus Instructor Refresher Course

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

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JOIFF in Partnership with

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