

## European Fire Sprinkler Network Announced at Prague Conference

One of the highlights of the 4<sup>th</sup> International Fire Sprinkler Conference, held 9-10 July, 2002 in Prague in the Czech Republic, was the announcement that a new organization was being formed to promote the wider adoption of the fire sprinkler concept on the European continent. Designated as the European Fire Sprinkler Network (EFSN), the organization is intended to allow private and public entities to work together to:

- Educate and inform the general public, local authorities, national governments and European institutions about the effectiveness of fire sprinklers
- Campaign for greater use of fire sprinklers in both new and existing buildings, including promotion of appropriate legislation to accomplish this goal
- Promote the benefits of a coordinated effort within the fire protection community
- Encourage research and development in the area of fire sprinkler performance and application

The International Fire Sprinkler Association and the Sprinkler Section of Eurofeu are the founding members of the EFSN, which will have membership categories open to both individuals and organizations. Once formation of the new entity is complete, it is expected to employ an Executive Coordinator to manage its efforts.

By all accounts, the Prague conference was an extraordinary success, with nearly two hundred individuals in attendance representing 24 different countries. The program demonstrated both progress and potential in a number of different areas, including technology, training, residential sprinkler promotion, and working with local governments.

The conference included the presentation of an award named in honor of Australian Harry Marryatt for his lifetime of achievement in bringing attention to the performance capabilities of automatic sprinkler systems. Intended to honor those who have contributed to the international advancement of the fire sprinkler concept, the inaugural award was presented to Michael Schnell of VdS in Germany. Mr. Schnell is the longtime chairman of the ISO/TC21/SC5, which has developed a large number of international product performance standards relating to fire sprinkler and water spray equipment. Another highlight of the conference was the presentation by James Shannon, his first public address in his new position as President of NFPA, and he took the opportunity to stress the long ties between NFPA and the fire sprinkler industry, as well as NFPA's plans for the future in the international arena.



## Role of Sprinklers in World Trade Center Disaster Reviewed

At the end of April, the U.S. Federal Emergency Management Agency released the report on the performance of buildings at the World Trade Center site in New York City in the aftermath of the September 11, 2001, terrorist attack. The report was prepared in cooperation with the American Society of Civil Engineers, the Society of Fire Protection Engineers and other professional organizations.

In general, the professionals assembling the report appear to have recognized that the multi-floor fire resulting from the impact of large fuel-laden planes was far beyond the intended capability of the automatic sprinkler system. The section on observations, findings and recommendations includes the following discussion of the fire protection systems:

“The first line of defense was the automatic sprinkler protection. The sprinkler system was intended to respond quickly and automatically to extinguish or confine a fire. The second line of defense consisted of the manual (FDNY/Port Authority Fire Brigade) firefighting capabilities, which were supported by the building standpipe system, emergency fire department use elevators; smoke control system, and other features. Manual suppression by FDNY was the principal fire protection mechanism that controlled a large fire that occurred in the buildings in 1975. Finally, the last line of defense was the structural fire resistance. The fire resistance capabilities would not be called upon unless both the automatic and manual suppression systems just described failed. In the incident of September 11th, not only did the aircraft impacts disable the first two lines of defense, they are also believed to have dislodged fireproofing and imposed major additional stresses on the structural system.”

The collapse of the towers disrupted the public water supply to the entire site. Thus, a finding with regard to buildings adjacent to the towers within the complex (4,5 and 6) was that:

“The automatic sprinkler system did not control the fires. Some sprinkler heads fused, but there was no evidence of significant water damage, due to a lack of water. This is consistent with the lack of water damage in the bookstore on the lower level and the complete burnout of the upper floors.”

As might be expected, therefore, among the issues identified from the study of damaged buildings in or near the WTC site is the following point relating to sprinkler protection:

“Fire protection ratings that include the use of sprinklers in buildings require a reliable and redundant water supply. If the water supply is interrupted, the assumed fire protection is greatly reduced.”

The role of fire sprinklers will be further examined as a more detailed study of the disaster is undertaken by the National Institute for Standards and Technology (NIST). The scope of the more detailed study includes “Investigation of Active Fire Protection Systems”. This will involve analysis of the design features of the sprinkler, alarm and smoke management systems and a review of their maintenance, modification and inspection records since the 1993 bombing incident, as well as review and analysis of information that will be collected on operation of and damage to the systems on September 11th. Information on the upcoming study is available at [www.wtc.nist.gov](http://www.wtc.nist.gov).

## World Sprinkler News

**U.S. Capitol to be Fully Retrofitted** – Kenneth E. Lauziere, P.E., Chief Fire Marshal for the Office of the Architect of the Capitol, reported to the Appropriations Committees of both the U.S. Senate and the House of Representatives on the success of fire sprinkler systems in helping to contain the fires at the Pentagon Building following the September 2001 terrorist attack. As a result, he has been authorized to proceed with the final phase of the complete sprinkler retrofit of the U.S. Capitol complex. This will involve retrofit of the remaining 80 percent of the Supreme Court building and the remaining 70 percent of the U.S. Capitol building. In all, the Capitol complex amounts to 19 million square feet (1.9 million m<sup>2</sup>) of building space, consisting of numerous office areas, two dormitories for congressional pages, three child day care centers, and even canine facilities. In all, a total of 17 million square feet (1.7 million m<sup>2</sup>) of building area have been retrofitted since the program was initiated in 1990, with most of the work completed within the past six years. Mr. Lauziere reports that there have been three fires in the sprinklered areas, all successfully controlled by the sprinklers, and no reports of inadvertent sprinkler operation except where sprinklers were subject to mechanical damage such as from forklifts.

**New Fire Test Center Planned for Australia** – Victoria University is planning to develop its Fiskville facility into a major national fire research center. A 70 m x 40 m x 20 m high building will be constructed over and around Victoria University's existing fire test building through a combination of government and corporate contributions.

**Monitor Nozzles Used in Pittsburgh Convention Center** – Automatically directed water monitor nozzles have been used as a supplement to automatic sprinkler systems in several high-ceiling sports arenas, but the convention center being constructed in Pittsburgh, Pennsylvania, USA is believed to be their first use for an exhibition space.

**British Cost-Benefit Study Calls for Residential Sprinklers** – A study completed by Cheshire Fire Service community safety officer Lyndon Loweth in a dissertation for the University of Central Lancashire shows that the cost of retrofitting the 9,360,000 m<sup>2</sup> of floor space for 240,000 people living in high-risk houses of multiple occupation (HMOs) in the UK would be less than the cost of life, injury and property loss to fire in these occupancies in a single year. HMOs of three stories or more account for 52 percent of fire deaths in the UK. The study notes that the bulk of the costs would be one-time installation costs, but the benefits would continue to accumulate each successive year. The study assumed sprinklers in combination with smoke detectors could reduce life loss to fire by 82 percent. Copies of the dissertation will be available on CD from the Cheshire Fire Service. Contact Peter Reading at [preading@cheshirefire.co.uk](mailto:preading@cheshirefire.co.uk)

**Australian Maintenance Rules Revised** - The pending consolidation of Australian fire protection system maintenance standards in AS1851 will include some changes for sprinkler systems. Weekly inspection of key components such as control (stop) valves will no longer be required where systems are monitored in accordance with sprinkler installation standard AS2118. Likewise, weekly testing of pumps installed in accordance with AS2941 will no longer be required. All maintenance activities will be required either once per month, once per six months, once per year, or once per five years. The concept of the "installation and design survey" is also being introduced to identify changes to the sprinkler system, building or processes that could affect the performance of the system.

**Scotland to Debate Mandatory Home Sprinklers** – With the support of numerous fire brigades, Scottish National Party MSP Michael Matheson has introduced legislation that would force residential homes to install automatic sprinkler systems when they upgrade their premises.

**Eduard Job Foundation Formed** – Eduard Job, a member of the IFSA Board of Directors, has formed a Foundation for Thermodynamics and Matter Dynamics. The new foundation will advocate a simplified approach to the teaching of thermodynamics as developed by Dr. Georg Job of Hamburg University in his 1972 book “Neudarstellung der Wärmelehre” (New Approach to Thermodynamics). More information is available at [www.job-stiftung.de](http://www.job-stiftung.de)

**New Minimum Residential Sprinkler Flows** – Effective 12 July, 2002, Underwriters Laboratories implemented new listings for residential sprinklers such that the flow rates all provide an average floor density of not less than 2.05 mm/min (0.05 gpm/ft<sup>2</sup>). The new minimums are being used in conjunction with revisions to the fire test that help ensure repeatability. The new minimum is also being used in corresponding FM Global Research and NFPA residential sprinkler standards.

**Canadian NRC Addresses Ventilation with Water Mist** – A study completed at the National Research Council of Canada and published in the *Journal of Fire Protection Engineering* concludes that the degree to which ventilation affects suppression by water mist depends on the fire size and location in the compartment and the characteristics of the water mist system used. Under forced ventilation, the loss of quantities of water vapor and combustion products through openings can reduce the extinguishing capability, while fresh air inflow allows fires to burn more efficiently, making them more difficult to suppress.

**New Fire Protection Leaders in Australia and USA** - Ross Hodge has succeeded Richard Balsillie as the Executive Director of Fire Protection Association Australia, and James Shannon has been elected to succeed George Miller as President of the National Fire Protection Association effective June 1, 2002.

## Upcoming Meetings, Seminars, and Exhibitions of Interest

3-5 September, 2002 – Fire Prevention & Detection Exhibition, ExCel, London, UK (Tel. +44(0)1622 850555 or [tfpes@aol.com](mailto:tfpes@aol.com))

17-18 September, 2002 – “Fire Protection Strategies for 21<sup>st</sup> Century Building and Fire Codes”, Baltimore, Maryland, USA, Society of Fire Protection Engineers and the American Institute of Architects (Fax +1-301-718-2242 or [education@sfpe.org](mailto:education@sfpe.org))

17-20 November, 2002 – NFPA Fall Meeting, Atlanta, Georgia, USA ([www.nfpa.org](http://www.nfpa.org))

26-28 February, 2003 – Fire Asia 2003 Exhibition & Conference, Hong Kong, (Fax +44(0)1737 855469)

8-9 April, 2003 – NFPA Cultural Resources Committee Meeting and Seminar, L’Aquila, Italy ([www.nfpa.org](http://www.nfpa.org))

1-3 May, 2003 – NFSA Annual Seminar & Exhibition, Westin Savannah Harbor Resort, Savannah, Georgia, USA (Fax +1-845-878-4215 or [www.nfsa.org](http://www.nfsa.org))