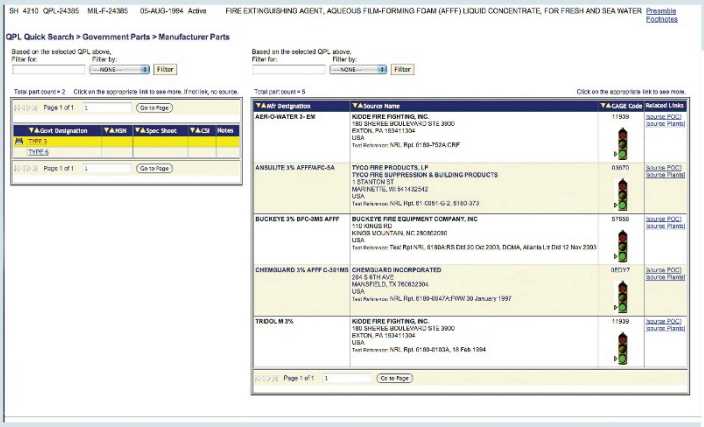
PROPOSED FOAM LABELING SYSTEM NEEDS THOUGHT

THE FIRE FIGHTING FOAM COALITION PUTS FORWARD ITS VIEW ON THE UK CIVIL AVIATION AUTHORITY'S WORK ON A NEW FOAM LABELING SYSTEM.



Foam manufacturers and other fire protection industry stakeholders were recently briefed by the UK Civil Aviation Authority (CAA) on the possible need for an Environmental Impact System (EIS) for foam agents intended to be used for aircraft rescue and fire fighting (ARFF). It was suggested that the EIS could include foam labeling and a qualified products list. During the briefing, Simon Webb of CAA made it clear that the foam label design outlined in a recent article (*Industrial Fire Journal*, First Quarter 2011) was only a 'discussion document' intended to focus attention on the issue and not an official CAA proposal. He also stated that CAA would be soliciting input on the design of the EIS from foam manufacturers and users. These statements were important to many of the foam manufacturers in attendance who believe that the initial label design has some problems in its application of PBT scientific criteria and EU law.

No discharge prohibition

One misconception that has appeared in recent articles and was reflected in the proposed label design is the notion that fluorosurfactant foams are somehow prohibited from discharge by a European Commission (EC) groundwater directive. Although Water Directive 80/68/EEC prohibits the discharge of organohalogen compounds and substances to groundwater, the use of substances such as AFFF in emergency situations was not intended to be prohibited. The UK Environment Agency has specifically addressed this issue in a recent guidance document that identifies 'the discharge of substances/pollutants resulting from the use of foams for the purpose of emergency fire fighting, subject to good practice' as a case which meets the criteria for exclusion from the prohibition[1].

Water Directive 80/68/EEC will be repealed in 2013 and replaced by the 2000/60/EC Water Framework Directive (WFD) and its 'Groundwater Daughter Directive' 2006/118/EC. The WFD does not prohibit the discharge of organohalogens, but requires each Member State to evaluate and set threshold values for each identified pollutant. It should be noted that as of today, the list of identified pollutants does not include any of the telomer-based fluorosurfactants used in modern AFFF agents. As such there is no basis for a 'discharge forbidden' label on fluorosurfactant foams.

US milspec online qualified products list (QPL) for 3% foam concentrates. Only AFFF agents are currently able to meet both the performance and environmental requirements of the milspec QPL.

EIS should be based on science

There is no scientific basis for fluorosurfactant foams to be marked with an 'extreme concern' label based solely on their containing persistent chemicals, as suggested by the CAA in the *IFJ* article. Numerous products that contain persistent chemicals are sold everyday in the United Kingdom for uses with significantly less societal value than fire fighting foam. These include personal care and cleaning products, paints, and water repellent coatings on carpet, textiles, leather, and paper. None of these products are required to be labeled 'extreme concern'. All chemical substances and mixtures placed on the European Union (EU) market will have to be classified and labeled according to the recently introduced CLP (Classification, Labeling and Packaging) legislation[2]. The CLP legislation required all individual chemical substances to be labeled and classified according to the Global Harmonized System (GHS) as of December 2010. Mixtures such as fire fighting foams must be labeled and classified according to the GHS by December 2015. Implementation of the CLP is closely linked to the REACH regulation, which requires the registration of all chemical substances imported or manufactured in the EU in quantities greater than one ton[3].

This is a harmonized program that was developed by the best experts in the EU. CAA could consider directly incorporating the hazard information and classification systems from CLP and REACH into the EIS. Developing a separate program for foam that is different from the REACH and CLP requirements could be redundant and possibly confusing to users. It could also be difficult for CAA to independently draw upon the same level of scientific expertise that was involved in designing the CLP and REACH regulations.

Qualified products list (QPL)

A properly designed qualified products list (QPL) that includes both a performance and environmental component could potentially preclude the need for direct product labeling. This approach has been used successfully by the US

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Department of Defense (DOD) for more than 30 years, and in 2006 was incorporated into Federal Aviation Administration (FAA) requirements[4]. All fire fighting foam agents intended for use by DOD or at US airports must meet the military specification ("milspec") in order to be listed on the QPL[5]. Milspec requirements include one of the worlds most challenging performance tests, and environmental studies focusing on aquatic toxicity and biodegradation[6]. Purchasers of foam for ARFF applications can access the QPL online and choose an appropriate foam concentrate for their needs, confident that all of the agents on the list have been evaluated from a performance and environmental perspective.

Direct product labeling of the kind suggested by the CAA in the *IFJ* article is usually intended to provide information to consumers that can help them make an informed purchase decision. Examples of this are nutrition labeling on food, energy efficiency labeling on appliances, and fuel consumption labeling on automobiles. However, drums of foam concentrate are not consumer products, and labeling them directly would not provide timely information to potential buyers. In addition, any type of warning or caution label on a drum of foam not related to its handling, maintenance, and use has the potential to confuse firefighters and could lead to hesitation in using the product in an emergency. Similar to consumer product labeling, an online QPL provides the most relevant information to potential foam buyers when they need it, before they purchase the product.

ARFF needs AFFF

An example of the milspec online QPL for 3% foam concentrates is shown on page 26. As you can see, only AFFF agents are currently able to meet both the performance and environmental requirements of the milspec QPL. This is not surprising as testing has shown that, for a given application rate, no foam agent can equal the performance of AFFF on flammable liquid fires.

Aircraft rescue and fire fighting is one of the most difficult fire protection challenges in that it almost always involves life safety. An aircraft crash is one of the few fire situations that may necessitate people escaping through a foam covered fuel spill, or firefighters entering this dangerous environment to perform a rescue. Foam used for ARFF purposes must provide a blanket that will quickly reseal when disturbed, and nothing provides this capability better than film forming, fluorosurfactant foams such as AFFF[7].

A pool of jet fuel burning under a fuselage can cause structural burn-through of the aluminum aircraft skin within one to two minutes. Passenger survival in such cases is directly related to how fast the exposure fire is extinguished. Recognized aircraft fuel spill firefighting formulas call for control of 90% of the fire within one minute after arrival of ARFF resources. At smaller airports that may have only one or two ARFF vehicles, it could be difficult to meet this standard with non-film forming foam. Foam manufacturers and users need to work closely with CAA on the development of the EIS to ensure that the program does not unduly restrict the use of fluorosurfactant foams for ARFF. Such an outcome would be a detriment to the safety of the flying public.

Moving forward

AFFF and fluorochemical manufacturers have worked closely with environmental authorities over the past decade, and are currently doing the research and testing necessary to incorporate into their AFFF formulations the new fluorochemicals that are being developed to comply with global stewardship programs. This work will ensure that safe and effective AFFF agents that meet all environmental requirements will continue to be available to airport fire brigades for aircraft rescue and firefighting.

References:

1 Environmental Permitting (England and Wales) Regulations 2010, Part 4, Defences, Regulation 40
2 Classification, Labeling and Packaging (CLP) Regulation (EC) No 1272/2008
3 Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Regulation (EC) No 1907/2006
4 FAA Advisory Cautionary Non-directive (CertAlert), Aqueous Film Forming Foam meeting MIL-F-24385, No. 06-02, February 8, 2006
5 Qualified Products List (QPL) – Products Qualified Under Mil-F-24385
6 United States Department of Defense Military Specification, Mil-F-24385, "Fire Extinguishing Agent, Aqueous Film Forming Foam"
7 Schaefer T.H., Dlugogorski B.Z. and Kennedy E. M., "Vapour suppression of n-heptane with fire fighting foams using laboratory flux chamber", 7th Asia-Oceania Symp. Fire Scie. Tech.

AMEREX BUYS SOLBERG SCANDINAVIAN

Amerex, a manufacturer of hand portable extinguishers and fixed special-hazard fire suppression systems has completed the acquisition of Solberg Scandinavian AS, one of the largest independent firefighting foam agent manufacturers in Europe.

'This strategic acquisition enables Amerex to uniquely bring advanced, environmentally sustainable firefighting foam technology to the Americas, and will give us a global footprint as a full-line manufacturer serving the fire protection and firefighting industry,' explained Amerex Corporation president Bill Beyer.

Solberg Scandinavian AS, based in Bergen, Norway, is recognized throughout Europe and the Asia Pacific Region for its environmentally sustainable fluorosurfactant and fluoropolymer-free products that are an innovation in Class B firefighting foam. Additionally, Solberg manufactures a complete range of traditional Class B synthetic aqueous film-forming foams (AFFF) and alcohol-resistant concentrates (ARC), as well as US Forest Service-approved Class A and high-expansion concentrates. Solberg will retain its current personnel worldwide.

The company's manufacturing plant and test facilities in Bergen, Norway, will continue to operate and supply foam agent to Europe and the Middle East and Africa. Asia Pacific customers will continue to be served from the R&D and manufacturing facility in Sydney, Australia, under the leadership of Ted Schaefer.