



## Conference Report

### Rationale

The first International Aerial Firefighting Conference was convened in Athens, Greece, 21-22 October 2008. The host country Greece is one of the countries in the Euro-Mediterranean region that is currently experiencing increasing wildfire hazard and risk. Rapid socio-economic changes throughout South and Southeast Europe have resulted in two major trends affecting wildfire. On the one side there is a general trend of rural exodus. The majority of young people is moving to the cities. This migration is resulting in the abandonment or lowered intensity of agriculture, pastoralism and forest management. As a consequence of decreasing land use an increasing amount of unused biomass, which had been intensively utilized over centuries and millennia for energy supply, agricultural production and grazing, is now available to wildfires. In the cultural history of the region this is an unprecedented development. An additional factor affecting the risk of large wildfires is the over-aging of the rural population, in many cases the dying-out of whole villages and abandonment of whole regions. This trend is resulting in a dramatic decrease of an active rural work force capable to deal with wildfires. The fires that affected the Euro-Mediterranean space between 2003 and 2007 are an expression of this trend and have left deep fire scars.

On the other side the region is also facing an ex-urban trend, the movement of people and home construction into the natural environment outside of the increasingly overcrowded and polluted cities. Those who can afford are buying rural estates or are building retirement or vacation homes in midst of an environment of high wildfire hazard. These structures and inhabitants are subjected to a high risk to become affected by wildfires.

In Europe international cooperation in fire management, including aerial firefighting, is increasing. During some recent large fire crises, e.g., in Greece and neighbouring Balkan countries in 2007, the resources shared were mainly fixed-wing aircraft and helicopters. International aerial firefighting assistance was even called to relatively small but quite destructive fire events, e.g. fires that burned in national parks or nature reserves. Calls for aerial assistance are common and seem to bring immediate solutions and relief. In Europe the reality, however, sometimes is quite different. During the recent years it was repeatedly observed that aerial assets that were brought from Central European countries to the South and Southeast of Europe provided enormous moral support to the countries in need. However, evaluation on the ground revealed that a large number of missions and sorties provided brilliant pictures for the media but were rather inefficient in bringing down the fires. While the European Commission is taking first steps to enhance the preparedness and smooth cooperation in international aerial firefighting – the FIRE-4/5 project – there is still a lack of internationally agreed standards for multinational firefighting operations on the ground and involving aerial assets.

### Sponsors and Supporters



The Global Wildland Fire Network, an international arrangement aimed at enhancing international cooperation in fire management under the auspices of the United Nations International Strategy for Disaster Reduction (UNISDR), is addressing this issue. At the 4<sup>th</sup> International Wildland Fire Conference, hosted by Spain in 2007, a thematic workshop was held on Aviation Management. The aim of the session was to identify opportunities for multilateral cooperation to improve the safety, effectiveness and efficiency of aerial fire fighting. The recommendations encompassed:<sup>1</sup>

- the need to continue to identify opportunities for sharing of information and resources;
- the need to establish frameworks to properly evaluate the net benefit (including accounting for benefits of prevention of losses) of application of aerial means;
- the need to ensure that aerial operations are managed, supervised and supported to a high standard, and are properly integrated with other aspects of fire operations;
- the establishment of a formal network to facilitate the continued sharing of information, with a priority on safety-related information
- the need to standardise approaches to integrated management of aerial means.

One year after the conference and one year after Greece, the host country of the first International Aerial Firefighting Conference, was struck by an unprecedented wildfire disaster, the Aerial Firefighting Conference brought together the aerial fire community and those working on the ground.

### **Conference Participation and Contributions**

Twenty two nations attended the highly successful first **Aerial Firefighting Conference 2008** which took place in Athens, Greece on 21-22 October.

Chaired by Johann G. Goldammer of the Global Fire Monitoring Center (GFMC) the agenda included Fixed- and Rotary-winged Operations, Safety, Management and Technologies, which dominated this vibrant conference. Many interagency meetings ensued to discuss and debate how to tackle wildfires from the air and how international aerial fire fighting management organisations can improve and share their knowledge and systems.

An exhibition of some of the worlds' leading operators and suppliers was held simultaneously which drew considerable interest from the delegates and provided a focal point for many of the accompanying discussions.

One of the two Panel Sessions Addressed Air Pollution from Wildfires and investigated the impacts of vegetation fire smoke on human health, environment and human security including aerial firefighting operations. The second Panel chaired by Chris Allen, Deputy Director of the European Commissions' Civil Protection Unit, discussed the development of a Cross-border Aerial Firefighting Rapid Reaction Squadron. Leading exponents took part in the debate including Tom Harbour, Tom Harbor, Director of Fire and Aviation Management, United States Forest Service (USFS, USA), Shane Fitzsimmons, Commissioner NSW Rural Fire Service (Australia), Dave Bokovay, Aviation Manager of the Canadian Inter-Agency Forest Fire Centre (CIFFC, Canada), Colonel Fernando Pastor Villar, Commander of the 43<sup>rd</sup> Group, Spanish Air Force (Spain), and Johann G. Goldammer, conference chair and Head of the GFMC.

Announced at the show were two new upcoming events - the first is the **Aerial Fighting USA Conference taking place in Anaheim California, USA on 19-20 February 2009**. This event is supported by UN-ISDR and the Global Fire Monitoring Centre and sponsored by Bombardier.<sup>2</sup>

The second event is a one-day **Aerial Firefighting Australasia Conference** taking place in conjunction with the New South Wales Rural Fire Services' "International Wildfire Management Conference 2009" taking place in Sydney, Australia – the largest firefighting management event of its kind in the Australasia region.<sup>3</sup>

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<sup>1</sup> The full text of the Communiqué is available at:

<http://www.fire.uni-freiburg.de/sevilla-2007/groups/Session-Aviation-Communique.pdf>

<sup>2</sup> <http://www.bdaero.com/> and <http://www.tangentlink.com/event.php?ekey=AFF%20California>

<sup>3</sup> <http://www.wildfiremanagement09.com/default.asp>

## Conference Outcomes

What should the overall funding level for forest fire management be? How should Civil Protection Organizations split the budget between prevention and suppression? How should they distribute funds between the various cost elements of these two categories? These were just some of the questions put to the delegates. The expansion of aerial firefighting in the last forty years has gradually turned from a novelty into an integral part of fire suppression and has expanded from the rich developed countries to an increasing number of countries with a fire problem around the world.

Operational activities, safety, human factors, new technologies, tactics, command and control were presented to the conference delegates by representatives from governments, organizations and operators from Spain, Italy, Greece, South Korea, Australia, South Africa, Russia with other elements being submitted in presentations from USA and Canada.

Chris Allen of the EC Civil Protection Unit posed the question regarding the development of a dedicated European Cross-Border Aerial Firefighting Rapid Reaction Squadron and – if it is required – what form should it take. The general consensus of the Panel made up of international representatives who debated this question, was that this European Squadron was the correct way forward – however, the squadron should be made up of current fixed and rotary-winged assets already available from member states within Europe and not from newly acquired and developed sources. At the Panel and throughout the discussions of the conference statements were made concerning the role of fire prevention and firefighting on the ground. Repeated statements, including those made by Gavriil Xanthopoulos of the National Agricultural Research Foundation of Greece, stressed that aerial intervention is in support of ground-based firefighting operations and that aerial intervention without coordination and cooperation with ground forces is inefficient and a waste of resources. Besides calling for improved ground-air cooperation participants underscored the need for the development of internationally agreed standards and protocols for collaborative aerial firefighting operations.

There was general consensus that current and future interagency cooperation is essential to address the peaks in wildland fire occurrences. Dave Bokovay from the Canadian Interagency Forest Fire Center (CIFFC) championed this and saw the opportunity and potential for the global wildland fire aviation community to work closer together to provide the answers to safe, effective and efficient tanker interagency operations.

It was concluded that aircraft-related fatalities in aerial firefighting and fatal accident rates do not appear to be improving with in excess of 55% of fatal accidents directly related to human factors as a conservative estimate - high numbers of Controlled Flight Into Terrain (CFIT), stall-spin, mid-air with "Emergencyitis" is part of this factor. Richard Alder from the Australian National Aerial Firefighting Centre Ltd. (NAFC) carried this message further by submitting his belief that the global aerial firefighting community has a problem concerning its safety record which will threaten the viability of aerial firefighting as a major solution to the problems of global wildfires. A major element is apportioned to the problem to human factors. Situational awareness, he suggested, was the key to improving human error and reliability, communication, stress and overload, information processing and decision making and threat and error management as well as specific multi-crew coordination aspects. By building a culture of safety we can avoid the issues of "Emergencyitis" to guarantee a new professionalism in the global aerial firefighting community.

Australia had recently experienced several "mega fires" and is one of the most fire prone environments in the world with more deaths and injuries from forest fire than from any other natural hazard. Forest fires in this region had significant economic cost, but fire is very much a part of the natural environment. Shane Fitzsimmons, Commissioner of New South Wales Rural Fire Service was quick to point out that aircraft don't put out fires – fire fighters do .... but that aircraft are a key tool in the fire management business and they do a lot more for fire management than just dropping water. So aircraft must be managed, coordinated and integrated into the Incident Management Team, fire ground and fire management operations and, most importantly, the aircraft industry shares similar challenges to fire agencies.

Tom Harbor, Director of Fire and Aviation Management, USFS, is concerned about the effects of wildfires on communities and called for the improvement of Smoke Modeling Systems both background models and operational status. He also wanted provision made in budgets for new tools to combat this problem using modeling systems with higher resolution, on-the-fly trajectories, other

species (e.g. ozone), smoke apportionment by source fire and to provide expert interpreted forecast text and graphics. The tools include the Wildland Fire Decision Support System (WFDSS) Emergency Smoke Response System (ESRS).

New technologies, despite the heavy cost in some cases, are an essential element to help fight the wildfire threat and these include Unmanned Air Vehicles (UAV). Many UAV systems have been developed for both the civil and military community and have been operated highly successfully for many years. New sensors are being developed that can assist Command and Control Centers to make timely decisions and allocate resources more effectively. Vince Ambrosia from NASA, said that operating of the Ikhana UAV technology was developed through the synergy of NASA Aero and Earth Sciences over the past 10 years. This synergy developed a scientific and technological approach which culminated in the development of a sensor that supports State & National wildfires and is very relevant to other regions. The Ikhana project capabilities are currently being implemented and integrated by the fire management agency partners.

## The Way Ahead

By summarizing the presentations and discussions of the Conference Johann G. Goldammer elaborated on the repeatedly stressed need for the development of internationally agreed standards and protocols for international cooperation in fire management including aerial firefighting operations. These requests are in line with several international initiatives, such as the recommendations of the 2003 International Wildland Fire Summit on the use of the Incident Command Systems (ICS) as standard for cooperation in fire emergencies, or the development of bilateral agreements that could take advantage of existing ones or a template adopted by the Summit.<sup>4</sup> The recommendations of the Summit are carried on by the UNISDR Global Wildland Fire Network.<sup>5</sup>

He also directed the attention to the *Rosersberg Initiative* of the United Nations international Advisory Group on Environmental Emergencies (AGEE), which aims at strengthening the global regime that governs environmental emergency response and preparedness.<sup>6</sup> The initiative is currently addressing (a) advocacy for and training on environmental emergencies, including wildfires, (b) analysis of relevant international and regional arrangements that govern the response and response preparedness to environmental emergencies and, based on this analysis, recommendations changes and improvements for the international environmental response area; and (c) review of operational aspects of environmental emergencies with the aim of developing best practice guidance for use by national authorities.

Participants of the conference expressed strong support for continuing the formation of cooperative mechanisms. This would ultimately lead to establish two groups that would attend to interests of the aerial firefighting community. The first group would be relatively compact and streamlined - probably based around representatives or key contact points from participating jurisdictions (government or semi-government people, nominated by their country / jurisdiction). This notional / anticipated group could be designated "Fire Aviation Working Group". The second group would be more inclusive, and would provide for membership of all interested parties, including from the supplier industry, and would be more of an "association". This anticipated group could be designated "Aerial Firefighting Association". The "Fire Aviation Working Group" could fit in the UNISDR framework as an advisory committee. The second group needs some more thinking but might be best formed either independently or perhaps in conjunction with an existing group like the International Association of Wildland Fire.

The "Fire Aviation Working Group" would fit in the UNISDR framework as an advisory committee with the following principal objectives:

- Sharing of information, especially safety related information
- Agreeing and setting of consistent operating practices and standards, where appropriate, that would assist with improving safety, and with sharing of resources

<sup>4</sup> <http://www.fire.uni-freiburg.de/summit-2003/introduction.htm>

<sup>5</sup> <http://www.fire.uni-freiburg.de/GlobalNetworks/globalNet.html>

<sup>6</sup> See dedicated web page at the UN-OCHA Joint Environment Unit:

<http://ochaonline.un.org/ToolsServices/EmergencyRelief/EnvironmentalEmergencies/RosersbergInitiative/tabid/2647/language/en-US/Default.aspx>

- Providing a conduit or facilitation mechanism for the sharing of resources between jurisdictions
- Providing advice to nations and the United Nations regarding fire aviation through the UNISDR Wildland Fire Advisory Group / Global Wildland Fire Network and

The conference chairman expressed thanks to the Administrative Conference Co-Chairman Terry Loughran, Ben Drew of BDAeroSpace and staff of Tangent Link for the preparation, implementation and follow up of the conference. A dedicated public website with conference abstracts and presentations will be set up in the near future on a dedicated the website of the envisaged "Fire Aviation Working Group" to be hosted at the GFMC website.<sup>7</sup> Participants were encouraged to spread the word about the announced follow-up conferences in Anaheim / California and Sydney / Australia in 2009 and to attend.

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<sup>7</sup> [www.gfmc.org](http://www.gfmc.org) or <http://www.fire.uni-freiburg.de/>