ISDR International Strategy for Disaster Reduction	**Aerial Firefighting Europe** 10-11 April 2013, Aix-en-Provence, France	

Conference organized by Tangent Link in association with:
United Nations International Strategy for Disaster Response (UN-ISDR)
Global Fire Monitoring Center (GFMC)

Chairman's Conference Report

Introduction

The tenth Tangent Link Aerial Firefighting Conference was held 10 and 11 April 2013 in Aix-en-Provence, France, hosted by the French Academy for Fire, Rescue and Civil Protection Officers. It was announced in the proceedings of the conference that this venue will continue to host the conference biennially, alternating with biennial conferences in the United States.

Since 2008 the Aerial Firefighting Conferences organised by Tangent Link have endeavoured to facilitate dialogue and networking between different parts of the aerial firefighting community. This is particularly important between organisations and individuals that may not otherwise have the opportunity to interact due to geographic distance or the fact that established connections form a barrier to branching further out.

The 224 assembled attendees of this year's conference represented the full spectrum of parties with interests in aerial firefighting – from those pushing the boundaries of highly specific technologies to those striving to come to terms with the best current practices in order to increase the effectiveness of aerial firefighting operations in parts of the world with limited experience in the practice. The exchange facilitated by this diverse mix of participants is at the heart of this series of conferences.

Keynote Speech

The tone of the conference was set by the keynote speech presented by Day One Chairman and Director of the Global Fire Monitoring Center (GFMC), Professor Johann G. Goldammer, by noting that aerial firefighting mustn't allow itself to become detached from the background of wildland fire by the fact that aerial firefighters are allowed a unique perspective on fire and operate in the highly technological and procedural world of aeronautics and avionics.

Wildland fire is a phenomenon whose effects are most keenly felt by those most vulnerable, particularly in extensive tracts of the world where the people and authorities are poorly prepared to deal with fire from the air or ground. As well as this, we must not be bound by our experiences in the past, but have a responsibility to prepare ourselves for the challenges of the future in a fire regime that is evolving beyond the bounds that we may assume to be present.

Aerial firefighting has also developed to become the leading form of interaction and cooperation between fire authorities in times of fire emergency. While this can be a powerful builder of relations between countries that may or may not otherwise work cooperatively, it is important that international aerial firefighting operations are more than simply a gesture of goodwill, but are also highly effective at the fundamental task of fire suppression.

International Presentations

A number of the points introduced by Professor Goldammer were reiterated by Tom Harbour in his overview of the air tanker situation in the United States. The demographic and environmental changes are leading to the 'predictable surprise' that wildland fire will be a different creature in the future. While fire will remain a complex phenomenon it is important that each 'small' issue be dealt with individually if central managers are to stand a chance in managing large, complex situations.

Mr Harbour went on to give more technical details that offered insight into the perspective from a high position, including the different utility of helicopters in comparison to fixed-wing aircraft, and improving strategic activities that will allow aerial assets to continue to play their role as support for 'boots on the ground' in times of tightening budgets.

The conference provided a unique opportunity to hear speakers with experiences from across the globe tell of developments in their parts of the world. The Mediterranean region was introduced by Colonel Ettore Storti of the Italian Civil Protection Department. An overview of the state of aerial firefighting at the regional and national level was provided as well as the experiences of increasing cooperative actions with other Mediterranean countries. Italy regularly deploys aircraft to nearby countries but some concerns regarding these deployments were raised, including lack of standard activation procedures, shortfalls in the use of English as a common language and undefined liability in the case of mistakes or accidents.

The Mediterranean experience was further covered in the presentation by Lieutenant Colonel Juan Carlos Clerencia Sierra of the 43rd group of the Spanish Air Force. The importance of a common and proven incident command system was highlighted in the case of all operations involving the CL215s and similar aircraft. Of particular interest was the fact that the air coordinator must not be purely an air traffic controller or a firefighter or a government official, but must have experience in all three facets of the task at hand. It was suggested that the Command and Control system be seen as an example to those attempting to develop an incident management system for aerial assets.

A piece of the French experience was presented by Richard Biagioni, who introduced the research cluster operating in South-east mainland France and on Corsica. By focussing the joint efforts of a wide range of experts on the management of the risks associated with emergency events, Pôle Risques hopes to bound ahead of the current state of affairs to provide workable solutions through innovation.

Moving the focus far to the east, Professor Goldammer stepped in for Andrey Kalinin and Andrey Eritsov to present the current situation in Avialesookhrana. Russia has a long history of using aircraft for wildland fire monitoring and suppression, including the famous smokejumpers dating back to 1934. The sheer size and remoteness of large tracts of Russia has necessitated creative development of all systems related to fire management. This includes a mixed system of monitoring involving ground-, air- and space-based information gathering systems as well as novel approaches to training such as distance education. While Russia has collaborated with Europe and North America on fire for many years, the high impact of the 2010 fire season on European Russia was a big wake-up call to Russian fire managers and has resulted in a great increase in the interest and pace of change for wildfire management in Russia. As part of this, Russian Federal and Regional authorities are increasingly seeking cooperation with countries neighbouring and distant from Russia.

The spotlight was also shone on the region of East and South-east Europe in presentations from experts from Ukraine and the Former Yugoslav Republic of Macedonia. Sergiy Zibtsev told of a country still finding its feet in terms of fire aviation when describing the situation in Ukraine. While aerial firefighting is still in its infancy in Ukraine it is seen as a vital tool in the reduction of the hazard posed by the radioactively contaminated terrain of the Chornobyl Exclusion Zone bordering Belarus and Russia. In his work at the National University of Life and Environmental Sciences of Ukraine Mr. Zibtsev has been developing an understanding of the ecology and management options relating to wildland fire in the various responsible agencies within Ukraine as well as with international partners in the region and further afield. As part of this, the Regional Eastern European Fire Monitoring Center (REEFMC) was recently founded at this university to provide a platform and forum for the discussions which are beginning to take place.

Dr. Nikola Nikolov, of the University of Skopje, presented an overview of the fire situation in the tiny, landlocked Former Yugoslav Republic of Macedonia and the story of developing the fire aviation capabilities in his country. Attendees were heartened to see rapid progress in this field reflecting active and concentrated efforts to better understand the complex task of maximising aerial fire suppression effectiveness in the specific geographic, economic and social circumstances presented by FYRoM. One of the more concerning challenges for aerial aviation in this country is a serious lack of trained pilots – a situation which has lead to some worrying operational mistakes.

In a presentation regarding the current situation in Israel, Major General Shacher Ayalon spoke of and showed a film containing stirring details of the tragic events of the Mt Carmel fire in 2010, including the heroic acts carried out by many of the emergency services workers in a situation that had become chaotic and desperate due to the overwhelming nature of the event. To follow, he outlined how Israel has attempted to take an objective perspective on this tragic event and improve the training, communication and organisational structure to enhance the preparedness of the country to emergencies of all kinds.

Early on day one we were offered an insight into multilateral European activities relating to emergency response by Dmitrios Pagidas, who presented the work of the European Union Civil Protection Mechanism. The European Community of all 27 member states and 5 non-member states has been developing a united approach to disaster response in recent years. The Mechanism covers a wide range of emergency situations and to date most of the deployments of the modularised system have been for non-fire events such as floods and tsunamis. However, aerial firefighting modules consisting normally of 2 Canadair 215 aircraft has been activated relatively often, with 9 such activations, mostly in south-east Europe, in 2012. In

recent times the Civil Protection Mechanism has increasingly been used as a central point for organising the European response to emergencies occurring outside of the participating states, but this is hindered by the ad-hoc arrangements made in these situations. The upcoming transition of the Mechanism's Monitoring and Information Centre to become the Emergency Response Centre aims at making such improvements.

Fire Aviation Technology

From the technical side of the conference attendees were offered updates from a number of companies working closely with the fire aviation managers to improve the tools available for the fighting of fires from the air.

Benoit Terral gave an overview of the latest developments coming from Eurocopter. Of particular interest is the newly developed internal tank that can be fitted to the already popular EC225. Features such as a retractable pump hose and collapsible water tank show that Eurocopter has actively collaborated with the fire aviation community.

Recent activities of Russian aircraft manufacturer Beriev were outlined by Cristophe Briand and Dina Krivonsova. The centrepiece of the presentation covered the amphibious jet, the Be-200. This powerful plane is used extensively in Russia and in recent years has taken part in firefighting operations across southern Europe.

In other news from that part of the world, Andrey Kozlovskiy described the efforts of collaboration that Russia's PANH Helicopters are undertaking to refine home-grown technologies and identify the most efficient use of the resources available to aerial firefighters in this part of the world.

Moving to the United States, an economic analysis of the ideal composition of firefighting fleets carried out by the RAND Corporation was described by Edward G. Keating based on the fundamental idea that a small fire extinguished is a large fire avoided. By examining past fire events and carefully evaluating the capabilities of specific types of aircraft in these situations a picture was built up of the factors that should influence the purchase or lease of aircraft based on the likely circumstances of use. This can then be extrapolated to larger scales. While the modelling process currently points to favouring scooping aircraft, it is important to note that the model does not value the suppressing effectiveness of retardant as higher than that of water, so further refinement of the model is required.

In the only presentation specifically focussing on training, the fire emergency simulator produced by SEILAF, of Spain, was introduced by Carlos Abrego Aguilar. This simulator has the great advantage that multiple subjects can take part in different aspects of the same simulated fire. The advances made in spatially and temporally explicit fire simulation and the collection of trainee data make this a very interesting tool for obtaining cheap and safe training experience.

The subject of Unmanned Aerial Vehicles and their place in fire aviation continues to be a topic of great interest. Representing CEEMA, Dr. Moustafa Kasbari made the case for the rapid introduction of UAVs into the aerial firefighting scene, arguing that the concerns of information sharing, aircraft avoidance and firefighting effectiveness have been fully addressed and should make way for the introduction of UAVs to fire aviation missions.

This point would be strongly supported by Alexander Burwitz, who introduced a novel scheme for fighting fires using several aerially-launched drones. The experienced pilot of CL215s claims to fully recognise the limitation of sending pilots out at night and over contaminated land and proposes that the Nitrofirex system presents a great number of advantages for solving the pertinent issues facing fire aviation in the present day.

Finally, the payload of firefighting aircraft was discussed extensively with two presentations about the chemicals available for these operations. Firstly, a brief history and overview of the fire suppression chemicals was presented by Eddie Goldberg, representing Phos-Check. The importance of using the right tool for the right job was emphasised strongly.

With this in mind David Cant introduced a new chemical developed in Australia called Blazetamer 380, which was officially launched in Europe at this event. Mr. Cant acknowledged the presentation from Mr. Goldberg and described how his depth of experience in all levels of firefighting led him to identify this product as an important addition to the current repertoire available to the aerial firefighter. The main advantage of Blazetamer 380 is the fact that it is a water enhancer whose effectiveness is far less dependent upon water quality. This can improve effectiveness and lower the opportunity for errors in the heat of the moment.

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