



## **Aerial Fire Fighting Europe 2021**

Tallinn, Estonia, 12-13 October 2021

### **Chairman's Report**

Hosted in Northern Europe for the first time, Aerial Firefighting Europe Conference and Exhibition took place on 12 and 13 October 2021 in Tallinn, Estonia. Organized by the Tangent Link Team and chaired by the Global Fire Monitoring Center (GFMC), the conference provided the opportunity of the first in-person exchange after travel and meeting restrictions imposed by national and international precautionary measures in response to the COVID-19 pandemic. About two hundred attendees represented thirty countries of Europe, North and South America, the Middle East and Asia.

The conference took place at a time, when the increasingly noticeable impacts of climate change and land-use change are challenging Europe and the world. Over the last years, Europe's natural and cultural landscapes – including the society living therein – have become increasingly vulnerable to wildfires. During the Northern hemispheric summer of 2021, extreme droughts and heat waves favoured the spread of severe wildfires in and around the Mediterranean Basin, notably in Greece, Turkey, Italy and the Western Balkans. At the time of opening of the conference, wildfires continued to burn in Siberia – and a wildfire, which had started on 11 October 2021 near Santa Barbara, California, continued to rage during the days of the Tallinn conference. At the same time, South America experienced large-scale application of fire in land-use change, notably in the Amazon Basin, as well as drought-driven wildfires in fire-sensitive and biodiversity-rich ecoregions such as the Pantanal.

### **The EU Civil Protection Mechanism**

Focusing on Europe, the risk of occurrence of wildfires of high intensities and severities are increasing. After the opening remarks by Tangent Link and the GFMC, the Head of Capacities & Operational Support, Directorate-General for European Civil Protection & Humanitarian Aid Operations of the European Commission, introduced the Union Civil Protection Mechanism (UCPM) and the rescEU initiative. He reviewed the eight activations of the UCPM in 2021 and the assistance offered by 16 EU Member States, Forward-looking, the planning of development of Aerial Fire Fighting (AFF) capacities, and earmarking of the budget (Multi-Annual Financial Framework 2021-2027) were highlighted as well as the implementation of the rescEU strategy, in cooperation with Member and Participating States. On the second day of the conference, his presentation was complemented by a report of the EU's Joint Research Center (JRC) on the provision and utility of the European Forest Fire Information System (EFFIS) and the status of the Global Wildfire Information System (GWIS).

Two reports by Greece and Spain reviewed international exchange in AFF. The representative of the Fire Fighting Coordination Center of Hellenic Fire Corps, Greece, addressed the integration of international aerial assets and ground support units during the wildfire emergency in summer 2021. The UCPM had mobilized one of the largest ever European deployments of firefighters and AFF resources in history. In total, 24 firefighting aircraft, 1202 firefighters and 250 vehicles from 22 countries around the world supported Greece in this extreme situation of 2021.

A journey of the history and experiences in national and international missions was presented from the cockpit of a CL-415 of the 43rd Squadron, Spanish Air Force. The risks and threats during aerial forest fire missions were highlighted – and scenarios developed how an international deployment from Spain to Estonia could look like.



## Voices from the Euro-Mediterranean

A report of the Office Executive of the Forest Fire Fighting Air Fleet of the National Fire Corps of Italy addressed the response of the Forest Fire Air Fleet to climate change and forest fires in Italy. The long-term forecasts for the next 30 years show an expansion of areas of high wildfire risk in Italy towards the north-western Italian regions, in particular Piedmont. Conditions of high temperature, water stress and strong winds have already today greater frequency, intensity and duration in different areas of the national territory even outside the traditional fire seasons. This scenario requires interventions for the overall strengthen of the national forest fire defense system, in its state and regional components, in the short, medium and long term.

The report of France was presented by the Deputy Director of the Test & Research Center of Valabre (CEREN), who is also serving as Head of the Simulation Centre for Aerial Rescue Coordination (SECOAS). He introduced the system of aerial observation and assessment in support of aerial firefighting, particularly during simultaneous wildfire situations. This task is carried out by a senior firefighter officer on board of a Beechcraft 200 of Civil Protection. Optronic cameras provide information to different functions of incident management, i.e. the Aerial-Ground Function (based on the ground), the Embarked Aerial Function (helicopter-based), the Water Bombing Helicopter Function and the Pilots' Coordination Function (a pilot in charge to organize and guide the entrance of firefighting aircraft to the fire area.

## Perspectives from Northern and Central Europe

At the conference, the Nordic countries were represented by Sweden, Finland and Norway. The Swedish Civil Contingencies Agency (MSB), National Operations & Civil Protection, reported about the year 2018 during which 8,000 wildfires had affected more than 20,000 hectares of forests. During that fire season more than 9,400 aerial firefighting interventions involved 1000 flight hours and discharge of close to 20,000 tons of water. Since then, MSB has implemented several measures to strengthen the ability to handle future similar situations in both Sweden and northern Europe.

The Norwegian Civil Protection Authority (DSB) decided after the 2018 forest fire season that a closer look at the future is needed. What kind of scenarios would Norway possibly have to face in ten or more years to come? Would the country be able to meet the future threats with the concept and the capacities that are in place? An Emergency Preparedness Analysis (EPA) was conducted. Different stakeholders cooperated in the process and together they agreed on a possible future picture of what may happen. This EPA will be a part of our platform of information to all levels, agencies, and involved organizations that have to prepare for the handling of more severe threats than we have ever seen before. This has given Norway an opportunity to build cross-sectoral competence and to improve our coordination on joint action concerning the work against wildfires. Europe will most likely have to deal with more severe scenarios caused by climate change. The risk picture is complex and this calls for a strong international cooperation on prevention, preparedness and response.

In anticipation of increasing risks of natural disasters and other emergencies, an initiative for establishing a Joint Research, Learning and Training Center for European Civil Protection Center was presented by the Mayor of Welzow (Wjelcej), Germany. The city of Welzow is located in Brandenburg State, a region, characterized by the highest wildfire risk in Germany. The mayor referred to the extreme drought, heat waves, wildfires, rainfall periods and floods. The movement of the wildfire belt from Southern Europe to the North and the increase of droughts in Eastern Europe have generated concerns of civil society and governments of the region. These crises reveal the need of strengthening local, national and pan-European capacities in crisis management. In Brandenburg State, Germany, the communes Welzow and Senftenberg are offering conditions suitable for the establishment of a European Civil Protection Center. Besides 540 hectares of land available for industrial development, the communes provide a local airport in Welzow and additionally Sedlitz Lake for landing and uptake of water for scooping firefighting airplanes. The vicinity to industries, universities and other research and development institutions in Berlin and the States of Brandenburg and Saxony and provide an opportunity for developing an innovative cluster of actors capable to address disaster risk reduction and disaster response, including research and training.



## Perspectives from the Industry

Representatives of the aerial firefighting industry, sponsors of the Tallinn conference, presented achievements and strategic visions to meet the impact of climate change on increasing wildfire threats by technology development.

Airbus focused on the experience and utility of helicopters as efficient first responders involved in recent fires around the world. Airbus helicopters are not only used for water bombing but as well provide support to the firefighters on the ground. During the off-season the helicopters continue their duty in case of flooding or power line reconstructions.

Viking Air Limited, Canada, presented the operational plan to industrialize, and bring to market the Canadair CL-515. The Global Sales Director, Aerial Firefighting Aircraft, presented the Overall Canadair Product Strategy, the status of CL-415EAF, status of the new avionic suite and the CL-515 program status and launching strategy.

Perimeter Solutions addressed the utility of modern AFF retardants/liquids, not without looking back to the history of AFF in the 1940s and the beginning of the use of fire retardant back in 1963, when PHOS-CHEK fire retardant was first introduced. Researchers experimented with numerous chemical combinations to develop a solution that would be the most effective and have the smallest impact on the environment. The presentation provided attendees with a greater understanding of the latest generation of firefighting retardants and liquids, and how different solutions can benefit or damage the aerial firefighting industry.

Air Tractor Europe, Spain, addressed the evolution of fire seasons in Europe and their development in recent years and how the paradigm shift requires a change in firefighting practices. The presentation included official figures about the fires that have occurred over the last few years, focusing on 2019-2021. These cases were compared a posteriori with the fire-fighting methodologies applied, and will be subjected to comparison with the fires that have occurred in other countries which, having fires on very similar dates and under very similar circumstances, have dealt with them in a very different way.

Conair Aerial Firefighting, Canada, presented views on “Changing Tactics for the Changing Environment” in response to changing fire behaviour influenced by climate change. “What had worked in the past will no longer work”. Essential conclusions: Change of tactics – moving towards a holistic, balanced approach, incorporating both amphibious water bombers and retardant air tankers into their air attack missions, for the most effective results.

## Fire Management Challenges

Until a few years ago, the climatic conditions in Central, Western Atlantic, Northern and Eastern Europe were advantageous. The fragmented and intensively cultivated landscapes, forests and protected areas experienced limited numbers of usually small-sized wildfires of short duration. More than a decade ago, the first warning signals came from the United Kingdom and Ireland, where the humid Atlantic climate began to change – along with unprecedented amount of wildfires affecting moorlands, heathlands and forests. Beginning in 2018, recurrent, long-lasting droughts affected the vitality and resilience of forests, agricultural lands and other open landscapes of Central and Northern Europe. Widespread desiccation of vegetation cover, associated with dramatically lowered soil moisture and water tables, created conditions favourable for wildfires.



Central and Northern European countries need to adjust to a new reality. This is calling for sharing expertise with other regions of the world, where experience in fire management methods had evolved over decades. Vice-versa, other regions of the world may gain insight into the problems and lessons identified in managing dangerous wildfires, e.g. those burning in landscapes that are contaminated by environmental pollution or the heritage of armed conflicts. For instance, unexploded ordnance (UXO) stemming from the World Wars, the Cold War and other recent conflicts, pose high risk to fire management personnel on the ground and in aerial firefighting assets. Experience reveals that such fires, even if small-sized, may have long duration and exert extreme impacts on firefighters and society. In addition, fires burning on territories contaminated by industrial waste or radioactivity, e.g. in Eastern Europe, pose high threats to the environment, society and fire management personnel. The presentation of the Global Fire Monitoring Center (GFMC) provided insight into 20 years of experience of fire management on contaminated terrains of Central-Eastern Europe and neighbouring regions and the need for developing cross-sectoral, integrated fire management policies.

The experiences of fire management in Spain were presented by the Service Manager of the Spanish Wildfire Management Service, Ministry for the Ecological Transition and Demographic Challenge (MITECO). The report highlighted the modus operandi of the Wildfire Reinforcement Brigades (Brigadas de Refuerzo contra Incendios Forestales – BRIF). Being faced by an average of 12.000 wildfires per year, affecting ca. 100,000 ha of different types of landscapes, the National Wildfire Coordination Center of MITECO supports 17 autonomous regions, which are responsible for fire management. Ten BRIF Teams – also referred to as Spanish National Helitrack Crews – are composed of more than 600 highly specialized staff who live and work in the rural and forest areas, are ready to be deployed all over the country and abroad. The BRIF Teams are working all year round in silviculture and fuel management in strategic areas of high wildfire risk. In average, the BRIF Teams reduce fuel and apply prescribed fire on 1,200 ha annually. This concept ensures the availability of fire response team in critical sites at any time, and provides full, year-round employment of staff.

The Portuguese Integrated Rural Fire Transformation Process was presented by the Chairman of the Board of Directors, Agency for Rural Integrated Wildfire Management (AGIF), Portugal. In 2017, wildfires affected citizens and natural and built heritage, leaving in their wake a devastation never seen in Portugal or any other western Europe or Mediterranean country. In the aftermath of those events, discussions resulted in an agreement on the systemic weaknesses identified by the Independent Technical Committees created to study the events and make proposals to mitigate such situations. Some problems were deep-rooted and known, such as the lack of prevention or failure to integrate knowledge with management operations. The scale of the tragedy and the resulting public awareness required an ambitious approach, drawing on all available national capacities and the best international knowledge available to reduce the occurrence of wildland fires and the resulting damage to acceptable levels from an environmental, social, and economic perspective. It was, therefore, imperative to establish an Integrated Plan that included a strategy and action plan, with the involvement of all agents, and to undergo a major systemic transformation, closing gaps between prevention and suppression. To that end, Portugal witnessed a transformation process during which a different strategy was devised, and governance was changed, getting all partners closer together under a frequent dialog, not only on a technical and operational level, but also with a deep political commitment, resulting in a better shared knowledge of capabilities and achievements along a new process chain that doesn't limit itself to prevention and suppression, but has a circular nature from planning to lessons learnt.



## Discussions: The Way Ahead

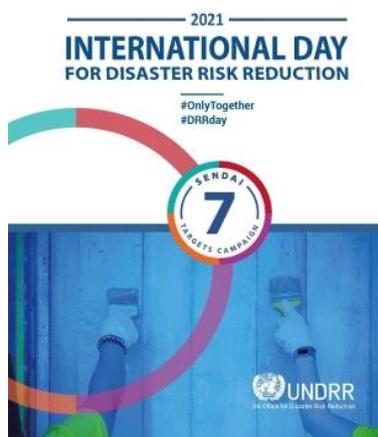
The Conference turned out to be interactive – with an intensive dialogue between the presenters and the audience as well as among the audience. Beyond the technical and operational topics, many questions and comments addressed the role and necessity to strengthen wildfire prevention. The vivid discussions referred to the increasing wildfire hazard as consequence of the rapidly changing climate and change of land-use and demographics. The views from the national reports, as outlined above, showed that inter-agency coordination in view of wildfire prevention and preparedness indeed are gaining more attention. The contributions from Portugal and Spain are valuable examples speaking for themselves.

The discussion continued throughout a Panel Session, moderated by Tangent Link addressing “Global Cooperation in Wildfire Management: Practitioner’s View from the Air and the Ground”. The representatives of Portugal (Agency for Rural Integrated Wildfire Management), Norway (Directorate for Civil Protection) and Ukraine (Regional Eastern Europe Fire Monitoring Center) referred to the need of improved cross-sectoral cooperation and coordination among stakeholders at national and international levels. This is particularly valid for protecting local rural communities – by involving them proactively in wildfire hazard reduction and self-defense of villages, rural farmstead and peri-urban areas.

The need for working further and improving international cooperation in aerial firefighting was presented from an experienced CL-415 pilot and aviation journalist. He referred to the International Fire Aviation Guidelines and the Manual for Common Rules in Fire Aviation, which were developed by the International Fire Aviation Working Group (IFAWG). The guidelines still wait for application in the frame of international exchange of AFF resources for enhancing interoperability, safety, effectiveness and efficiency of international AFF missions.

With regard to the Global AFF Compact, which had been discussed initially at the Aerial Fire Fighting Conference in Sacramento in 2020, the Director of the Global Fire Monitoring Center underscored the need for reaching an agreement under the Sendai Framework for Disaster Risk Reduction 2015-2030. At the eve of the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow on 31 October – 12 November 2021 and the United Nations International Day for Disaster Risk Reduction on 13 October 2021 – the second and final day of the Aerial Firefighting Conference Europe 2021 – the conference chair thanked the participants for their forward-looking contributions and engagement.

13 October 2021 – With its outputs, the Aerial Firefighting Conference Europe 2021 constituted a contribution to the United Nations International Day for Disaster Risk Reduction.



*The International Day for Disaster Risk Reduction was started in 1989, after a call by the United Nations General Assembly for a day to promote a global culture of risk-awareness and disaster reduction. Held every 13 October, the day celebrates how people and communities around the world are reducing their exposure to disasters and raising awareness about the importance of reigning in the risks that they face.*