

Radio Communications Dynamics in Aerial Fire Fighting: How Do Additional Resources Impact Operational Safety and Effectiveness?

Author(s):

Kat Thomson, Alberta Sustainable Resource Development/
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Abstract:

In aerial firefighting, it is common to send multiple resources to the scene based on the hazard rating and values at risk as estimated by the responding agency. However, once aircraft arrive, there is not much known about the trade-off between efficiency and safety that takes place over large incidents with multiple resources. In the province of Alberta, Traffic and Collision Alert Device (TCAD) has been placed in most aircraft as a means to improve airspace safety and tracking. However, the impact of additional resources over a fire on safety and efficiency has not been analyzed in relation to fire growth or attack times using collected data. With each additional resource on scene, the time it takes to sort out tasks over the radio invariably increases, but by how much? How do staggered arrival times versus simultaneous arrival times impact the operation? This research provides a statistical analysis of drop-report data from the province of Alberta for 5 fire seasons. In addition, a representative sample of cockpit recordings of pilot-to-pilot, and internal cockpit transmissions at the time of arrival will be reviewed to provide qualitative evidence on the communications dynamic of multiple-resource incidents with a focus on safety and efficiency. This research is meant to provide a numeric picture of how additional resources impact fire response while giving an updated picture of situational awareness and cockpit resource management in high pressure, high volume workload environments using actual transmissions data.

This presentation could be incorporated into a panel or otherwise, as you see fit. This could also fit into your "scientific applications for wildland safety" category.

Presenter Bio: Kat has 13 years of wildland fire experience spanning 400 incidents in Alberta, BC, Yukon, Montana, Oregon, and Idaho as a firefighter, rappel spotter and Air Attack Officer. She recently completed F-BAN training, holds an MPA in Advanced Policy and Economic Analysis, and is a PhD candidate at Columbia University in New York. In 2008 Kat developed a performance management system for the Fire Department of New York City (FDNY) for property loss, and she is now working for the Uniformed Fire Officers Association (UFOA) which represents the FDNY as a strategic consultant on operational efficiency and safety.

Resilience and High Performance: What the Wildland Fire Community Can Learn from the U.S. Military

Author(s):

Jim Saveland, US Forest Service

Abstract:

Recent advances in the science of psychology are rapidly mending the Cartesian mind-body rift. The U.S. Military has recognized the importance of mental fitness to compliment physical fitness. Health-of-the-Force was a strategic priority of the Chairman of the Joint Chiefs of Staff in 2009-2010. Wellness enhancement and training is one of the four focus areas of a Department of Defense task force report, The Challenge and the Promise: Strengthening the Force, Preventing Suicide, and Saving Lives; issued in August of 2010. This paper will review psychological training in general and resilience training in particular that is being implemented in the military;

including the U.S. Army's \$120 million initiative on Comprehensive Soldier Fitness (CSF), the U.S. Air Force Total Force Resiliency and Airman Resiliency Program, the Navy's Operational Stress Control program (OSC), the Army Center for Enhanced Performance (ACEP), and the Real Warrior's Campaign. This paper will also examine the work of the Mind Fitness Training Institute (MFTI), a non-profit research and training organization that developed Mindfulness-Based Mind Fitness (MMFT) training for the U.S. Army and Marines to enhance performance and build resilience to stress, change and uncertainty. In addition to examining the content of these programs for applicable lessons for the wildland fire community, methods of implementation will also be discussed.

Presenter Bio: Jim Saveland is the Program Manager for Human Factors & Risk Management RD&A

The France – USA High Reliability Organizing Project: Enhancing Reliability in Incident Management

Author(s):

David Allan Christenson, WF Lessons Learned Center

Abstract:

This University of California at Berkeley, interagency US Wildland Fire Lessons Learned Center (LLC), and National Advanced Fire & Resources Institute (NAFRI) project collaborated with firefighters from the SDIS13 Bouches du Rhone Regional Fire Service of Southern France and US Forest Service firefighters from 2007 to 2010.

The project takes major research direction for progress in understanding HROs, with direct benefits for practitioners, by analyzing how competing demands (quick versus accurate decisions, ignoring noise versus picking up weak signals ...) are successfully managed by highly reliable IMTs.

The central argument of our work is that the successful management of these conflicting requirements is the main source of high reliability in emergency operations. To explore this idea, we observed some of the best Incident Management Teams from France and from the U.S. for three years. This paper presents our findings and contribution to incident management. The first section sets the theoretical framework within which the management of the tension between opposing demands are conceptualized. The second section offers a brief description of the France-U.S. High Reliability Organizing (HRO) project, and the third one presents the contrasted results of French and U.S. Incident Management Teams as well as their interpretation. The final section discusses how firefighters can enhance reliability in incident management, combining stability and change, flexibility and robustness, adaptability and adaptation.

Presenter Bio: Since 2002, as the Assistant Center Manager of the U.S. Wildland Fire Lessons Learned Center, David has focused on promoting organizational learning, implementing high reliability organizing, and creating a widely used knowledge management system for the nation's wildland fire community. He coaches incident management teams on practical HRO implementation and is a co-chair of the French/USA HRO in IMTs Project. He has given presentations in Spain, Greece, Sweden and France in addition to the U.S. on these subjects.