

Aerial Firefighting - Aviation in Action

Airports in Colorado Support Critical Missions

In Colorado, aerial wildland firefighting is an important tool to contain and suppress wildland fires. Colorado has 24.4 million acres of forest and woodlands.¹ Since 2010, Colorado has grown in population from approximately 5.1 million to an estimated 5.9 million people in 2020.² A substantial amount of new development has occurred on the wildland-urban interface (WUI) of the Front Range. As the state's urban areas expand into fire-prone land, the number, intensity, and complexity of wildland fires has been increasing. Colorado does not have a specific wildfire season per se; instead, the state sees short periods of fire hazard throughout the year, depending on temperature, humidity, and wind conditions.³

Resources required to suppress fires are generally expensive and highly variable. As a consequence, the emergency firefighting response system is a highly organized, interagency effort. Airports and heliports are essential components of the response system. Colorado airports, both large and small, are critical assets to support aerial wildland firefighting, emergency evacuations, aerial inspections, and medical airlift of responders and patients. Search and rescue teams and firefighters often rely on helicopters, fixed wing aircraft, and local airports to stage and complete their missions. In addition, the Air National Guard, the Army National Guard, the U.S. Forest Service (USFS), the Bureau of Land Management (BLM), the Bureau of Indian Affairs, and local firefighting units all function as key members of the state's firefighting system.

Aerial wildland firefighting is key in the very early stages of a fire. Early detection and suppression is the goal, especially in the WUI. Aircraft and helicopters are used for remote sensing of the fire location and behavior, delivery of equipment and supplies, transport of firefighters, drop of fire retardant or water to slow down a fire, and for backfires and prescribed burns. Normally, the initial response to a wildland fire is conducted by a local entity such as a city fire department or fire district. When a wildland fire exceeds local capabilities, the fire chief may transfer responsibility for the fire to the county sheriff. If additional resources are needed, responsibility is transferred to the State of Colorado. Sometimes a national response is needed that would bring in firefighting resources from all over the country. Federally managed aircraft and helicopters to fight wildfires are dispatched through the National Interagency Fire Center (NIFC), which is located in Boise, Idaho.

The following examples show aviation in action during the Decker Fire near Salida and at the Center of Excellence for Advanced Technology Aerial Firefighting at the Rifle-Garfield County Airport (RIL).

Decker Fire – Harriet Alexander Field (ANK)

In September 2019, a lightning strike started what would be known as the Decker Fire just two miles south of Salida on USFS and BLM lands. Over the next eight weeks, the Decker Fire grew to nearly 9,000 acres and skirted perilously close to Salida. Five helicopters and two fixed wing aircraft, flying out of Salida's Harriet Alexander Field (ANK), launched an aerial firefighting assault on the Decker Fire. Larger tanker planes operating from airports in the Denver metro area dropped water and slurry on the fire as well.

The Decker Fire Flight Command and ground firefighting crews worked effectively together to contain the blaze which grew by more than 2,000 acres in just a three-day stretch in early October. Unstable wind conditions and humidity made the effort especially challenging. ANK was buzzing with activity as aircraft came and went dozens of times each day. Fortunately, a snowstorm moved in near the end of October and helped firefighters contain the blaze without significant harm to the surrounding communities.



*Decker Fire burning above Salida
(Photo courtesy of Kimmie Randall)*

¹ Colorado State Forest Service, Colorado Statewide Forest Resource Assessment

² Colorado Demography Office, Population Estimates 2010-2015, 2015-2020

³ Colorado Division of Fire Prevention and Control

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Center of Excellence for Advanced Technology Aerial Firefighting – Rifle-Garfield County Airport (RIL)

The Center of Excellence for Advanced Technology Aerial Firefighting (CoE) was authorized and funded in 2014 by the Colorado Legislature as a quasi-independent research center to evaluate existing and new technologies that support the state's aerial wildland fighting efforts. The CoE is located at RIL.

Today, the center's role includes testing and evaluating new technologies and tactics that firefighters can use when dealing with wildfires. Research projects demonstrate the wide range of contributions CoE is making to improve the state's capability for fighting wildfires. Projects include:

- Aerial application of water enhancers to evaluate whether these polymer-based products added to water improve fire-suppression characteristics
- Integration of unmanned aerial systems and unmanned ground systems into firefighting and public safety programs
- UAS detection, tracking, and identification of unauthorized drones at wildland fires and other public safety events
- Use of safe, effective, and efficient night aerial firefighting operations in Colorado
- Development of a Team Awareness Kit to provide map-based situational awareness to firefighters and other first responders when traditional Internet access is unavailable or unreliable (a related project is investigating data link capability to deliver digital fire information from a multi-mission aircraft to fire crew on the ground)
- Development of a Colorado fire prediction and decision system

The airport, higher education institutions, state and federal government agencies, and business partners around the state are strong supporters of CoE and its research contributions to effective firefighting in Colorado.



Photo Courtesy of The Center of Excellence for Advanced Technology Aerial Firefighting

Summary

Airports are an integral component of Colorado's firefighting capability and emergency response. They serve as critical logistics centers and bases for aerial wildland firefighting and other types of emergency response. When a natural disaster or emergency strikes, airports large and small are indispensable launching points for coordinated response and recovery.