

High Altitude Testing and Training

High Altitude Testing Facilities Keep Colorado on Top

Colorado has 78 of the 100 highest peaks in the Rocky Mountains, making western slope airports, in particular, ideally situated to host high altitude testing of aircraft, helicopters, and engines, as well as the training of pilots and crew to operate these aircraft under extreme and difficult conditions.

Several Colorado airports offer high altitude testing and training facilities including: Central Colorado Regional (AEJ), Colorado Springs Municipal (COS), Eagle County Regional (EGE), Gunnison-Crested Butte Regional (GUC), Leadville-Lake County (LXV), and Telluride Regional (TEX). These airports provide services to national and international aerospace companies testing new aircraft and components. The airports also support training schools for pilots, search and rescue teams, and aerial firefighters.

The stories below highlight one high-altitude testing center and one training center in order to demonstrate the value of these facilities to the local economy and the public safety of the state.

Leadville-Lake County Airport – Helicopter, Fixed-Wing, and Engine Testing

The Leadville-Lake County Airport (LXV) is North America's highest paved public use airport at an altitude of 9,934 feet. Because of its unique location in the mountains, LXV is a prime spot for aircraft and helicopter testing operations. At this elevation, engine performance, rotor blade efficiency, lift capability, and pilot/aircrew systems are critical. Major aerospace companies have visited LXV to perform benchmark testing of their equipment and operating capabilities. Recent visitors include Leonardo Helicopters, BLR Aerospace, Erickson Inc., Korean Aerospace, Airbus Helicopters, Carson Helicopters, Bell Helicopters, Sikorsky Aircraft, and multiple military services' aircraft. Subaru Corporation tested automobile engines on LXV property as well. LXV has also served as a support base for search and rescue as well as firefighting.

To build out its testing capacity, Lake County built a large 11,000 square foot hangar to accommodate testing companies and transient aircraft. The county offers support packages to companies conducting flight test programs that include hangar and office space, classrooms, an isolated helicopter pad with a tether point, fueling services, and equipment rentals. Testing companies usually come for two to six weeks with a crew of between eight and 30 pilots, mechanics, and coordinators. Lake County sees significant economic impact when multiple teams arrive and require lodging, car rentals, dining, recreation, and retail sales. These economic impacts support LXV's contribution to aircraft research and development.

High altitude testing and fuel sales to outside companies have proven to be an important revenue generator for LXV and have put the airport on the map for high quality and responsive service and a safe, well-managed testing environment. Many different aerospace companies use LXV, often more than once a year. For its part LXV has grown from a remote general aviation airport to an internationally-recognized testing facility.



Photos courtesy of Leadville-Lake County Airport

High Altitude Testing and Training

HAATS – Eagle County Regional Airport

Eagle County Regional Airport (EGE) is home to the Colorado Army National Guard High-Altitude Aviation Training Site (HAATS). This unique training program, established in 1985, offers rigorous training to experienced helicopter pilots flying heavy equipment in mountainous terrain and in extremely high temperatures. HAATS attracts over 400 pilots and crew each year from all over the world to train for one to two weeks at the HAATS facility located at EGE. Students come from the National Guard, active Army, Army Reserves, and international military aircrews.

Flying when the air pressure is low requires special skills the HAATS instructors refer to as Power Management in a ‘high, hot, and heavy environment’. As helicopters fly higher, the air thins and provides less lift while the engine temperature is rising. Calibrating the aircraft’s power under these circumstances requires pilot and crew situational awareness. Add to this the rough, difficult terrain of the Rocky Mountains, HAATS provides unmatched flying experience and excellent training for aircrew that will be sent to mountainous regions such as Northern Iraq and Afghanistan.

HAATS rotates utilization of one million acres of U.S. Forest Service and BLM land for training. In addition to flying over terrain between 6,500 to 14,000 feet in elevation, students can practice maneuvers in over 100 different landing zones that include areas with snow, dust, and poor visibility, and varied terrain that includes ridges, saddles, pinnacles, and canyons.

HAATS is also a strong participant in the community. HAATS teamed up with Vail Mountain Rescue and Mountain Rescue Aspen to conduct search and rescue operations. According to Colorado Public Radio, these groups performed 21 rescues in 2019 and saved 30 lives.¹ HAATS has also joined with the Colorado National Guard to participate in wildland fire mitigation and helicopter water drops.

Summary

Colorado’s unique rugged and high-altitude terrain has made it possible for airports and the aviation community to become leaders in high-altitude testing and training. These services are both industry critical and bring additional jobs, revenue, and recognition to Colorado airports and communities. The HAATS program is unique within the Department of Defense and brings direct benefits to the Gypsum/Eagle/Vail areas. For LXV, high altitude testing has developed into an airport specialty and has set the foundation for LXV’s self-sufficiency.



Photo courtesy of Colorado National Guard website



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¹ Kim, C (September 2019), “Eagle County Airport Is Home To One Of The Country’s Unique Military Flight Schools. Welcome To HAATS” Available online at: <https://www.cpr.org/2019/09/03/the-eagle-county-airport-is-home-to-one-of-the-countrys-most-unique-military-flight-schools-welcome-to-haats/> (Accessed March 2020)