

## Unmanned Aerial Systems Testing in Colorado

### UAS Testing Facilities Help Keep Colorado's Skies Safe

For many people, Unmanned Aerial Systems (UAS) are quickly becoming part of everyday life. Thousands of people around the globe now rely on UAS to deliver packages, inspect infrastructure, take photos, and conduct atmospheric research. As UAS have become more common in recent years, the regulations governing them have changed significantly. The result of these new regulations is the requirement for rigorous testing of UAS and their operators to ensure accidents do not occur between Unmanned Aerial Vehicles (UAVs) and manned aircraft, people on the ground, or other UAVs. In Colorado, there are multiple facilities that support the testing of UAS and the training of UAS operators. Highlights of three of the many programs that are leading the way in UAS testing are provided below.

#### Test Pro Center/Aeon Unmanned Academy– Centennial Airport (APA)

Similar to traditional manned aircraft, UAVs are only as safe as their operators. Given this, it is critical for UAS operators and managers to have the appropriate skills and knowledge to safely operate UAS in busy airspace or over populated areas. The FAA's Small UAS Rule (Part 107) outlines the eligibility and requirements for certified remote pilots. Part 107 requires prospective UAS operators to pass a written knowledge exam at an FAA-approved testing site before flying a UAV for any purpose other than recreational. According to UAS Colorado, there are 13 active testing sites in Colorado as of Spring 2020.<sup>1</sup>

Testpro Center, located at APA, is the largest FAA testing center in the state. The company's facilities can accommodate up to 22 candidates at a time and provides proctoring for Part 107 written exams as well as other FAA certificate exams. Testpro Center has a partnership with Aeon Unmanned Academy to provide in-person training classes for people wishing to earn their remote pilot certificate. Aeon Unmanned offers two- and three-day courses to members of private corporations, public agencies, and private individuals pursuing their Part 107 certificate. The courses are based on the FAA Small UAS Rule and cover topics including aeronautical weather, airspace and navigation, airport operations, radio procedures, UAS regulations, aeronautical decision making, and crew management. Immediately after completing the training course, students go to the Testpro Center and take the exam. Aeon then receives feedback from the students about the nature of the exam so that the curriculum can be tailored to meet or exceed FAA requirements. Aeon Unmanned also offers one-day UAV flight instruction classes, allowing students to learn the fundamentals of flying UAVs. Aeon Unmanned and Testpro Center, along with all other Part 107 testing centers in Colorado, work hard to ensure that UAS operators in our state are safe and professional.



Photo Courtesy of Aeon Unmanned

<sup>1</sup> UAS Colorado (n.d) "Test Centers" Available online at <https://www.uascolorado.com/test-centers/> (accessed online March 2020)

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### UAS Colorado – San Luis Valley and Chaffee County Testing Areas

UAS Colorado is a non-profit business league that supports and promotes the safe integration of UAS into the aerospace industry. One of UAS Colorado's many roles is to work together with public agencies, private firms, and government entities to establish designated flight testing areas around the state.

Two such areas are located in Chaffee County near Buena Vista and in the San Luis Valley north of Alamosa. Opened in 2015, the testing areas represent the premier high altitude UAS testing facilities in the country and offer unique challenges and opportunities to UAS operators including mountainous terrain, high voltage powerlines, public infrastructure, and extensive agricultural land. The San Luis Valley testing area is managed by Alamosa County and encompasses 8,100 square miles of operational airspace up to 15,000 feet. Saguache Municipal (04V) and Center Airport (1V8) are approved for UAS operations, allowing medium-sized UAS above 55 pounds to take off and land like traditional aircraft. The Chaffee County testing area is managed by the county and has two authorization certificates, allowing UAS to fly in the Arkansas Valley outside a five-mile radius from Harriet Alexander Field (ANK) in Salida and Central Colorado Regional Airport (AEJ). Chaffee County is working with the Central Colorado UAS club to create education programs for UAS operators and the community in an effort to grow the UAS industry. These testing areas allow operators to prove their UAS in a safe environment away from manned aircraft and populated areas, so that when these UAS enter service, they are safe for their operators and the surrounding community.

### Colorado Northwest Community College - Rangely

Although UAS is quickly becoming common, the regulation, administration, and operation of such systems are foreign to most people, including traditional pilots. Therefore, it has become imperative that education programs be created to facilitate the safe integration of UAS operators into the industry. Colorado Northwest Community College (CNCC) is leading the way for UAS education in the state.

CNCC offers three courses related to the planning, regulatory, administrative operational processes and knowledge needed to safely operate UAS. The courses provide students with in-depth analysis of the technologies used in UAVs and ground control systems. Students learn about remote-split operations, line-of-sight operations, payloads, and operational limitations. The courses also cover UAS emergency procedures, particularly when the link between the UAV and ground system is lost. CNCC emphasized that the courses are not focused on teaching students how to fly drones, rather, they approach UAS as an industry and teach students the principles of UAS management. CNCC focuses on the commercial and government applications of UAS and the development of further UAS capabilities. CNCC has a FAA-certified Part 107 test center for prospective UAS operators at the school's campus in Rangely. The program is one of Colorado's premier programs for preparing students to become UAS operators and managers.



*Saguache Municipal Airport (04V), one of two airports approved for UAS operations. Photo courtesy of CDOT Aeronautics*

### Summary

Safety is paramount for all members of the aviation industry, particularly for the development of new technologies such as UAS. Fortunately for stakeholders and members of the public in Colorado, hundreds of aviation professionals are dedicated to ensuring that UAS are implemented in a safe and efficient manner. Several companies and organizations, including the ones presented above, are leading the way for the testing of UAS and their operators.