

Drone America:

# TRAINING TO SAVE LIVES With Pro-Grade UAS

By Zack Clark, Project Manager, Integration and Development, Drone America



**D**rone America, supported by the Nevada Institute of Autonomous Systems (NIAS), participated in a two-state, multi-agency fire evacuation drill on May 19 at the north end of Lake Tahoe on the Nevada-California border. The exercise involved more than 17 first responder agencies and advanced Drone America's mission not only to serve the community, but also to better serve those who serve us.

The bi-state evacuation drill was a collaboration between Drone America, the North Lake Tahoe Fire Protection District, Washoe County Emergency Management, Washoe County Sheriff's Office, Nevada Division of Forestry (NDF), Nevada Army National Guard, Nevada Highway Patrol, California Highway Patrol, North Tahoe Fire Protection District, CAL Fire, Placer County Emergency Management, Placer County Sheriff's Department, Red Cross and several other partnering agencies. It was the first time commercial drones conducted simultaneous operations with manned emergency aircraft in the same airspace during a real-time scenario with the common mission of saving lives and property.

The fire evacuation drill concerned the Kings Beach, CA, Incline Village, NV, and Crystal Bay neighborhoods, affecting approximately 1,100 residents. The residents were asked to voluntarily evacuate via a reverse dial 911 call.

Drone America's VTOL Savant flight team established a forward operating base, and at 12:15 p.m., incident command called for support on a severely injured firefighter in need of plasma, blood and medical supplies until air extraction could arrive. Coordinates for the remote hilltop location were received and verified. The Drone America flight team configured the required payload and launched the mission.

Taking off at a ground altitude of 6,236 feet and covering 4.5 miles, Drone America's VTOL Savant climbed 1,000 feet to 7,250 feet MSL (250 feet AGL) above the drop point. Successfully navigating around steep terrain, tall tree cover and other air traffic, it took six minutes and 45 seconds to air drop the critical care supplies to the waiting ground team.

While the VTOL Savant was returning to base, the Drone America flight team was

requested to provide real-time visual reconnaissance of the drop area and affected ground team. Incident command had concerns about the fire front advancing on the team during victim treatment.

When the UAS returned, the drop payload carriage was replaced with an ISR payload, and the aircraft readied for immediate return to scene. Within a 10-minute turnaround time, the VTOL Savant was launched and achieved the commanded ISR target altitude of 8,200 feet MSL (1,200 feet AGL) above the target area, transmitting live video during the flight.

During the ISR flight, a recovery Black Hawk helicopter was dispatched. The VTOL Savant arrived on scene first and transmitted geo-referenced live video of the affected firefighting team to multiple locations, including incident command and flight operations. Sharing the same airspace, the Black Hawk arrived after the Savant and operated between 700 and 1,050 feet below it.

The firefighter was airlifted to safety with the Drone America aircraft circling overhead, capturing the events as they unfolded. The team on the ground was advised of the



advancing fire in real time, and incident command maintained real-time situational awareness of the developments on the ground. The total mission time for both primary and secondary missions was one hour, 16 minutes. The total distance covered was 23.4 miles.

“Working side by side with emergency services integrating our unmanned systems into a real-world exercise gave us further insight into operational safety and effectiveness,” Drone America President and CEO Mike Richards said. “Saving lives in the form of data, video or critical supplies is our utmost priority, allowing us to better protect the lives of those that serve our community.”

The joint operation was the largest in Nevada to date and showed how UAS can enhance safety for the public, first responders and emergency management officials, according to Chris Walach, senior director of all FAA-designated Nevada UAS Test Sites and NIAS.

“Nevada companies like Drone America and their partnership with NIAS are setting the standards for full integration of drones into wildland firefighting, medical air delivery of critical supplies, and fire surveil-

lance, while ensuring drones are safely integrated into the National Airspace System,” Walach said.

Ryan Sommers, Fire Chief of the North Lake Tahoe Fire Protection District, said the district is in the process of becoming a response partner with Drone America. “The bi-state evacuation drill was a clear demonstration of how we can all work together, potentially saving lives and saving taxpayers dollars,” he said. “It is a pleasure working with Drone America, and we look forward to future endeavors.”

Drone America proudly works alongside the nation’s first responders, gaining valuable insight into a challenging world fraught with danger. The company’s experiences enable it to design, manufacture, integrate and fly missions providing critical data or supplies to those in need. Headquartered in Reno, the company was founded on the simple goal of using UAS technology to save lives. Since 2012, Drone America has been flying its medium and large scale systems for emergency responders, law enforcement, SAR, EMS, fire mapping/spotting/prevention and wildlife management.

NIAS manages the FAA-designated Nevada Unmanned Aviation Test Site and is leading the growth of UAS through business relationships and collaborations with primary educational institutions and first responders. Its efforts help enhance the Nevada UAS industry knowledge base to attract business and create jobs in the state. 

