



Case Study

Wildfire in California Threaten a City Safety and UAV Operations Save Lives and Land

Client:
California Department
of Forestry and Fire
Protection (CalFire)

Summary of Core Activities:

- Pioneered the integration of unmanned systems into firefighting
- Developed concepts of operations (CONOPS) to support CAL FIRE and the U.S. Forestry Service
- Introduced new technology and systems providing for the safety and effectiveness of firefighters

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In winter 2007, VT Group's Unmanned Systems, then Evergreen Unmanned Systems, coordinated with senior Federal Aviation Administration (FAA), U.S. Forest Service (USFS) and CalFire components to craft a UAV operation for the 2008 summer fire season. Understanding the complexities of the airspace and the very technical coordination requirements between multiple air assets and multiple ground assets in a fluid environment, we worked a solution. The goal of the operation was not operations itself, but rather to define a template and a process to integrate UAVs into a dynamic emergency environment and provide a concept of operation (CONOP) that could be applied to fire emergencies nationally.

A CONOP and a process was put in place to allow a "template COA" to be placed over an existing fire scalable to the TFR. Should another fire bloom in a different

location the "template COA" could be moved and placed over the more pressing location. This process and the ability to move a COA was the first of its kind and had not been done in the past. Additionally, our personnel became the first UAV operators to be "carded" by CalFire having demonstrated strict adherence to safety, training and performance standards.

After completing the process, Evergreen focused on other projects until summer 2008. Post a significant lightning storm that swept through the western states igniting hundreds of fires in California alone, we were called to assist. In less than 12 hours, Evergreen mobilized personnel and equipment to Sacramento to assist with the Moon Fire. We assisted CalFire and the FAA in completing and submitting the COA for the operation, but in the end, the process had not been refined to rapid movement of the COA. It still took two to three days to



reprocess and shift the COA to the next site and the FAA levied a requirement for a chase aircraft even within a TFR, which risked the manned aircraft to an unacceptable level.

The successes remain and helped guide the FAA to a process where COA's can now be enacted and altered in less than 24 hours for emergencies, often in less. We demonstrated our personnel and equipment can meet some of the most stringent safety and performance based standards in manned/unmanned flight activities; devised CONOPS, incorporating multiple ground and air assets operating in a very difficult environment; and demonstrated our ability to rapidly mobilize professional operators and top equipment even before many local emergency assets could mobilize themselves.