

UAS Aerial Ignition Update (10/9/19)

Background: In August, 2018, an aerial ignition (PSD) payload was developed for the DJI M600 multirotor UAS. After several operational test flights in the northwest and subsequent OAS approval of the payload, the interagency UAS community decided to invest in the technology and expand operational testing during the 2019 fire season. Interim approval for UAS aerial ignition testing was issued by NIAC in January of 2019.

In March of 2019, a UAS aerial ignition test course was developed and presented to 16 DOI (BLM, NPS, FWS) students in Grand Junction, CO. The student base consisted of interagency UAS personnel who possessed the NWCG UAS Pilot (UASP) qualification.

UAS Aerial Ignition Operations were conducted on 13 fires/prescribed fires in 8 states during the 2019 season. 264 flights for 83 hours were conducted. Feedback from incident/project managers was positive and drove multiple lessons learned and a path forward.

Lessons Learned

- The M600 UAS was equipped with the Ignis 1 PSD system and a Zenmuse XT2 thermal camera. The thermal camera allowed for line scouting and burning at night and in smoky conditions. The combination of recon and burning capability was effective during fireline operations.
- High winds and tall timber hamper UAS operations.
- Learning to interpret thermal video is an acquired/time consuming skill.
- The Ignis 1 system experienced mechanical (servo) malfunctions during period of heavy use. Feedback was provided to the manufacturer.
- The system performed well to conduct small scale ridge treatment, interior pocket cleanup, and increase depth.
- Approximately 500 acres can be treated/system/day given receptive fuels.

Challenges

- UAS is a collateral duty for most employees.
- Limited staff/time to to develop UAS aerial ignition program

Planned Path Forward

- Collaborate with agency/interagency partners and stakeholders to develop the program
- Ignis PSD manufacturer has updated the system based on feedback from the field. Ignis 2 has been approved and is in production.
- BLM, NPS, and FWS have ordered 20 Ignis 2 systems.
- An agency/NWCG UAS aerial ignition position is in development.
- Interagency operational policy is in development.
- Two UAS PSD workshops are planned for fy20 (Tallahassee and Grand Junction).

Additional Information

- [Ignis 2 Youtube Video](#)

- [BLM UAS Program Video](#)
- [Interagency Fire UAS Website](#)

FY19 UAS Aerial Ignition Locations

