Rapid Lesson Sharing

Event Type: UAS Rx Ignition Tool Flyaway

Date: May 4, 2023

Location: Nigh Creek Prescribed Fire
Superior National Forest
Minnesota

A UAS Ignition Tool 'Flies Away' During Prescribed Fire Operations

While igniting the Nigh Creek burn unit along the Echo Trail of the Superior National Forest, the unmanned aircraft system (UAS) (drone) that was being used as the primary ignition tool lost contact between the GPS and flight controller and a UAS "flyaway" occurred.

(According to the Federal Aviation Administration [FAA], when a UAS experiences a lost link with the control transmitter due to interference or flying out of range, it is called a "flyaway". While experiencing this flyaway, the UAS is incapable of following the controls provided by the pilot through the controller and acts unpredictably.)

Training with the drone with all zone fire personnel. This training was held two days before the flyaway incident

An Alta X drone was being utilized to help reduce exposure to firefighters working in rough terrain. The drone had completed multiple cycles of ignition. Two-thirds of the unit's interior had been lit while hand lighters worked on the perimeter.

The drone was lighting on the north one-third of the unit when the flyaway occurred. There were personnel working in the vicinity of the drone observing the effectiveness of the operations. As soon as communications with the drone were lost, a visual scan of the area was completed to try and locate the drone. After a few minutes it was determined that a fly off had occurred. A small ground search was initiated in areas that were safe to work in.

When the flyaway occurred on this prescribed fire, an Incident Within an Incident (IWI) was declared. Ignition operations were ceased and transitioned to holding operations as a plan was formulated to try to recover the UAS.

The drone was not recovered. A small search was implemented, but it was limited due to the rough terrain—the reason why the drone was being utilized for ignition. The search area was determined by the last known location and wind speed and direction. A larger area was searched by aerial resources. Nothing was ever found.

Lessons

- Always have a backup plan for how you are going to complete a prescribed fire, as you could lose your primary ignition tool at the most critical time.
- Have a contingency plan in mind for things other than fire or medical. This could include smoke impacts, member of the public wanders into your burn unit, or, as in this case, loss of critical equipment.

- Likewise, an Incident Within and Incident doesn't have to be a medical or something bad happening. It could simply be a disruption in the normal way of implementing a prescribed fire that is likely going to require a lot of someone's attention.
- Have access/be familiar with all parts of the burn plan, including its appendices, while in the field implementing the burn. (During a zone AAR after this incident, which included three other burns, some of the Burn Boss trainees mentioned not knowing where they may look for information on how to deal with this type of situation.)

What Went Well

- The UAS flyaway was identified early. Everyone involved in the prescribed fire followed the established plan—including IWI protocols and the direction in the Mission Aviation Safety Plan (MASP), which included notifying the Dispatch Center, Line Officers, and the Regional aviation personnel.
- The IWI process went very smoothly and was communicated well over the radio. Information moved quickly up through the chain of command and to Forest and Regional leadership.
- The severity of the situation was discussed among leadership and those involved in the prescribed fire. A rash decision was not made that could have put more people at risk.
- The UAS pilots were very professional and did a great job of completing the required tasks needed after a flyaway incident.
- Ensuring the needs of the employees who were involved in this very stressful incident are being addressed. A support network and extra resources were made available for those who may require such additional assistance.

Fire behavior created by the drone.

What We Could Do Better Next Time

- Clarify established direction on what to do in the event of a UAS accident and make it known. Make sure that this is covered in your "tailgate brief".
- Communicate with your Aviation Safety and Public Information Officer (PIO) to decide if it is appropriate to prepare a very simple public press release with the basic information about the UAS flyaway—before it gets out on social media and through other non-agency channels.

This RLS was submitted by:

Incident Overhead

Do you have a Rapid Lesson to share?
Click this button:

Share Your Lessons