



Introduction

Unmanned Aerial Vehicles (UAS), or drones, are one of the fastest growing hobbies in the world. For example, millions of people purchased UAS in December 2015, as they have become increasingly affordable to the general public.

Over the last three years, UAS, commonly known as drones, have become a big topic in wildland fire management. In 2016, there were more than 40 documented instances of people flying drones over wildfires without authorization, threatening the safety of firefighters. Though no collisions occurred, on several occasions, air operations were forced to land and cease suppression operations until the offending UAS could be located and removed. These incursions greatly endanger lives, cost taxpayers money and increase fire size while aircraft cannot work to suppress the fire.

While the importance of avoiding UAS incursions is evident to firefighters and fire managers, it does not occur to the general public. UAS owners typically want to acquire rare wildfire footage; therefore they fly UAS over or near wildfires, creating the aforementioned safety issues. In order to reach these millions of UAS operators, the BLM must conduct a broad, intensive education and outreach campaign.

Communication Goals

It is imperative that we reach a wide audience about the dangers of flying UAS around wildfires. Our goal is to educate the public about this issue and eventually eliminate UAS wildfire incursions.

We need to connect with our internal audiences as well, not only to relay the safety messages, but to stay informed on internal UAS projects. So far, BLM Aviation has conducted projects involving wildfires, prescribed fires, mapping, archeological surveys, wildlife habitat surveys, and more. Other agencies are also developing UAS programs.

Talking Points

While many people who fly UAS/drones are educated regarding where these devices can be flown, some have flown their devices into air space over or near wildfires.

In these instances, we believe that drone operators' intentions are not malicious; they simply are unaware of the danger associated with flying a drone near a wildfire.

Firefighting aircraft, including lead planes, helicopters, airtankers and smokejumper paracargo, fly as low as 150 feet above the ground, which is the same altitude that many drones fly.

If a drone were to collide with firefighting aircraft, a serious, even fatal, accident can occur.

If you fly a drone over a fire, air operations may be suspended until the risk of a mid-air collision with a drone is resolved.

When firefighting aircraft are grounded for any reason, fire crews lose access to a valuable resource that can adversely affect the safety and efficiency of the overall firefighting effort.

When firefighting aircraft must be grounded, wildfires can grow in size, which greatly hampers firefighting efforts, threatens lives, homes, property and natural resources.

Regardless of your motivation, flying a drone near a wildfire is putting someone else's life in danger.

UAV/UAS/Drone incursions into airspace around active wildfires are increasing.

- In 2014, 16 airspace conflicts were reported within the wildland fire community.
- During the 2015 fire season, at least 25 drone incursions on wildfires were reported.
- In 2016, at least 40 documented instances involving members of the public flying drones over wildfires without authorization. This caused aerial firefighting to be temporarily suspended on more than 20 occasions, hampering the effectiveness of wildfire suppression operations.
- Last summer in Utah, drone incursions occurred so frequently that the federal government dispatched a fire prevention team to conduct outreach.

These incursions create serious safety issues. For example, on August 9, 2015, approximately three miles SW of Calistoga, CA an airtanker narrowly avoided a drone that was flying over a wildfire. The pilot maneuvered the aircraft and missed the drone by only 50 feet. Had the pilot not been able to avoid the drone, it is very likely that the tanker would have crashed.

As of Dec. 21, 2015, the Federal Aviation Administration requires all owners of small unmanned aircraft, or drones, weighing between 0.55 and 55 pounds to register online *before* taking to the skies. Failure to register an aircraft may result in regulatory and criminal sanctions. The FAA may assess civil penalties up to \$27,500. Criminal penalties include fines of up to \$250,000 and/or imprisonment for up to three years.

BLM law enforcement can take action against a private citizen or commercial business flying drones illegally over a wildfire:

- The federal regulation that applies to drones interfering with a fire is 43 CFR 9212.1(f). This section of the Code of Federal Regulations outlines acts that are prohibited related to starting a wildfire, or interfering with the efforts of firefighters to extinguish a fire.
- The fine for violating this regulation (in some states) is \$500 and/or a Mandatory Appearance. The fine will vary by state.

- If the officer determines the violation is egregious or there are other factors the officer thinks a judge should consider related to the violation, the officer has the authority to issue a violation notice with a “mandatory appearance.” This type of citation requires the violator to appear in court to settle the issue in front of a judge.

What is recreational use of UAS?

The recreational use of UAS is the operation of an unmanned aircraft for personal interests and enjoyment. For example, using a UAS to take photographs for your own personal use would be considered recreational; using the same device to take photographs or videos for compensation or sale to another individual would be considered a commercial operation. You should check with the FAA for further determination as to what constitutes commercial or other non-hobby, non-recreational UAS operations.

What is a TFR?

Temporary flight restrictions, or TFRs, define special restrictions for the airspace during special events or hazardous situations. When a TFR is in place, there should be no air traffic – manned or unmanned – except for those supporting the operations. But TFRs do not just apply to wildfires. For stadium events ranging from concerts to NASCAR races to the Super Bowl, model aircraft flights and unmanned aircraft operations are generally restricted.

They often are put in place with short notice, so before taking your model aircraft or UAS out for a flight, it is important to check with the FAA to ensure that there are no TFRs in your area.

Why are TFRs placed over wildfires?

It is very important that wildfire operations are allowed to proceed unimpeded. Violating the TFR may endanger the safety of the operation, and in some cases may ground search and rescue crews until the airspace is cleared, allowing the wildfire to spread.

Model aircraft and UAS operators should obtain up-to-date information about TFRs from the FAA or flight service. Timely alerts are also available on the web or on your cell phone at: [Twitter.com/ama.gov](https://twitter.com/ama.gov).

For more information on UAS regulation, visit www.knowbeforeyoufly.org

Using UAS for BLM Operations

The BLM administers over 245 million surface acres of public land across the U.S. This includes vast expanses of remote landscapes with little or no road access. Unmanned aircraft systems (UAS) allows the BLM to obtain imagery and data with greater safety, significant cost savings and minimal disturbance to native species and visitors.

Safety is the BLM's foremost concern when flying UAS missions. Every mission is coordinated with the Department of Interior's (DOI) Office of Aviation Services (OAS), BLM Fire and Aviation, appropriate management and resource staff, local governments and the community.

We are committed to building positive relationships with the communities adjacent to BLM lands, and part of that effort involves transparency. On occasion, we invite stakeholders and the news media to observe UAS data collection missions.

BLM Fire and Aviation is the lead organization for UAS operations in the BLM. OAS is the lead agency at the department level and manages the actual fleet of UAS. The BLM's National Operations Center leads the project level work, including the science and technology aspects and managing collected data.

The BLM has decades of proven experience in the collection, use, control and retention of aerially collected data. The BLM employs the same storage and security policies for the data collected by unmanned aircraft flights as it does for manned aircraft supported missions.

The use of UAS allows the organization to utilize a cost-effective data acquisition platform that provides highly accurate and detailed data relevant to everyday business needs.

All data collected, with the exception of cultural site data or data otherwise sensitive in nature, are publicly available. The BLM is working with United States Geological Survey (USGS) to improve data management and distribution processes.

Thus far, the BLM has used UAS for resource management projects—which include missions like mapping, hazmat site assessments, vegetation surveys and wildlife habitat surveys. In the near term, the BLM plans to evaluate use of UAS to include fire suppression and prescribed fire missions; so far, BLM/DOI has completed several successful UAS wildfire and prescribed fire missions in partnership with other agencies.

1. UAS data collection for fire suppression eventually could include missions to monitor fire behavior in real-time, gather infrared imagery for fire perimeter mapping, assess inaccessible areas ahead of fires, and increase firefighter situational awareness. UAS aerial assessment of burned areas is also a potential use for UAS.
2. The BLM works closely with the US Geological Survey UAS Project Office on all missions. We also partner with other agencies and have flown projects for the National Park Service, Fish and Wildlife Service, USGS and the Office of Surface Mining.
3. DOI UAS are on loan from the Department of Defense and the Department of Commerce. The BLM only operates small UAS (defined as weighing less than 55 pounds).
4. As of Dec. 21, 2015, the Federal Aviation Administration requires all owners of small unmanned aircraft, or drones, weighing between 0.55 and 55 pounds to register online

before taking to the skies.

5. Like other federal agencies, the BLM is committed to ensuring that use of UAS remains consistent with Federal law, policies and other applicable regulations which protect the privacy, civil rights and civil liberties enjoyed by Americans. Further, the BLM is taking steps to improve our current policies for safeguarding personally identifiable information from UAS-related compromise. These actions comply with a Presidential memorandum addressing the domestic use of UAS in light of privacy, civil rights and civil liberty concerns (dated February 15, 2015).

Partners

Reaching such a broad, nation-wide audience can be a daunting task, so it's important that BLM partner with other agencies and organizations who can reach UAS users.

- The Federal Aviation Administration (FAA)
The FAA began its [Know Before You Fly](#) campaign in 2014 with a website and other materials. The site has been well-received, plus, FAA has partnered with private organizations to reach UAS audiences.
- The U.S. Forest Service (USFS)
The USFS has been an active participant in UAS education for the last few years. They have developed a webpage, poster, and PSA, all centered around their *If You Fly, We Can't* campaign.
- The Association for Unmanned Vehicle Systems International (AUVSI) is a large group that reaches thousands of UAS users. AUVSI holds the largest UAS conference in the country every year, where UAS users, manufacturers, distributors, and other UAS-related companies gather.
- The Academy of Model Aeronautics (AMA)
AMA is another large organization that has over 100,000 members comprised of model aircraft hobbyists. They are largely active with AUVSI and the Know Before You Fly campaign.

Communication Tactics

Tactic	Responsible Party	Notes
Add wildfire tips and info. to the Know Before You Fly website	Gardetto	Complete
Work with the USFS to If You Fly, We Can't poster	Gardetto	Complete; posters printed
Distribute posters to each state	Gardetto	Complete; posters went to every EA group/Chief
Create PSA	Gardetto, Smith	Complete
Create BLM UAS webpage	Gardetto, Smith	Complete, PSA posted on webpage as well

Work with AMA to distribute posters to hobby stores	Gardetto	Complete
Work with AMA and DJI to insert avoiding wildfire tips in UAS packaging	Gardetto	In progress
Partner with FAA, USFS, other agencies, AMA for media event or press conference	Gardetto	In progress
Social media campaign, posts about UAS and wildfires	Gardetto, Smith	In progress
Create graphics	Ascherfeld	Complete
Create web banners	Ascherfeld	Complete
Digital media campaign focused on UAS users	Gardetto	Complete: campaign ran 6/2015-11/2015.

Future Outreach and Education Ideas

- 1) Distribute PSA, posters, communications plan and talking points to Incident Management Team PIOs. PIOs would use the materials during incidents, particularly if they experience a UAS incursion on their assigned incident.
- 2) Work with FAA, Know Before You Fly, AMA, DJI, other companies to develop tail rotor stickers or other sticker options with tips or a phrase about avoiding wildfires.
- 3) Explore options for the Know Before You Fly app currently being developed by the FAA.

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