

As drone sales soar, vast majority of reports remain simple sightings

Reported UAS sightings include people following proper guidelines and frequently uses "drones" as catch-all for objects in the sky.

Executive Summary

On February 23, 2017, the Federal Aviation Administration (FAA) released a new list of 1,270 "drone sightings" covering the period February 1, 2016 through September 30, 2016 ("February 2017 data" covered 8 months). This new data follows the release of 582 records in March 2016, covering the period from August 21, 2015 through January 31, 2016 ("March 2016 data" covered 5 months) and 764 records in August 2015 covering the period from November 13, 2014 through August 20, 2015 ("August 2015 data" covered 9 months).

In the press release announcing the data, the FAA specifically states that no collision between civilian aircraft and a civilian drone operator has been confirmed. In fact, the FAA writes, "[e]very investigation has found that reported collisions were either birds, impact with other items such as wires and posts, or structural failure not related to colliding with an unmanned aircraft."¹ AMA's analysis of the February 2017 data confirms that the vast majority of reports are simply sightings of UAS sharing the airspace. Reported near misses and close calls remain very small – just 3.4%.

In this release, we are encouraged to see that the FAA continues to more accurately characterize U.S. drone activity. In addition, we are glad the agency included a high-level summary of investigative findings, something the Academy of Model Aeronautics (AMA) has called for in the past.

While the overall number of reports increased in the February 2017 data, this dataset included a longer time period and these sightings occurred within the context of a dramatic uptick in the number of people flying UAS. In late March 2017, the FAA announced that more than 770,000 drone operators² have registered their drones with the FAA since the registration rule went into effect in December 2015. The total number of sightings the FAA has reported – 2,616 since August 2015 – only accounts for 0.34% of the total number of registered operators.

To further understand what is happening in our skies, once again AMA took a deep dive into the data, reviewing each line item one-by-one. Some of the findings include:

- Consistent with what AMA found in the August 2015 and March 2016 data sets, some sightings included in the dataset appear to involve people flying responsibly and in accordance with UAS guidelines. In the February 2017 data, AMA specifically identified 86 reports of drones flying at or below 400 feet.

¹ <https://www.faa.gov/news/updates/?newsId=87565>

² <https://www.recode.net/2017/3/27/15077998/us-drone-owners-registered-fly-15-months>

- Like the previous data sets, the February 2017 data contains reports of several objects other than drones, including balloons, birds, a parasail, a “blob” and a “silver box.” The term drone continues to be used as a “catch all” for any object spotted in the sky.
- While the FAA has expressed its intent to punish careless and reckless operators, law enforcement notifications continue to decline. In the August 2015 data, nearly 20% of reports were not referred to local law enforcement or law enforcement notification was unknown. To compare, in the March 2016 data that number was 29%, and in the February 2017 data that number is 30%.
- The data includes 13 sightings that occurred in areas near wildfires or wildfire-related Temporary Flight Restrictions (TFRs). This is an increase from the previous two datasets in which only 4 of such sightings were reported.

Additionally, 139 sightings occurred after the implementation of Part 107 (or the “Small UAS Rule”) rules for commercial operations and hobbyists flying outside the safety guidelines of a community-based organization. It is worth noting that the FAA’s data does not provide any clarity as to whether the sightings in this timeframe are commercial in nature, nor is there a special category for commercial drone operations.

Percentage of Near Misses/Close Calls Remain Low

In AMA’s previous analysis, AMA found that 3.5% (August 2015) and 3.3% (March 2016) of sightings included the explicit notation of “NMAC” (near mid-air collision) or “near miss.” Our analysis of the newest 1,270 records released in February 2017 show about the same percentage of near misses in the new data. Just 3.4% of sightings in the February 2017 data contain a specific notation indicating a near miss.

	August 2015 Data	March 2016 Data	February 2017 Data
Number of Total Sightings	764	582	1270
Number of Near Misses or Close Calls	27	19	44
Percent of Dataset	3.5%	3.3%	3.4%

In addition, in AMA’s analysis of the August 2015 and March 2016 data sets, evasive actions comprised 1.3% and 2.4% of reports. In the February 2017 data pilots took evasive action in 27 instances, or 2.9% of the reports.

Missing from the FAA’s data are the full investigative findings in the cases where a NMAC was reported or evasive action was taken. The FAA does acknowledge that it has “not

verified any collision between civil aircraft and a civil drone."³ AMA has previously called on the FAA to release not just its preliminary reports, but also all investigative findings so that the UAS community can assess the true extent of any safety issues, and identify what could be done to address them. However, based on the data available to the public, it is clear that most UAS reports are "sightings" and not near misses, close calls or close encounters.

Some drone sightings may be of people following proper guidelines

In AMA's previous analysis of the August 2015 and March 2016 data, we found dozens of reports that describe sightings that could have been operators flying under the proper guidelines. In the February 2017 data, 6.4% of the reports (or 86 sightings) took place at or below 400 feet, which is comparable to the 6.5% in the March 2016 data and 12% in the August 2015 data.

While some of these sightings occur within five miles of airports, the records often do not include information on whether the operator provided prior notification to air traffic control or the airport manager. Without the final investigative findings, we are unable to say conclusively that these flights were proper. This underscores the need for more information.

A sampling of the actual reports is reproduced below.

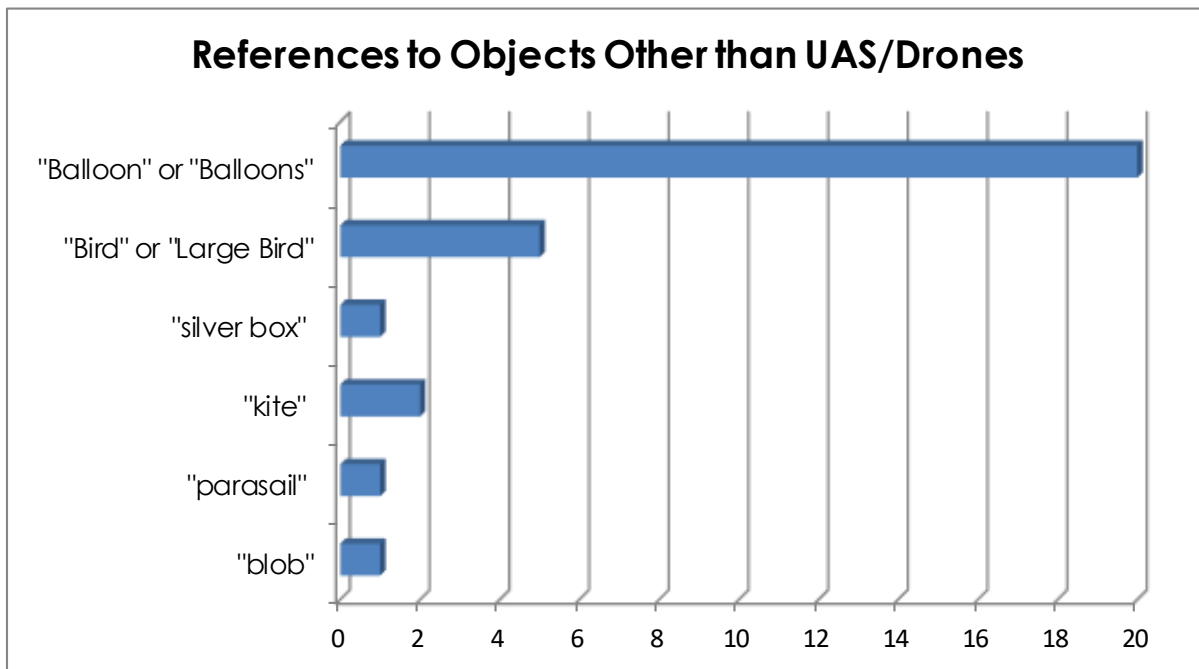
<p>February 7, 2016</p>	<p>PRELIM INFO FROM FAA OPS: LAX/UAS INCIDENT/1727P/LAX ATCT ADVISED PD HELO, AEROSPATIALE AS50, 3 MILES EAST LAX, REPORTED UAS BELOW THEM AT APPROX 300 FEET, DIRECTION UNKN, 3 FEET IN SIZE, COLOR WHITE, NO EVASIVE ACTION REPORTED. PD18 IS INVESTIGATING. Summary: UAS ACTIVITY: AS35, 3 MILES EAST LAX, REPORTED DRONE BELOW THEM AT APPROX 300FT, DIRECTION UKN, 3 FEET IN SIZE, COLOR WHITE, NO EVASIVE ACTION REQUIRED, ACN.</p>
<p>April 5, 2016</p>	<p>PRELIM INFO FROM FAA OPS: SHERMAN OAKS, CA/UAS INCIDENT/1700P/VAN NUYS ATCT REPORTED NEWS HELICOPTER AEROSPATIALE AS32, ENCOUNTERED A WHITE UAS AT 200 FEET 4.5 SE OF VAN NUYS ARPT VCNTY OF THE FASHION SQUARE MALL. UNKN IF EVASIVE ACTION TAKEN OR IF LEOS NOTIFIED. Summary: 4.5 SE of VNY airport 200' agl. white drone reported by TV helicopter on station by the Fashion Square.</p>
<p>May 14, 2016</p>	<p>PRELIM INFO FROM FAA OPS: CHANDLER, AZ/UAS INCIDENT/1137P/CHANDLER ATCT REPORTED AN UNIDENTIFIED BLACK QUAD COPTER WITH ATTACHED CAMERA OPERATING BETWEEN 6 AND 40 FEET ABOVE GROUND LEVEL. NO EVASIVE ACTION TAKEN. CHANDLER PD NOTIFIED. Summary: UNAUTHORIZED UAS OPERATION APPROXIMATELY FOUR (4) MILES NORTHEAST OF CHD. UAS (BLACK QUAD COPTER WITH ATTACHED CAMERA) ESTIMATED TO BE OPERATING BETWEEN SIX (6) AND FORTY (40) FEET AGL.</p>
<p>September 29, 2016</p>	<p>PRELIM INFO FROM FAA OPS: SAN JOSE, CA/UAS INCIDENT/2052P/REID-HILLVIEW ATCT REPORTED CESSNA C172, OBSERVED A UAS AT 200 FEET OVER MALL PARKING LOT. EVASIVE ACTION NOT REPORTED. NO LEOS NOTIFIED.</p>

³ <https://www.faa.gov/news/updates/?newsId=87565>

Summary: WHILE IN THE RUN-UP AREA FOR 31R, REPORTED SEEING A DRONE AT ROUGHLY 200 FEET OVER THE PARKING LOT OF EAST RIDGE M ALL.

Is it a drone or a balloon? Other objects reported

AMA's previous analysis has highlighted some interesting references to objects other than drones reported in the data. Those instances include a UFO, a mini-blimp, a model rocket and an object that "resembled a dog" in the August 2015 data and even a "jet pack" in the March 2016 data. The same type of sightings were reported in the February 2017 data, including 31 references to something other than a drone, 20 of which were specifically described as balloons.



SOURCE: FAA's February 2017 Dataset of UAS Sightings

A sampling of the actual reports is reproduced below.

April 21, 2016

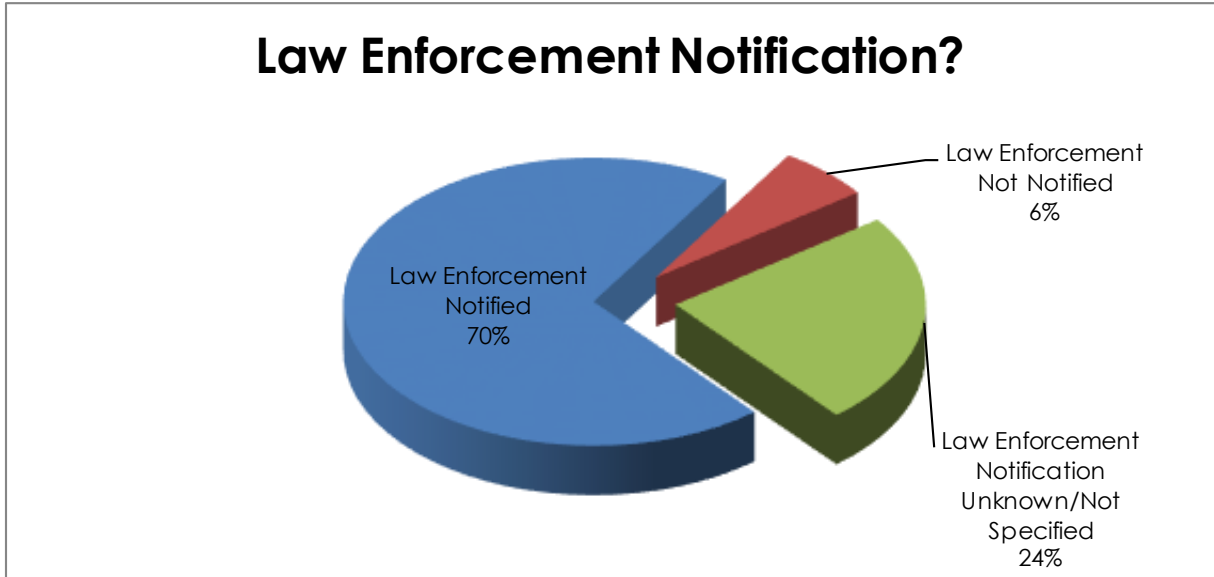
PRELIM INFO FROM FAA OPS: MONTGOMERYFIELD ARPT, SAN DIEGO, CA/UAS INCIDENT/1713P/PIPER PA44, REPORTED SEEING A LARGE METALLIC GREY MYLAR BALLOON DESCRIBED AS APPROX. 3 FEET ACROSS AND 2 FEET IN HEIGHT OVER MONTGOMERYFIELD ARPT AT 3,500 FEET. NO EVASIVE ACTION TAKEN. UNKN IF LEOS WERE NOTIFIED.

Summary: Pilot reported a drone or large mylar balloon overhead the airport at approx. 3500 MSL. The pilot described it as round, a balloon in the center with things hanging off of it, unsure but possibly numbers like from a birthday balloon. There was a main body with protrusions, light or metallic grey in color. The size was approx. 3 ft across and 2 ft in height. The pax reported watching a departure from SAN and then this attracted his attention. No evasive action required. They reported going into slow flight to try and see it again with no success.

May 1, 2016	PRELIM INFO FROM FAA OPS: SACRAMENTO, CA/UAS INCIDENT/1515P/NORTHERN CAL TRACON REPORTED VFR CESSNA C177, REPORTED A KITE OR UAS PASSED BY AIRCRAFT AT 3,500 FEET 1 N SACRAMENTO AIRPORT. NO EVASIVE ACTION TAKEN. SACRAMENTO COUNTY SHERIFF NOTIFIED.
	Summary: ACFT VFR, at 3500 feet reported either a kite or drone passed him. The PIC advised it passed him very quickly, it is unknown if it was a rotorcraft or fixed wing. Latitude/Longs are 383908/1213149. SMFTower advised.
September 19, 2016	Summary: PILOT REPORTED AN OBJECT RESEMBLING A PARASAIL PASSED ABOUT 20 FEET BELOW HIM, PILOT WAS STARTLED BUT MADE NO EVASIVE MANEUVER. IT HAPPENED VERY QUICK AND PILOT DID NOT HAVE A GOOD DESCRIPTION AND COULD NOT LOCATE THE OBJECT AFTERWARDS.

Sightings continue to go unreported to law enforcement

In AMA's analysis of the first 764 UAS sightings from August 2015, we found almost 20% of the reports (142 in total) either were not referred to local law enforcement or law enforcement notification was unknown. This trend continued with the March 2016 data, where nearly 29% of reports (169 reports in total) either were not referred to law enforcement or law enforcement notification was unknown or unspecified. Likewise, in the February 2017 data, 30% of sightings were not referred to law enforcement or law enforcement notification is unknown or not specified.



SOURCE: FAA's March 2016 Dataset of 582 UAS Sightings

As AMA has noted in both previous reports, although not every report or sighting is a serious safety risk – and may not even be someone behaving irresponsibly – the only way to identify the truly careless and reckless operators and learn all the facts is better communication and coordination with local law enforcement. FAA's past public statements about working closely with local law enforcement to identify and investigate reports of unauthorized operations also speaks to the importance of this relationship.

Sightings sometimes involve wildfires and other emergency situations

The February 2017 data includes 13 sightings during wildfires or wildfire-related Temporary Flight Restrictions (TFRs). In the August 2015 data, there was 1 sighting (less than 0.2% of total reports), and in the March 2016 data, there were 3 sightings (less than 0.4% of total reports) in similar circumstances. Flying UAS around wildfires or other emergency situations makes it harder for first responders to protect communities in danger. These sightings can halt emergency responder activity in the area and could result in fines for the operator.

To keep our communities, firefighters and airspace safe, everyone flying drones should stay away from these dangerous situations. To that end, AMA has supported several education campaigns to combat this issue. For example, the U.S. Forest Service has an initiative— "[If you fly, we can't](#)" – focused on educating flyers and newcomers to the hobby about the hazards drone flying poses during wildfire operations.⁴ In conjunction with that campaign, AMA has distributed thousands of flyers on this initiative across the western U.S. to remind the public to stay away from fires.

AMA also works closely with the FAA and the UAS industry on the [Know Before You Fly](#) campaign to increase education by providing basic safety information right in the packaging of new drones or model aircraft.⁵

Despite these ongoing educational efforts, sometimes uninformed or rogue flyers still show up in places where they shouldn't. AMA firmly believes that careless and reckless flyers that willfully hinder public safety and firefighting efforts should be held accountable to the fullest extent of the law.

Conclusion

The analysis of the FAA's February 2017 data on UAS sightings bears close resemblance to the trends previously identified in the August 2015 and March 2016 data. In all data sets, the overwhelming majority of reports are simply sightings, the data continues to contain reports on many objects that aren't drones and a significant number of reports aren't referred to law enforcement or law enforcement notification is unknown.

AMA is pleased to see that the FAA continues to more accurately characterize the drone data as "sightings" and "reports" rather than the more inflammatory terminology of the first data release in August 2015.

However, more can be done to better understand the nature, scope and impact of these reports. Some of our previous recommendations could provide some of that insight. These recommendations include:

⁴ <https://www.fs.fed.us/science-technology/fire/unmanned-aircraft-systems>

⁵ <http://knowbeforeyoufly.org/>

- The FAA should analyze the drone data prior to releasing it to the public, in order to more accurately portray what is happening in our shared airspace. Additionally, these sightings should be better categorized in a manner that highlights the most serious safety risks, so that all stakeholders can work together to address them.
- The FAA should release not just preliminary reports, but also investigative findings to enhance the public's understanding of these sightings. In the past, the release of the preliminary reports led to speculation, misinterpretations and mischaracterizations of the reported sightings, in turn increasing fear of UAS. Once investigated, the reports may turn out to be accurate or they may not, but stakeholders and the public deserve to have all the information available to them.
- In the past, the FAA has made strong statements about working closely with local law enforcement to identify and investigate reports of unauthorized operations. This is key to identifying careless and reckless operators, yet too many sightings go unreported to local law enforcement. Better communication and coordination with local law enforcement can ensure that sightings are properly investigated.

And it cannot be said enough: education has a vital role in keeping our shared airspace safe. AMA takes its role in this area very seriously, as a founding member of "Know Before You Fly" (www.knowbeforeyoufly.org), a campaign created in 2014 to educate newcomers to model aviation and drone technology about where they should and shouldn't fly.

Through greater understanding of the data and continued education efforts, we can keep our skies safe for all who fly.

About AMA

The Academy of Model Aeronautics (AMA) is the premier community-based organization in the United States for model aviation enthusiasts. Founded in 1936, AMA is dedicated to promoting and preserving the fun and educational hobby of flying model aircraft. The Academy serves as the nation's collective voice for approximately 200,000 modelers in 2,400 clubs in the United States and Puerto Rico. AMA provides leadership, organization, competition, protection, representation, education and scientific/technical development to the model aviation community.