

# EVERYTHING YOU WANT NEED TO KNOW ABOUT DRONES IN TWO MINUTES OR LESS

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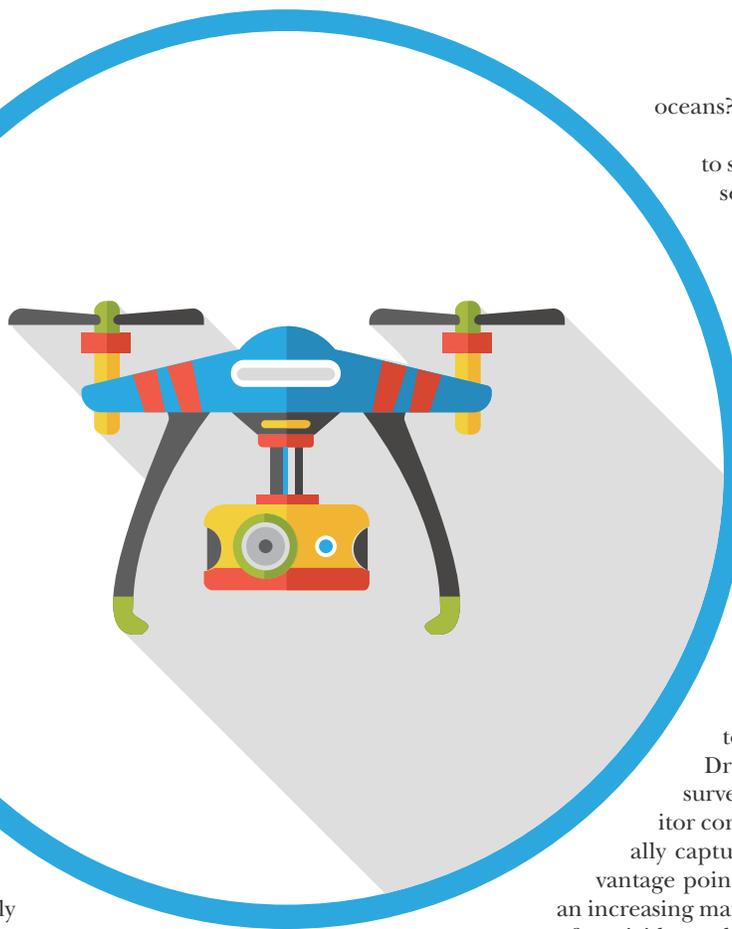
To begin with, a brief discussion of the terminology is appropriate. Regulators refer to Unmanned Aircraft Systems (UAS) as “all of the associated support equipment, control station, data links, telemetry, communications and navigation equipment, etc., necessary to operate unmanned aircraft.” That’s FAA-speak for the ground-based operator, the control device and the aircraft. However, the term “drone” has gained universal acceptance; so, let’s talk about drones.

## FACT ONE. DRONES HAVE BEEN AROUND FOR A LONG TIME.

The media is all a-twitter with the *new* phenomena of drones. However, if you have ever flown on a commercial aircraft, you have probably landed by computer control without any human pilot control input. In fact, the first such “automatic landing” occurred in the mid-1960s (*Flight International*, 30 October 1969, pp. 670-672). While we may still be decades away from airline flights without a flight crew on board, this delay is due to societal acceptance rather than technological capability. The technology exists. Today.

## FACT TWO. DRONES CAN DO GREAT GOOD.

In 2015, Google acquired a little company from Albuquerque called Titan Aerospace. The Titan Solara has a 164-foot



wingspan (longer than a Boeing 767) composed entirely of solar cells. It operates at 65,000 feet – above all civilian and military traffic, and most weather. Thus, it has continual access to solar power and could in concept fly for years without landing, acting as a low-cost atmospheric satellite.

Most are familiar with Amazon’s efforts to develop an unmanned package delivery system and Google’s driverless cars. But did you know there are several ventures working on the development of unmanned cargo aircraft capable of traversing the

oceans?

Drones offer the ability to send and use cameras, sensors and materials into areas neither safe nor practical for human-occupied vehicles (think: construction managers surveying the outside of a skyscraper after the glazers have finished; a researcher inspecting the inside of a volcanic cone; first responders trying to locate survivors in wooded areas during a flood).

There are many other activities that are simply easier and cheaper to accomplish with a drone.

Drones are already used to survey large areas of land, monitor construction sites, and generally capture images from a unique vantage point. Drones are also making an increasing mark in the aerial application of pesticides and fertilizer in agriculture.

## FACT THREE. DRONES CAN DO GREAT MISCHIEF.

The whimsical phrase “fly-away” describes the serious situation that occurs when a drone operator loses connection with his device. Common causes include loss of power (battery life is relatively short), loss of electronic communication, or just bad piloting. Technology can address many of these issues – loss of electronic communication could be met with a “return to base” program where the vehicle automatically returns to the site of launch; depleting

batteries can either trigger a return to base or a landing prior to complete loss of power.

Drone incidents are a daily occurrence. This winter, a drone crashed into the snow within a few feet of a racing skier. During the holiday bowl games, a drone crashed into the stands. In both instances, fortunately, no one was injured.

The potential for disaster from the unintentional misuse of a drone is enormous. Intentional misuse is even more troubling.

#### FACT FOUR. THE GOVERNMENT IS PLAYING CATCHUP.

According to the Bureau of Transportation Statistics, there were 6,700 commercial aircraft and 199,000 general aviation aircraft registered in the United States in 2014.<sup>1</sup> Yet, the FAA projected more than one million drones to be sold for Christmas this year alone. One holiday season quadrupled the entire U.S. fleet of aircraft. The regulatory task is enormous!

In 2013, the FAA released its roadmap to integrate UAS into the National Airspace System which targeted safe integration by September 20, 2015. That goal has not been met, but progress has been made:

- **Hobby Use:** The FAA issued an Advisory Circular (AC) addressing limits on recreational use.<sup>2</sup> It limits weight to 55 pounds, distance to line of sight only, and altitude maximum of 500 feet. These rules, however, do not apply to any commercial application.
- **Small UAS:** Next, the FAA issued proposed rules for Small UAS. These rules include significantly more stringent requirements as the operators are considered “pilots.” As such, they must obtain a UAS operator certificate, pass an aeronautical knowledge test every 24 months and be cleared by the TSA.<sup>3</sup> Unfortunately, these rules will not become final until late 2016 or early 2017.
- **333 Exemption:** In the interim, the FAA has been offering exemptions allowing the use of drones in commercial activities. The exemption will establish the parameters of allowable operation (speed, weight, altitude, purpose, etc.). Most notably, you must hold current FAA pilot and medical certificates in addition to other require-

ments.<sup>4</sup> This exemption is clearly not for the hobbyist. As of the writing of this article, the FAA has issued 3,129 waivers. The predominant uses relate to photography, inspection (of buildings, pipelines, towers, roofs, etc.), construction, news gathering, and marketing.

- **UAS Registration:** As of December 21, 2015, the operator of any drone weighing more than half a pound must register with the FAA. This includes all hobbyists and children down to the age of 13. The process is quick and easy at <http://www.faa.gov/uas/registration/>.
- **B4Ufly:** On January 6, 2016, the FAA released an app that advises the operator when it is geographically safe to operate a drone. <http://www.faa.gov/uas/b4ufly/>. Many manufacturers have built in software that will not allow the drone to operate if it is located too close to an airport.

#### FACT FIVE: THE INSURANCE INDUSTRY IS MAKING AN EDUCATED GUESS.

An underwriter roundtable at a recent Aviation Insurance Association seminar expressed unanimous desire to capture a slice of the new and potentially profitable industry. However, they warned there is zero data from which to effectively calculate premium value. That uncertainty is likely to lead to premium volatility in coming years.

New “unmanned aircraft” exclusions became available to curtail the debate as to whether a drone fell under the traditional aviation exclusion. Make sure that your agent or broker is sufficiently familiar with the quickly changing coverages.

#### FACT SIX: LET THERE BE LIABILITY.

Where regulations arise, enforcement is soon to follow. The first shoe to drop on this issue came in the form of a \$1.9 million civil penalty action against a Chicago-based aerial photographer. The operator has a §333 Exemption, but allegedly violated the altitude and proximity restrictions on dozens of occasions. A senior FAA administrator recently commented to me that there is “significant money” to be collected through civil penalties. Personally, I believe the FAA has decided to use the civil penalty provisions to help manage this vast new cat-

egory of aviation regulation.

Every one of those 3,129 exemption holders and the hundreds of thousands of new registered operators are subject to the full weight of the FAA’s enforcement structure. The Administrative procedure holds many traps for the uninformed. This is *not* civil litigation. I urge you to have your clients consult with your aviation department prior to responding to the FAA.

In addition to regulatory enforcement, there is immense civil exposure. A quick search of YouTube’s “drone fail” archives, while momentarily humorous, demonstrate the endless ways one can hurt people and break things misusing a drone. There have been several deaths caused by collisions with propellers of larger drones, and serious injuries from distracted operators focusing on their airborne drone rather than a cliff, building edge or hole.

Vicarious liability may well apply if the drone is operated for company business. However, a growing number of claims have arisen from a company’s failure to secure the drone. Construction managers: lock it with other tools and equipment (your favorite supervisor cannot take it home for the weekend to film his cousin’s wedding). These items must be secured.

Finally, privacy laws will be re-written in the coming years as the “expectation of privacy” is transformed by the omnipresent drone. In the interim, do not shoot down that drone – the government considers it to be an aircraft. You may go to jail.

Imagine trying to address e-security issues when the Internet was brand new and no one knew understood what the “information super-highway” was. Drone technology is changing daily. The FAA is treading the regulatory waters and fighting for jurisdictional turf from the states. The insurers and the courts are improvising. As John Connor of Terminator fame said: “It was never our destiny to stop Judgment Day, it was merely to survive it ... together.”



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<sup>1</sup> “Table 11-1: Number of U.S. Aircraft, Vehicles, Vessels and Other Conveyances,” United States Department of Transportation Office of the Assistant Secretary for Research and Technology, Bureau of Transportation Statistics, available at [http://www.rita.dot.gov/bts/sites/rita.dot.gov/files/publications/national\\_transportation\\_statistics/html/table\\_01\\_11.html](http://www.rita.dot.gov/bts/sites/rita.dot.gov/files/publications/national_transportation_statistics/html/table_01_11.html), retrieved January 22, 2016.

<sup>2</sup> FAA Advisory Circular 91-57A, Sept 2, 2015.

<sup>3</sup> Operation and Certification of Small Unmanned Aircraft Systems, N.P.R.M., 80 Fed. Reg. 78593 (proposed Feb. 15, 2015) (to be codified at 14 C.F.R. Parts 21, 43, 45, 47, 61, 91, 101, 107 and 183).

<sup>4</sup> FAA Modernization and Reform Act of 2012, H. R. 658, 112th Cong., § 333 (enacted).