

IT DIDN'T START WITH AMAZON
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Victor Lasky, author of *"It Didn't Start With Watergate"*, was a conservative columnist in the United States who wrote several best-selling books.

Lasky's most controversial book was *"It Didn't Start With Watergate"* published in 1977. The author argued that the scandal that drove Richard Nixon from office was little more than a media event. He believed that the press disliked Nixon and subjected him to unfair scrutiny no other president had ever experienced. Lasky also claimed that Franklin D. Roosevelt had used wiretaps on political opponents as well as John F. Kennedy and Lyndon B. Johnson.

Lasky professed the greatest political "crime of the century" was not Watergate but what he describes as the "theft" of the 1960 Presidential election.

It also didn't start with Amazon, the on-line retail giant which has informed the world that they are developing the technology to use drones to deliver packages in 30 minutes or less, a broad expansion of unmanned flight that is raising concerns about safety, security and privacy.

In reality the drone concept is really nothing new. You probably remember the remote control model airplanes of the 50's and 60's. An **Unmanned Aerial Vehicle** (UAV) is a type of aircraft which has no onboard crew or passengers. UAVs include both autonomous drones and remotely piloted vehicles (RPVs). A UAV is capable of controlled, sustained level flight and is powered by a jet, reciprocating, or electric engine. In the 21st century, technology reached a point of sophistication that the UAV is now being given a greatly expanded role in many areas of aviation.

The earliest recorded use of an unmanned aerial vehicle for warfighting occurred on August 22, 1849, when the Austrians attacked the Italian city of Venice with unmanned balloons loaded with explosives. Although some of the balloons worked, others were caught in a change of wind and blown back over Austrian lines. In a favorable wind the balloons will be launched and directed as near to Venice as possible, and on their being brought to vertical positions over the town, they were fired by electro magnetism by means of a long isolated copper wire with a large galvanic battery placed on a building. The bomb falls perpendicularly, and explodes on reaching the ground. Although balloons do not generally meet today's definition of a UAV, the concept was strong enough that once winged aircraft had been invented, the effort to fly them unmanned for military purposes was not far behind.

The first pilotless aircraft were built during and shortly after World War I. Leading the way, using A. M. Low's radio control techniques, was the *Ruston Proctor Aerial Target* of 1916. If developed further it was to have been used against Zeppelins. A **Zeppelin** was a type of rigid airship named after the German Count Ferdinand von Zeppelin who pioneered rigid airship development at the beginning of the 20th century. Soon after, on September 12, the Hewitt-Sperry Automatic Airplane, otherwise known as the "flying bomb" made its first flight, demonstrating the concept of an unmanned aircraft. They were intended for use as "aerial torpedoes" an early version of today's cruise missiles. Control was achieved using gyroscopes developed by Elmer Sperry of the Sperry Gyroscope Company.

Later, in November 1917, the Automatic Airplane was flown for representatives of the U.S. Army. This led to the army commissioning a project to build an "aerial torpedo", resulting in the Kettering Bug which first flew in 1918. While the Bug's revolutionary technology was

successful, it was not in time to fight in the war, which ended before it could be fully developed and deployed.

After World War I, three Standard E-1s, an early American Army fighter aircraft tested in 1917, were converted as drones. The early successes of pilotless aircraft led to the development of radio controlled pilotless target aircraft in Britain and the U.S. in the 1930s. In 1931, the British developed the Fairey Queen radio-controlled target from the Fairey III F floatplane, building a small batch of three, and in 1935 followed up this experiment by producing larger numbers of another RC target, the "DH.82B Queen Bee", derived from the De Havilland Tiger Moth biplane trainer. The name of "Queen Bee" is said to have led to the use of the term "drone" for pilotless aircraft, particularly when they are radio-controlled. During this period, the U.S. Navy, continuing work that reached back to 1917, was also experimenting with radio-controlled aircraft. In 1936, the head of this research group used the term "drone" to describe radio-controlled aerial targets.

The first large-scale production, purpose-built drone was the product of Reginald Denny. He served with the British Royal Flying Corps during World War I, and after the war, in 1919, immigrated to the United States to seek his fortunes in Hollywood as an actor. Denny had made a name for himself as an actor, and between acting jobs, he pursued his interest in radio control model aircraft in the 1930s. He and his business partners formed "Reginald Denny Industries" and opened a model plane shop in 1934 on Hollywood Boulevard known as "Reginald Denny Hobby Shops".

The shop evolved into the "Radioplane Company". Denny believed that low-cost RC aircraft would be very useful for training anti-aircraft gunners, and in 1935 he demonstrated a prototype target drone, the RP-1, to the U.S. Army. Denny then bought a design from Walter

Righter in 1938 and began marketing it to hobbyists as the "Dennymite", and demonstrated it to the Army as the RP-2, and after modifications as the RP-3 and RP-4 in 1939. In 1940, Denny and his partners won an Army contract for their radio controlled RP-4, which became the Radioplane OQ-2. They manufactured nearly fifteen thousand drones for the army during World War II.

As a side note. It was at the Van Nuys Radioplane factory that in 1944 that Army photographer David Conover saw a young lady named Norma Jeane, and thought she had potential as a model. She was a technician at the Radioplane munitions factory when she was photographed at her job by *Yank, the Army Weekly* magazine and published in 1945 by the United States military during World War II.

This "discovery" led to fame for Jeane, who soon changed her name to Marilyn Monroe.

The true inventor of a radio controlled aircraft that could fly out of sight was Edward M. Sorensen as evidenced by his U.S. Patents. His invention was the first to be able to know from a ground terminal, what the airplane was doing such as climbing, altitude, banking, direction, rpm and other instrumentation. Without these patents the early radio controlled aircraft could only operate within visual sight of the ground pilot.

The U.S. Navy began experimenting with radio-controlled aircraft during the 1930s as well, resulting in the Curtiss "N2C-2" drone in 1937. The N2C-2 was remotely controlled from another aircraft, called a TG-2. N2C-2 anti-aircraft target drones were in service by 1938.

Assault drones remained an unproven concept in the minds of military planners through major allied advances of 1944. Utilization was limited to a 4-drone attack on a beached Japanese merchant ship in the Russell Islands at the end of July followed by expenditure of 46 drones in

the northern Solomon Islands. Two hits and two near-misses were scored on the stationary ship. Several of the later drones failed to reach their targets, but most were effective.

The use of drones as decoys goes back to at least the 1950s, with the Northrop Crossbow tested in such a role. The first operational decoy drone was the McDonnell Douglas "ADM-20 Quail", which was carried by Boeing B-52 Stratofortress bombers to help them penetrate defended airspace.

A series of reconnaissance drones derived from the Firebee, the Ryan Model 147 Lightning Bug series, were used by the U.S. to spy on North Vietnam, Communist China, and North Korea in the 1960s and early 1970s.

The Lightning Bugs were not the only long-range reconnaissance drones developed in the 1960s. The U.S. developed other, more specialized reconnaissance drones: the Ryan "Model 154", the Ryan and Boeing "Compass Copes", and the Lockheed D-21, all of which were more or less cloaked in secrecy.

By late 1959, the only spy plane available to the U.S. was the **U-2**. Spy satellites were another year and half away, and the SR-71 Blackbird was still on the drawing board. In such climate, concerns appeared about the negative publicity from the foreseen capture of U.S. airmen on the communist territory. Pilots' fears were realized in May 1960, when U-2 pilot Francis Gary Powers was shot down over the USSR. Not surprisingly, work intensified on an unmanned drone which would be capable of penetrating deep into enemy territory, and return with precise military intelligence. Within three months of the downing of the U-2, the highly classified UAV (called RPV back then) program was born, under the code name of *Red Wagon*.

Just after the incident involving the U.S. Navy destroyers USS *Maddox* (DD-731) and USS *Turner Joy* (DD-951), and even before it escalated into the presidential "Tonkin Gulf Resolution" and war with North Vietnam, the USAF had issued an immediate order for the UAV units to deploy immediately for Southeast Asia on any available C-130s or C-133s. The first birds (drones) would be Ryan 147Bs (AQM-34s) piggy-backed on C-130s, after completing their missions they would be parachuted for recovery near Taiwan.

From August 1964, until their last combat flight on April 30, 1975 (the fall of Saigon), the USAF 100th Strategic Reconnaissance Wing would launch 3,435 Ryan reconnaissance drones over North Vietnam and its surrounding areas, at a cost of about 554 UAVs lost to all causes during the war.

The **Gyrodyne QH-50 DASH** (Drone Anti-Submarine Helicopter) was a small, drone helicopter built by Gyrodyne Company of America for use as a long-range anti-submarine weapon on ships that would otherwise be too small to operate a full-sized helicopter. It was first produced in 1962 and it remained in production until 1969. It had a length of 12 ft. 11 in and a height of 9 ft. 8-1/2 in; rotor diameter of 20 ft.; maximum speed of 80 knots (92 mph); and a range of 71 nmi (82m). In November 1968, I was trained as a DASH Repair Officer at Dam Neck, Virginia, 5 miles South of Virginia Beach, in preparation for serving as the DASH Officer on the USS *Yellowstone* (AD-27) out of Mayport, Florida. DASH was a major part of the United States Navy's Fleet Rehabilitation and Modernization (FRAM) program of the late 1950s. FRAM was started because the Soviet Union was building submarines faster than the U.S. could build anti-submarine frigates. Instead of building frigates, the FRAM upgrade series allowed the U.S. to rapidly catch up by converting older ships that were otherwise less useful in modern naval

combat. The original DASH concept was a light drone helicopter that could release a nuclear depth charge or torpedoes. The aircraft was considered expendable.

The manned Gyrodyne Rotorcycle program of the mid-1950s provided prototype work for the DASH, and ultimately the Rotorcycle was modified to produce the initial drone version, the **DSN-1/QH-50A**. Serial production of the DASH began with the third version, the **DSN-3/QH-50C**, in which a 255 hp Boeing T50-4 turboshaft engine replaced the piston engine and the payload was increased to two Mk 44 homing torpedoes. A total of 378 QH-50Cs were produced before production ended in January 1969.

DASH's control scheme had two controllers, one on the flight deck, and another in the combat information center. The flight-deck controller would handle take-off and landing. The controller in the Combat Information Center (CIC) would fly DASH to the target's location and release weapons using semi-automated controls and radar. The CIC controller could not see the aircraft or its altitude and occasionally lost operational control or situational awareness. Late in the program, there were successful experiments to add a television camera to the drone. These DASH SNOOPYs were also used as airborne spotters for naval gunfire.

A tethered landing system was developed to land and take off in up to Force-6 seas (winds of 22 – 27 knots; sea waves of 8 – 13 ft.). This system consisted of steel rails which were screwed to the flight deck and a cable system to pull the helicopter out of the hangar bay.

Since it was expendable, DASH used off-the-shelf industrial electronics with no back-ups. The controls were multi-channel analog FM. Over 80% of operational aircraft losses were traced to single-point failures of the electronics. A total of 10% of the losses were from pilot errors, and only 10% of the losses were from engine or airframe failures.

The DASH program was canceled in 1969. Although low reliability was the official reason, the manufacturer pointed to the expenses of the Vietnam War, and the lack of need for antisubmarine capability in that war.

The usefulness of robot aircraft for reconnaissance had been demonstrated in Vietnam. With attached television cameras, they were used as remote artillery spotters and organic reconnaissance by their ships.

At the same time, early steps were being taken to use them in active combat at sea and on land, but battlefield Unmanned Aerial Vehicles (UAV) would not come into their own until the 1980s.

The US military is entering a new era in which UAVs will be critical to SIGINT (Tactical Signals Intelligence) payloads, or Electronic countermeasures systems should be in widespread use following 2010, with the UAVs controlled and relaying data back over high-bandwidth data links in real time, linked to ground, air, sea, and space platforms. The trend had been emerging before the American war in Afghanistan began in 2001, but was greatly accelerated by the use of UAVs in that conflict. The Predator RQ-1L UAV (General Atomics) was the first deployed UAV to the Balkans in 1995, Iraq in 1996, and was proved very effective in Operation Iraqi Freedom as well as Afghanistan.

The U.S. Customs and Border Protection agency has experimented with several models of UAVs, and has begun purchasing a fleet of unarmed MQ-9 Reapers to survey the U.S. border with Mexico. "In more than six months of service, the Predator's surveillance aided in the arrest of nearly 3,900 individuals and the seizure of four tons of marijuana, border officials say."

On May 18, 2006, the Federal Aviation Administration (FAA) issued a certificate of authorization which will allow the M/RQ-1 and M/RQ-9 aircraft to be used within U.S. civilian airspace to search for survivors of disasters. Requests had been made in 2005 for the aircraft to be used in search and rescue operations following Hurricane Katrina, but because there was no FAA authorization in place at the time, the assets were not used. The Predator's infrared camera with digitally enhanced zoom has the capability of identifying the heat signature of a human body from an altitude of 10,000 feet, making the aircraft an ideal search and rescue tool.

According to a 2006 *Wall Street Journal* report, "After distinguished service in war zones in recent years, unmanned planes are hitting turbulence as they battle to join airliners and weekend pilots in America's civilian skies. Drones face regulatory, safety and technological hurdles – even though demand for them is burgeoning. Government agencies want them for disaster relief, border surveillance and wildfire fighting, while private companies hope to one day use drones for a wide variety of tasks, such as inspecting pipelines and spraying pesticides on farms."

Digressing, if you want to be accurate, the original drones were actually carrier pigeons. Long before the days of being able to buy quadcopters with cameras on Amazon for anywhere between \$30 to \$500, it was much more difficult to get aerial photographs. You had to think outside the box—way outside the box.

There were a few attempts at capturing aerial shots using different techniques involving kites and rocket, but Dr. Julius Neubronner devised something with a mind of its own. The German tinkerer was a 1900s version of an early adopter. An amateur photographer and

inventor, Neubronner combined his various hobbies to make something completely new: the miniature pigeon camera.

In 1903, Neubronner patented his new invention. Using carrier pigeons, miniaturized roll-film camera and a timer, Neubronner was able to capture aerial images as well as the attention of onlookers. People were so captivated by Neubronner's innovation that he brought it to international expositions in Dresden, Frankfurt and Paris between 1909 and 1911.

The mechanics were fairly simple. The carrier pigeons wore harnesses that held the camera and then once released to fly, the cameras would snap photos as the timer went off.

Thanks to Neubronner's photography hobby, the project is quite well documented: According to comments left on The Public Domain Review, the pigeons appear to be dead and stuffed, which was probably the easiest way to capture the new technology on film.

Taxidermy enthusiast or not, the pigeon technology actually had real world use besides taking cool pictures. Neubronner's carrier pigeons and cameras were tested for use as military air surveillance during World War I.

Earlier this year it emerged that the Federal Aviation Administration (FAA) had granted Amazon permission to begin testing a delivery drone prototype for its Prime Air service, a venture that aims to transport packages to Amazon customers in under 30 minutes. But there was a hitch, with the company since revealing the vehicle cleared for use had already become obsolete.

Amazon first took steps to win the blessing of the authorities in July 2014, when it petitioned the FAA for permission to begin testing its drones. But the agency's response was hardly swift, finally granting an "experimental airworthiness certificate" to Amazon in March 2015. The slow progress partnered with the now-evident worthlessness of the permit prompted

Amazon to carry out testing of its more sophisticated models abroad, namely at a secret Canadian site only 2,000 ft. from the U.S. border.

By way of a letter to Paul Misener, Amazon's vice president of Global Public Policy, on Wednesday April 8, 2015, the FAA has granted the company's request for exemption. This will clear the way for Amazon to begin testing its drones outdoors in the United States.

The exemption dictates that Amazon's drones fly no higher than 400 ft. (122 m), no faster than 100 mph (161 km/h) and remain within the pilot's line of sight, among a raft of other conditions relating to safety and maintenance. These rules are consistent with a set of proposed guidelines around commercial drone flight that the FAA floated earlier in the year.

While it marks another step toward the realization of Amazon's ambitious drone delivery plan, there's still a long way to go before quadcopters are dropping parcels in your front yard.

The most obvious obstacle Amazon faces is convincing the FAA that drones can be safely flown beyond the line of sight. Well, that or it resorts to delivering packages only to buildings and people within a few hundred meters of its warehouses.

Ultimately, Amazon hopes to operate in a slice of airspace above 200 ft. (61 m) and beneath 500 ft. (152 m), where general aviation begins. It plans to fly drones weighing a maximum of 55 lb. (25 kg) within a 10 mi (16 km) radius of its warehouses, at speeds of up to 50 mph (80.5 km/h) with packages weighing up to 5 lb. (2.26 kg) in tow.

There are other drone problems. When a fire that started in the hills northeast of Los Angeles in July of this year, spread to Interstate 15 Saturday, drivers were forced to flee their cars because of flames that eventually destroyed 20 vehicles and damaged 10 more.

A rare rainstorm helped to control the wildfire, which is now contained, but not before private drones flying over the wildfire grounded firefighting aircraft for almost half an hour.

This incident marked the fifth time in a month that firefighting operations were temporarily grounded by a private citizen flying a drone.

Lives were put at unnecessary risk because helicopters could not fly, said fire department officials. The helicopters were helping to contain a large wildfire in San Bernadino County over the weekend. Five drones spotted hovering over the fire were thought to be shooting video for their owners, grounding firefighters' air tankers for eight minutes.

Part of the conflict between private drones and public safety is a lack of clear, legislated regulation around what drone owners can and cannot do, partly because the technology is relatively new.

State lawmakers in California are currently drafting a bill that would impose heavy fines and potential jail time on anyone whose personal drone interferes with firefighting efforts.

California law currently states that interfering with firefighters is a misdemeanor, but the proposed legislation would severely heighten that punishment.

U.S. rules governing drone use mean any pilot caught flying their craft over a disaster area that has temporary flight restrictions in place could be fined up to \$25,000. It is not clear whether the FAA is going to investigate who was piloting the drones over the Interstate 15 fire.

San Bernardino County supervisors unanimously agreed Tuesday, July 28, 2015 to offer \$75,000 in rewards for help in tracking down drone operators who interfered with firefighters during three major wildfires this summer. Also, proposed laws would give firefighters and other first responders' immunity if they damage drones interfering during a fire or other emergency.

As reported in the Kentucky New Era, in July of this year a 47-year old Bullitt County Kentucky man faced criminal charges after he shot down a drone that he apparently suspected was being used to view his teenage daughters while they were sunbathing. William Merideth used a shotgun to bring down the \$1,800 unmanned aerial vehicle on July 26. He told reporters he then clashed with four men who confronted him about the drone. Armed with a pistol, he forced the men to back off, but Merideth was later arrested and charged with criminal mischief and wanton endangerment.

In another case, a 50-year-old Hudson Valley (Ulster, N.Y.) man was found not guilty on Monday, June 22, 2015 on charges he unlawfully shot surveillance video and photo with a drone-mounted camera on a medical office building.

David Beesmer was arrested, but later released, by state police last July for taking footage of the new Mid-Hudson Medical Group building in Ulster. He said he knew his drone camera would not be able to see through the building's tinted windows. He had brought his mother to a doctor's appointment and while waiting for her flew his drone to take videos of the structure.

Also, as you probably read, a student's drone crashed into a part of newly renovated Commonwealth Stadium before the Wildcats faced Louisiana-Lafayette in the season opener on September 5, 2015.

As skydivers parachuted on to the field carrying American flags before kickoff, the drone hovered behind the scoreboard over the west end zone. It was in airspace close to heliports at nearby UK Chandler Hospital and Baptist Hospital.

As of September 12, Kentucky campus police have charged law student Peyton Wilson with second degree wanton endangerment for operating the drone. The school also says it has forwarded its findings to the FAA for further review.

Wilson was cited to appear in court for the misdemeanor charge punishable by a year in jail and a fine. Any discipline by UK would be handled by the school's student code of conduct violation office. Reportedly, the university does not have a written policy banning drones and is studying the issue.

However, other sources say drones are not allowed on campus and they are not allowed around the stadium on game day. The FAA put drone and model-plane enthusiasts on notice last October that it's illegal to fly the aircraft near Major League Baseball, NFL and NCAA Division I college football games and major auto races.

It was the second incident involving a drone at a sports event in the past week.

An unmanned aircraft plummeted into empty seats and caused a scare during a women's singles match Thursday night, September 3, 2015, at the U.S. Open. No one was injured, but it broke into pieces as it crashed.

A high school science teacher who had been flying the drone from a park outside the tennis venue was arrested Friday on reckless endangerment and other charges, police said.

In November 2011, Time Magazine reported The Surveillance Hummingbird: 16.5 Centimeters (wingspan). A team of engineers led by Matt Keennon at California-based AeroVironment has developed the Nano Air Vehicle (NAV), a tiny, two-winged surveillance prototype for the Defense Advanced Research Projects Agency. Designed to mimic a hummingbird's flight, the NAV can fly up to 11 mph in all directions, even backward. It can hover

and rotate clockwise and counterclockwise. The \$4 million aircraft is remote-controlled and weighs 18.7 g, less than one AA battery (but more than most real hummingbirds). It's also equipped with a video camera. Because it's so small, the NAV can go where humans can't: it can spy, scout out safe spots in combat zones, hunt for survivors after a building collapse or an earthquake and even locate a chemical spill. Who knew the canary in the coal mine would turn out to be a hummingbird?

Love them or hate them, drones are here to stay and the FAA hates them.

Whether good or bad, everyone seems to have an opinion on drones. Few technological advancements are as hotly debated as drones are right now.

The definition for what constitutes a drone varies, but most people agree that a drone is a remotely-piloted, unmanned aerial vehicle or aircraft. The distinction usually comes in its purpose — commercial or military.

With regard to military use, objections are fairly obvious — people have ethical concerns about "drone strikes," or the idea that a remotely-piloted aircraft could swoop in on a target and destroy it, especially when that target is a person. On the commercial end, though, arguments are more complicated.

Consumer drone use brings with it privacy concerns (many models have attachable cameras), regulatory issues, and concerns about the skill level of amateur pilots. Although, drones have done quite a bit of good in the world as well, such as disaster recovery, reforestation, and delivery of goods. And don't forget the Corvette Museum sinkhole in which drones were used to safely assess the damage and repair solutions.

Our local police, fire and rescue agencies have held off purchasing drones until the FAA settles on regulations that give public officials guidance on how to proceed, said Christian County Emergency Manager Randy Graham. He expects drones will soon become tools for police, fire and rescue teams across the state.

The city of Hopkinsville adopted an ordinance regulating the use of radio-controlled aircraft in 1987 – and that apparently applies today to drones. But nothing in the ordinance addresses the ability to shoot images while hovering over a neighbor’s yard.

The subject of drone use is a moving target, so to speak, as federal and local officials examine how to regulate them with growing personal and commercial use.

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Still, things go awry. Here are 12 drone disasters contributing to public wariness.

1. Drone crashes near the White House

On Monday, January 26, 2015, a drone crash landed on the White House lawn. The White House does have its own specific flight restrictions, but the drone wasn't easy to detect. Immediately after the incident, the White House went into lockdown. The US attorney decided not to charge the drone operator, Shawn Usman, after determining the drone was not under his control at the time of the crash.

2. Drone "attack" on German Chancellor Angela Merkel

During a Christian Democratic Party campaign in September 2014, a Parrot AR drone crashed in front of German Chancellor Angela Merkel. The drone was piloted by a German

Pirate Party member as a government surveillance protest. No one was harmed, but the situation raised concerns over similar experiences with weaponized drones.

3. Drone cuts off tip of photographer's nose

What started out as goofy holiday promotion ended terribly when a drone crashed, clipping the end of her nose and cutting her chin. The drone was a promotion by TGI Fridays called "Mobile Mistletoe," and it carried mistletoe above diners prompting them to kiss.

4. Drone injures Australian triathlete

At the Geraldton Endure Batavia triathlon in Australia, a drone was being used to photograph competitors when it crashed into triathlete Raija Ogden, causing a minor head wound, which required stitches to close. The drone operator, photographer Warren Abrams, claims that the drone crashed after someone in the audience stole control of it from him.

5. Drone injures bystanders in Virginia crowd

In the fall of 2013, spectators gathered at the Virginia Motorsports Park for the Great Bull Run, a festival with live music, drinking, a tomato fight, and a bull run similar to the Running of the Bulls in Spain. During the festival, a drone being used to record video crashed into the stands, injuring several people in attendance.

6. Drone flies too close to a news helicopter

One major concern for consumer drone use is the potential for operators to pilot drones into occupied airspace. In Washington, a news helicopter was covering a fire when the pilot noticed a drone flying. Nothing happened in this particular incident, but the FAA said it receives 25 reports a month of drones flying too close to manned aircraft. Recreational drone flights are supposed to be kept under 400 feet.

7. Drone nearly crashes into Airbus A320

In July 2014, a drone narrowly missed colliding with an Airbus A320 as it was taking off from London's Heathrow airport. The plane was at about 700 feet when the incident occurred and BBC reported that the Civil Aviation Authority (CAA) rated the incident as a "serious risk of collision," the top rating it can give.

8. Drone caught carrying drugs near the border

On Tuesday, January 20, 2015, a drone carrying methamphetamine crashed in Mexico near the US border. The drone was transporting more than six pounds of crystal meth when it crashed in a supermarket parking lot in the Mexican city of Tijuana. According to the DEA, drones are becoming a common means to transport drugs over the border.

9. Drone flies over Bank of America Stadium

Unsuspecting fans and players alike were surprised when a drone flew over Bank of America Stadium during a Carolina Panthers football game in Charlotte, North Carolina. The drone caused no harm or damage in its operation, but its operator was detained and questioned afterwards. This incident, along with similar situations, prompted the FAA to criminalize drone flight in certain areas.

10. Drone flies over Comerica Park

The Detroit Tigers were playing against the Baltimore Orioles in a Major League Baseball game when a drone went buzzing by overhead. Being that professional sporting events usually attract fans in the tens of thousands, a weaponized drone could cause serious injury. Drones are difficult to detect and make security harder to enforce at such events.

11. Drone crashes into Grand Prismatic Spring

A Dutch man crashed his drone in the Grand Prismatic Spring, a famous hot spring in Yellowstone National Park. At the time, park rangers were concerned that the downed drone, as well as attempts to remove it, could hurt the spring.

12. Drone attacked by hawk

In the ultimate case of nature fighting back against man-made machines, a drone met its demise hawk flying in a Cambridge, Massachusetts park. The drone caught the skirmish on its attached camera and the ensuing video went viral. While this probably won't be a common occurrence, the argument can be made that drones still pose a threat to wildlife.

References:

Nov 28, 2011 Time Magazine

July/August 2015 Smithsonian Magazine

Various web sites















