UAS and SmallSat Weekly News

Contents

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15Dec18

Ministry of Agriculture Tunisia Trains First Set Of Drone Pilots for Agricultural Productivity December 14, 2018

Eight pilots have successfully passed their drone flight training in Tunisia following a two-week intensive training period organized by the Ministry of Agriculture of Tunisia, the African Development Bank and Busan Techno Park. They were the first batch of 40 candidates selected for the exercise, which envisages training a total of 400 young Tunisians by 2021.

The project will also see the setting up of a training center equipped with training drones as well as computer simulation tools for drone control. This center is expected to be upgraded to a center of excellence in drone technology. The training also focused on promoting drone-centered activities in Tunisia in view of promoting efficiency and effectiveness.

After accumulating 20 hours of flight time and passing the practical flight, they obtained a "Drone Pilot Certificate" recognized by the Tunisian government. The four best trainees from this first batch will undergo further training for eight weeks to accumulate 100 hours of flight time. This will make them eligible to take the certification examination and qualify as drone pilot trainers. The participants were highly enthusiastic about the training.
https://uasweekly.com/2018/12/14/ministry-of-agriculture-tunisia-trains-first-set-of-drone-pilots-for-agricultural-productivity/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_2018_12_14&utm_term=2018-12-14

Crash Danger: Drones and Airplanes Scott Smith Dec 14th, 2018

Put yourself in a passenger seat of a plane. The pilot has told you to buckle your seatbelts as you descend to the airport. You're thinking about your itinerary, how fast you'll be able to land, get your luggage and get on to your final destination, when suddenly you hear a loud bang.

This happened yesterday on a Aeromexico flight to Tijuana, near the U.S. border. Crew members say they heard a "pretty loud bang." It's being reported as a possible drone crash with the Boeing 737.

Luckily for those involved, the damage was just to the nose cone, but the potential risk of physical harm drones can cause to airliners and passengers is high.

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In the U.S., there was a confirmed collision involving a drone and an Army helicopter near Staten Island. An Army helicopter hit the small hobbyist device near Staten Island. In Canada a drone struck the wing of a turboprop carrying six passengers. It was able to still land safely. A helicopter crash-landed after dodging a drone in South Carolina. There have been multiple reports from the UK over the last few months of close calls with drones near airports, and a New Zealand airport shut down operation for 40 minutes because a drone was spotted flying in its restricted airspace.

The biggest issue is that the airlines are dependent on someone visually spotting the drone from the ground, or the pilot seeing it in time to avoid it safely, as the traditional radar and surveillance systems used to detect larger aircraft doesn't see these small unmanned aircraft. https://fortemtech.com/blog/crash-danger-drones-and-airplanes/ jen.colton@fortemtech.com

16Dec18

Rocket Lab Launches 13 Cubesats on 1st Mission for NASA Mike Wall, Space.com Senior Writer December 16, 2018

Rocket Lab launched 13 tiny satellites on its first-ever mission for NASA early this morning just a month after acing its first commercial flight. An Electron booster lifted off from the company's launch site on New Zealand's Mahia Peninsula at 1:33 a.m. EST today, kicking off the ELaNa-19 mission for NASA. [In Photos: Rocket Lab and Its Electron Booster]

Fifty-three minutes later, all of the payloads had separated from the Electron's "kick stage" and settled successfully into a circular orbit about 310 miles (500 kilometers) above Earth.

The little satellites will do a variety of work up there. One will measure radiation levels in the Van Allen belts to help researchers better understand possible effects on spacecraft. Another aims to demonstrate the effectiveness of compact, 3D-printed robotic arms; and yet another will help prove out technology for a new solar-sailing system that could allow small spacecraft to explore deep space.

California-based Rocket Lab aims to greatly increase access to space using the expendable Electron, which is 57 feet tall and can carry about 500 lbs. to Earth orbit on each $5 million mission. (The ELaNa-19 cubesats together weigh about 172 lbs.)

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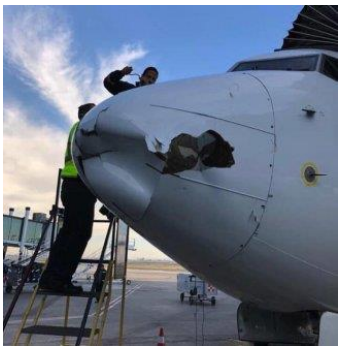
ELaNa-19 is part of NASA's Educational Launch of Nanosatellites program, which aims to spur and maintain young people's interest in science, technology, engineering and math. The mission marked the first time that NASA cubesats have not had to share a rocket ride with a much bigger "primary payload," Rocket Lab representatives said. (Ten of the 13 satellites are specific ELaNa payloads; the other three are also NASA cubesats. https://www.space.com/42714-rocket-lab-launches-cubesats-nasa.html?utm_source=notification

17Dec18

Risk of Jetliner-Drone Crash in Focus after Incident ANDY PASZTOR

U.S. government and industry efforts to prevent accidents between planes and drones are receiving heightened attention in the wake of a possible collision last week between an Aeromexico jetliner and an unmanned aircraft. Days after one of the carrier's planes touched down in Tijuana with a large dent and an adjoining gash in its nose, investigators and airline officials on both sides of the border still haven't definitively said whether the cause was hitting a drone, striking a bird or some unrelated structural problem. Aeromexico has said only that the cause of the damage is under investigation.



Some recent developments suggest gradual progress. Salt Lake City International Airport is about to install portable radar systems covering two runways supplied by Fortem Technologies Inc., a startup partly backed by Boeing Co. Local officials and business leaders in the San Francisco Bay Area also have picked Fortem as part of a proposed airspace safety and security initiative centered on the city of Palo Alto, the company said. San Diego and Raleigh, N.C., are among cities participating in separate federally sponsored pilot programs to develop collision-avoidance systems for drone package delivery other applications.

Some approaches rely on tiny, novel ground radars— weighing barely two pounds— designed to detect small, low-flying drones. Others depend on what are called "geofencing" techniques, which use onboard navigation and software to permanently block drones from entering certain areas.

An industry group, working under the auspices of the American Society for Testing and Materials, is crafting voluntary industry standards for the remote detection of drones. The standards are expected to be released early next year. On Friday, an FAA spokesman said technologies able to detect unmanned aircraft and prevent collisions "are essential for safe

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drone operation and further integration with the air-traffic system."
https://www.wsj.com/news/us

Northrop Grumman Formally Unveils Firebird UAS *Dec 14, 2018* Steve Trimble *Aviation Week & Space Technology*

Northrop Grumman has confirmed plans to launch a new product for an intelligence-gathering aircraft based on a new configuration of the Firebird, the optionally piloted, single-engine aircraft that first emerged as a Scaled Composites-designed demonstrator in 2011.

The company has not released endurance and altitude specifications, but the demonstrator version of the aircraft that first flew in 2011 was designed to fly missions as long as 40 hr. above 30,000 ft. with a 72.2-ft. wingspan.

It can be operated autonomously or with a crew of one or two onboard. The cockpit is configured to accommodate a pilot and mission systems operator. By replacing the glass canopy, removing the seats and installing a beyond-line-of-sight antenna, the Firebird can be reconfigured into a medium-altitude, long-endurance unmanned aircraft system within 4 hr., the Northrop official says.

Northrop also has a concept to control the aircraft autonomously while an onboard crewmember operates the payloads. Northrop performed the first unmanned flight of the new version of the Firebird in late November. The Firebird also is designed to accommodate a wide range of payloads. http://aviationweek.com/defense/northrop-grumman-formally-unveils-firebird-uas

Ameren Successfully Completes 60-Mile Drone Flight Over Transmission Lines

With thousands of miles of high-voltage lines, Ameren Corp. wanted a better and safer way to monitor its assets spread over rural territories beyond manual or helicopter inspections. The St. Louis-based energy company worked with Black & Veatch and Collins Aerospace to identify a solution: Beyond Visual Line of Sight (BVLOS) drone flights. The team now has proven they can inspect more miles of transmission lines faster and safer than ever envisioned. On Nov. 8, the team was able to use a BVLOS drone on a non-stop, 60-mile flight to inspect transmission lines. The successful flight

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demonstrated the maturing technology's promise of more efficient monitoring of expansive utility assets, especially in remote rural stretches.

"At Ameren, innovation is at the core of all we do, and the solutions we incorporate today, such as Beyond Visual Line of Sight drones, will enable us to continue to deliver safe, reliable and affordable energy to our customers tomorrow and for generations to come," said James Pierce, BVLOS program manager and lead of Ameren's Central Unmanned Aircraft System (UAS) Department. http://www.aero-news.net/index.cfm?do=main.textpost&id=2c867228-a685-48ba-a76f-171ef35ee1b5

FAA opens next round of LAANC service supplier approval procedures on 7 January 2019 December 15, 2018 Philip Butterworth-Hayes UAS traffic management news

The Federal Aviation Administration will open its next round of approving UTM suppliers for Low Altitude Authorization and Notification Capability (LAANC) services on 7 January 2019.

The FAA plans to host two USS application periods a year, each consisting of four steps. The entire process takes approximately five months to complete. Applicants should have a mature product at the time of application or have the capability to develop it before Formal Onboarding.

Before applying respondents must read and understand the following documents:

- How to Apply(PDF)
- LAANC Concept of Operations(PDF)
- USS Operating Rules(PDF)
- Memorandum of Agreement (MOA)(PDF)
- USS Onboarding Demonstration and Test Plan(PDF)

Upon successful completion of all onboarding activities, the FAA will sign the MOA and the USS will receive notification that it may begin providing LAANC services.
The winter onboarding application period opens on January 7, 2019. There will also be a summer onboarding starting on July 8, 2019. The onboarding process is a five month process.
https://www.unmannedairspace.info/uncategorized/faa-opens-next-round-laanc-service-supplier-approval-procedures-7-january-2019/

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Army Eyes Northrop-Designed VTOL Drone as Potential RQ-7 Replacement

Nichols Martin December 17, 2018 C4ISR, News

The U.S. Army is evaluating a vertical takeoff and landing drone **Northrop Grumman** designed with **MartinUAV** as the military service considers replacing its *RQ-7 Shadow* fleet, C4ISRnet reported Sunday.

Both companies developed the *V-BAT* unmanned aerial system to perform reconnaissance missions without the use of special equipment. A single controller can operate the drone using a tablet, software and a waypoint navigation technology.

The 84-pound drone is powered by a two-stroke engine and designed to fly at a top speed of more than 100 miles per hour at an altitude of up to 15,000 feet. The Army plans to test V-BAT at the services branch's upcoming *Future Tactical UAS* demonstration event.
https://blog.executivebiz.com/2018/12/report-army-eyes-northrop-designed-vtol-drone-as-potential-rq-7-replacement/

Airobotics Receives Unique FAA Waiver for Arizona Drone Flights Jason

Reagan December 15, 2018

Israeli drone provider Airobotics this week announced receiving the FAA's first ever three-prong certificate of waiver for "flying Beyond Visual Line of Sight for automated drone operations, over human beings, with a visual observer that is not required to keep a visual line of sight on the drone."

The waiver will allow the company to operate drones from its Remote Operations Center in Scottsdale, Ariz. BHP, the world's largest mining company, is Airobotics' first customer in the U.S. Airobotics CEO Ran Krauss explains: *"We recently opened our U.S. headquarters in Arizona and this latest certification opens the gateways to offering American mining companies, seaports, major construction projects, and in the future smart cities, an optimal means of increasing efficiency and safety while decreasing operational costs."*

The company plans to use the waiver mostly for mining operations. In May, Airobotics struck an exclusive deal with mining engineering firm RockBlast to deploy the fully autonomous drones to mining sites in Chile.

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"When deciding where to launch our first US office, Arizona was the top choice for us as it has a strong mining industry, great weather conditions for drone testing, and potential partners we're excited to work with," Krauss said in September. https://dronelife.com/2018/12/15/airobotics-receives-unique-faa-waiver-for-arizona-drone-flights/

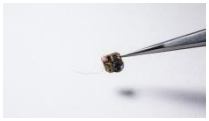
Researchers Put Drone 'Backpack' on Bees to Help Gather Data for Farming

Miriam McNabbon December 17, 2018

It's the ultimate solution to the problem of drone flight endurance – harnessing Mother Nature's power. Researchers from the University of Washington have put a tiny sensor backpack on bees to gather aerial data.

The value of honey bee pollination to U.S. agriculture is more than $14 billion annually, according to a Cornell University study. Crops from nuts to vegetables and as diverse as alfalfa, apple, cantaloupe, cranberry, pumpkin, and sunflower all require pollinating by honey bees."

The University of Washington's School of Computer Science & Engineering team has developed an organic drone sensing system with wireless communication and location tracking attached to the back of a bumblebee. "In this work, we leverage nature's flying machines to carry wireless sensors we can use for things like smart farming," Iyer said. The "backpack" for bees weighs 102 milligrams and is attached to the back of the bees. The tiny backpack sensors can collect data on crops: temperatures, humidity and overall health. They also collect location data – and allow researchers to follow the paths of the bees.



"As we collect the data, we broadcast radio signals to tiny circuits on the bees, to track where they're going in a 2-D space," Iyer said. As the bumblebees return to the hive each night, data from their sensors is uploaded and their tiny batteries recharged via wireless charging. https://dronelife.com/2018/12/17/the-ultimate-solution-to-battery-endurance-researchers-put-drone-backpack-on-bees-to-help-gather-data-for-farming/

Russia's Mikran "is developing counter-sUAS drone" December 17, 2018Philip Butterworth-HayesUAS traffic management news

Russia's TASS news agency reports that the country's Mikran company has developed the Carnivora, a counter-small UAS drone. The Carnivora has been developed to destroy sUAS in the air and attack enemy ground positions with

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high explosive bombs. "This is a small-class strike drone that can take off from unprepared sites and hover for 10-15 hours, as well as respond to threats, for example, mortar fire pockets. This is the first copy of this drone," Micran said. The drone prototype is currently undergoing factory flight tests.

For more information: http://tass.com/defense/1035907
https://www.unmannedairspace.info/uncategorized/russias-mikran-developing-counter-suas-drone/

18Dec18

China is driving use of armed drones in Middle East Zeina Karam, Associated Press December 17, 2018

Iranian drone Shahed-129 displayed at a rally in Tehran, Iran

BEIRUT (AP) — The use of armed drones in the Middle East, driven largely by sales from China, has grown significantly in the past few years with an increasing number of countries and other parties using them in regional conflicts to lethal effects.

The report by the Royal United Services Institute found that more and more Mideast countries have acquired armed drones, either by importing them, such as Jordan, Iraq, Saudi Arabia and the United Arab Emirates, or by building them domestically like Israel, Iran and Turkey.

China has won sales in the Middle East and elsewhere by offering drones at lower prices and without the political conditions attached by the United States.

Chinese armed drones have been used across Mideast battlefields, including in the war on Yemen, employed by the Emirati air force. Iran has also violated Israeli airspace with armed UAVs from bases in Syria, provoking armed Israeli response on the suspected bases.
https://www.chron.com/business/technology/article/Report-China-is-driving-use-of-armed-drones-in-13471165.php

Shell CIO to Begin Testing AI-Enabled Drones at Houston Plant Sara Castellanos Dec. 17, 2018

Delays in federal regulations governing the use of drones aren't stopping Shell and others from experimenting with how such vehicles could add business value

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Royal Dutch Shell PLC is testing how artificial intelligence-enabled drones could help prevent costly maintenance problems on expensive equipment while improving worker safety. Beginning early next year, the company will deploy several drones in a proof-of-concept project at the Shell Technology Center in Houston, which encompasses 1.2 million square feet and 44 buildings of laboratory and office space.

The drones and their accompanying cloud-based platform, which runs on Amazon Web Services, are made by Kespry Inc., a company that has raised $61 million in venture capital funding to date. In late 2017, Shell invested in Kespry's $33 million funding round through its investment arm Shell Technology Ventures, now called Shell Ventures.

Flying at a maximum height of about 8,000 feet and weighing about 4 pounds, Shell's drones will collect images of the Houston facility using cameras and infrared sensors. The data will be analyzed by machine-learning algorithms within a cloud-based platform to identify mechanical or structural issues such as leaks in pipes. The drones are controlled by mobile apps instead of joysticks.

If the pilot is proved to be successful and Shell expands it to other facilities, the cost savings from Shell's drone deployment next year could be in the millions of dollars, especially because drones can check for maintenance issues every few days. https://www.wsj.com/articles/shell-cio-to-begin-testing-ai-enabled-drones-at-houston-plant-11545082022

Pentagon procurement chief Ellen Lord: DoD needs launch vehicles for small satellites Sandra Erwin December 17, 2018

Undersecretary of Defense for Acquisition and Technology Ellen Lord visits launch startup Virgin Orbit in Long Beach, Calif. "I think we need to look at launch service capability for small sats as well as large."

WASHINGTON — The U.S. military will have growing demands for space vehicles that can launch small satellites to orbit on short notice. Undersecretary of Defense for Acquisition and Sustainment Ellen Lord said the Pentagon should work more closely with launch providers to make sure those services are available in the near future. One of her stops during a recent trip to California was launch startup Virgin Orbit, a spinoff of Richard Branson's suborbital spaceflight company Virgin Galactic. The company developed a vehicle

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called LauncherOne that will be air-launched from a modified Boeing 747 aircraft. It is preparing to launch a small satellite for the Defense Department in 2019.

"They're an example of the type of companies I think we need to cultivate," Lord told reporters at the Pentagon on Monday. "I think we need to look at launch service capability for small sats as well as large."

Virgin Orbit created a subsidiary, Vox Space, specifically to work with the U.S. government. The upcoming 2019 mission is for the DoD Space Test Program, overseen by the Air Force Space and Missile System Center. The launch deal with Vox Space was arranged by the Pentagon's technology outreach office in Silicon Valley, the Defense Innovation Unit.
https://spacenews.com/pentagon-procurement-chief-ellen-lord-dod-needs-launch-vehicles-for-small-satellites/

Child receives world's first drone-delivered vaccine APPLICATION HEADLINE NEWS HEALTH INTERNATIONAL ALEX DOUGLAS DECEMBER 18, 2018

A one-month-old child has become the world's first to be given a vaccine delivered commercially by drone.

On a remote island in the South Pacific country of Vanuatu, the delivery, executed by Swoop Aero, covered almost 40km of rugged mountainous terrain to reach Cook's Bay where 13 children and five pregnant women were vaccinated by a registered nurse.

UNICEF executive director, Henrietta Fore, said: "Today's small flight by drone is a big leap for global health. With the world still struggling to immunize the hardest to reach children, drone technologies can be a game changer for bridging that last mile to reach every child."

In tests last week, the Ministry of Health, with support from UNICEF, conducted drone trials with two drone operators, Swoop Aero and WingCopter, using test payloads.

Swoop Aero passed the first phase of trials by landing the payloads within 2 meters of the target after a 50km flight over numerous islands and way points.

This is also the first time globally that a government is contracting a commercial drone company to transport vaccines to remote areas. https://www.commercialdroneprofessional.com/child-

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receives-worlds-first-drone-delivered-vaccine/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-286344-Commercial+Drone+Professional+DNA+-+2018-12-18

19Dec18

Everything You Need to Know About SkyPixel and DJI's 2018 Aerial Photo & Video Contest Malek Murison December 18, 2018

DJI and SkyPixel's fourth annual drone photo contest is here. Since its launch in 2014, DJI's social media platform has become a global community for aerial photographers and videographers. It now has more than 10 million registered users around the world and thousands of aerial images and videos uploaded daily.

Drying nature, the winner in the Professional category from last year's contest.

Last year, SkyPixel hosted its 3rd annual photo contest. Members were asked to submit their best drone-enabled shots. 44,000 photos from over 140 different countries later, a handful were selected as winners across a number of categories.

This year's contest will run from December 18, 2018 to February 18, 2019. Thousands of inspirational shots from across the globe make for a pretty inspirational catalogue for prospective pilots.

This year Skypixel is welcoming submissions from professional photographers, videographers, aerial enthusiasts and content creators of all kinds.
https://dronelife.com/2018/12/18/everything-you-need-to-know-about-skypixel-and-djis-2018-aerial-photo-video-contest/

Drone life-saver program rolling out across Australian beaches this summer December 18, 2018 Feilidh Dwyer

Along with a gigantic coastline, great weather and a litany of deadly animals, the lucky country down under has some of the world's best beaches.

As millions of Australians and tourists make their way to beaches

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this summer, Surf Life Saving Australia (SLSA) has partnered with Westpac bank to launch a surf rescue program using drones.

51 UAVs are due to be deployed in locations around the nation and will be tasked with conducting beach patrols to ensure swimmers and paddlers stay safe while in the water.

Surfer's Paradise, Queensland

Between June 2017 and June 2018, 249 Australians drowned. 20 percent of those deaths occurred on beaches. The main purposes for these drones are to give surf life-saving crew an overview of what's happening on a beach at any time. When not patrolling, they might be on standby and then rapidly deployed to the scene of an emergency in order to transmit critical information about rips or swimmers who may be struggling to stay afloat. https://www.wetalkuav.com/australia-drone-life-saving-program/?utm_source=WeTalkUAV&utm_campaign=f96c60ccfd-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_1d410cb84d-f96c60ccfd-83642867

Energy Drone Coalition Releases Inaugural "Drones in the Energy Industry" Benchmark Survey Results December 18, 2018

The Energy Drone Coalition, powered by InnovateEnergy, and DRONEII.COM, are pleased to announce the release of their joint report, "Drones in the Energy Industry." This independent report on the oil & gas, power/utilities, chemical and petrochemical UAV industry finds a market in transition from field trials and POC's to scaling in the enterprise for UAV operations, and it reveals the initial insights into the market's use of drones in their inspection, mapping & surveying projects.

"This survey was created in July 2018 and distributed within the Energy Drone Coalition network in the North American region with 214 total surveys completed," said Sean Guerre, Director. "The survey is planned to be conducted again in 2019 to assess operational changes, market growth and technological developments of commercial drones in the energy industry."

- Around two-thirds of the energy companies who responded to the survey are currently operating drones.
- 50% of companies have set up drone operations in-house.
- While most energy companies have established a drone department/division, the majority of drone operations in the energy industry for 2018 is in the "Proof of Concept" phase (60% have less than 10 flights per month).

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- Multi-copters are the most utilized drone configuration. The energy sector utilizes infrared sensors quite often in comparison to other industry sectors.
- Endurance, range, reliability and flexible utilization are the core developments required by the respondents to grow or scale their drone operations.
- The energy sector is strongly focused on drones for maintenance and inspection applications and is keen to increase research & development efforts for BVLOS operation.

The report is available for download here. https://uasweekly.com/2018/12/18/energy-drone-coalition-releases-inaugural-drones-in-the-energy-industry-benchmark-survey-results/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_2018_12_18&utm_term=2018-12-19

Lift Aircraft Flies Ultralight eVTOL MARY GRADY December 19, 2018

Lift Aircraft, based in Austin, Texas, has introduced a design for an electric-powered VTOL that it aims to operate as an ultralight. The company's plans include establishing flying zones in scenic, rural areas where customers with no flight experience can take a short training course and then go for a flight on their own. The aircraft, which resembles the Volocopter, weighs 432 pounds and can carry one person. It's controlled with a joystick and an iPad. Lift details on its website its vision for how the system will work—customers will book a flight by using an app, then watch instructional videos, practice in a simulator and take a test before boarding and taking off on their own to explore, for up to 15 minutes.

The aircraft, which first flew last month, is expected to fly in public at South by Southwest, in Austin, in March. It's powered by 18 independent motors and propellers, the landing gear is designed for either land or water landings and it's built entirely of carbon fiber. https://www.avweb.com/eletter/archives/101/4215-full.html?ET=avweb:e4215:2565185a:&st=email#232006

Intelligent Parachute Rescue System For DJI M600 Made In Austria December 19, 2018 News

In the development of the parachute system of Drone Rescue Systems GmbH, the main focus was on reliable, autonomous crash detection. A potential operation Beyond Visual Line of

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Sight should be possible in case of emergency.

The DRS system is equipped with electronics and intelligence that quickly detects a potential crash and ejects the parachute autonomously. The entire parachute can be deployed even with a total failure of the drone.

The complete system weighs only 420 grams. The parachute is catapulted out of the cage by an elastic cord system. The parachute is rectangular and is pendulum- and wind stable. It can be deployed from an altitude of 10 m. https://uasweekly.com/2018/12/19/intelligent-parachute-rescue-system-for-dji-m600-made-in-austria/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_2018_12_18&utm_term=2018-12-19

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London Gatwick Shut by `Deliberate' Drone Raid Amid Holiday Rush

Christopher Jasper Ellen Milligan Justin Bachman *December 20, 2018*

London's Gatwick airport remains closed more than 17 hours after sightings of illegal drones led flights to be grounded, disrupting journeys for as many as 115,000 people on one of the busiest travel days of the year. Lines of passengers circled Gatwick's two terminals Thursday and hundreds hunkered down on departure-hall floors. After further sightings the airport said operations wouldn't resume before 4 p.m. at least. Police said the incursions were clearly deliberate, though most likely not terror related.

Reports of two objects above the airfield prompted authorities to halt flights at about 9 p.m. Wednesday, with more than 50 incoming planes diverted to other hubs across Britain and some in mainland Europe. "We believe this to be a deliberate act to disrupt the airport," Gatwick police commander Superintendent Justin Burtenshaw said in a statement. "However, there are absolutely no indications to suggest this is terror related."

Diverted or canceled flights overnight affected about 6,000 people at carriers including Cathay Pacific Airways Ltd. and Norwegian Air Shuttle ASA, while 2,000 more were unable to depart on 18 scrapped services. The extended closure means hundreds of daytime operations may be lost in what would be one of the worst-ever disruptions to schedules by illegal drone incursions.

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Even when the airport reopens, further upheaval is likely, with EasyJet saying in a statement that the overnight shutdown has left aircraft and crew rostered to fly from Gatwick stranded at other locations. https://www.bloomberg.com/news/articles/2018-12-19/london-s-gatwick-airport-suspends-all-flights-on-drone-report?srnd=premium-asia

Teck Improves Mining Surveys With Skycatch Drone Tech Betsy Lillian December 19, 2018

San Francisco-based Skycatch, an industrial data collection and analytics company, says its technology has been selected by Teck Resources Ltd., a diversified resource company based in Canada, for drone surveying at mining sites.

Teck will benefit from sub-5-centimeter georeferenced topographic maps and the ability to perform on-the-fly volume calculations.

Teck uses Skycatch at its Red Dog operations in northwest Alaska and Line Creek steel-making coal operation in the Elk Valley of British Columbia. Both of these sites can experience high winds and drastic temperature changes, requiring a rugged drone that can withstand the conditions.. https://unmanned-aerial.com/teck-improves-mining-surveys-with-skycatch-drone-tech?utm_medium=email&utm_source=LNH+12-20-2018&utm_campaign=UAO+Latest+News+Headlines

Federal Aviation Administration written exam at the completion of the course. The sUAS Commercial Remote Pilot Training includes three days of instruction and the FAA exam, with course topics including airspace, meteorology, weather, UAS performance, loading and center of gravity, and Part 107 instruction. The scholarships are available to law enforcement, fire and emergency management organizations.

“Approximately 35 percent of the attendees of this training come from the public safety arena. We do not want cost to become a barrier to providing access of this lifesaving technology into the hands of our first responders and emergency managers,” says Kurt J. Carraway, UAS research executive director of Kansas State Polytechnic’s Applied Aviation Research Center. “K-State has offered this training since the inception of the FAA regulations for commercial UAS operations..” https://unmanned-aerial.com/k-state-offers-scholarships-for-first-responder-suas-training?utm_medium=email&utm_source=LNH+12-20-2018&utm_campaign=UAO+Latest+News+Headlines

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Vodafone Uses 4G Network For UK Christmas Drone Delivery Malek

Murisonon: December 19, 2018

Telecoms giant Vodafone has completed what they claim is the UK's first ever drone delivery using a mobile network. Rather than the radio link used to control the vast majority of off-the-shelf models, Vodafone demonstrated how mobile network coverage could instead enable deliveries to remote or distant destinations.

The company's festive drone flew to one of the most southerly points of the UK, the remote coastal watchtower in Portland Bill, Dorset. Volunteers working there were treated to a Santa-themed hamper from on high.

By controlling their Santa drone using a portable 4G coverage and a portable router, the Vodafone team could monitor the flight in real time and operate beyond line of sight. Vodafone has also suggested that, in the near future, the low latency of 5G will open up new opportunities for using drones in more densely populated areas.

Don't let Vodafone's festive drone delivery fool you into thinking that Europe's UAV projects are more gimmick than substance. Last month DJI took part in a large UTM Test in Manchester, England, in an event which saw industry stakeholders lay the foundations for a system that could enable urban delivery services. Swiss Post and Matternet are already trialling BVLOS medical drone delivery flights in Switzerland. While aerial deliveries in Iceland's capital city, Reykjavik, are well underway. https://dronelife.com/2018/12/19/vodafone-uses-4g-network-for-uk-christmas-drone-delivery/

Is Our Airspace Safe? Why Counter Drone Technology is Necessary Howard A. Raphaelson December 18, 2018

Unmanned aerial vehicles (UAVs) are here to stay, and that means our airspace is changing too. However, along with brand new possibilities come brand new threats.

Drone-related dangers range from aircraft collisions and communications interference to illegal surveillance and trafficking. It's no surprise that a new need is emerging in the UAV community: counter-drone technology.

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Why are so many drones getting close to manned aircraft? Most incidents happen too high in the air or too close to an airport – in other words, in prohibited airspace where drones are illegal.

While humans are no matches for incoming drones, animals are a different story. Some birds actually mistake drones for other birds, creating injury risks for the birds *and* the drones. During one confusing mid-air [drone encounter in Massachusetts](), a red-tailed hawk snatched a drone from the air and tossed it to the ground as the onboard camera continued filming.

From gun-like weapons that jam communications to malware that quietly hijacks the controls, new counter drone tools continue to emerge, offering better and more aggressive ways to keep out unwanted drones. But which counter drone technology is the most capable?

For now, it's the shoulder-fired counter drone weapons that offer the most exciting features. If you want to stop an unwanted drone from getting closer, you need to disrupt communication between the drone and its pilot. Today, a few different "guns" and weapons are designed to target flying drones and allow you to do just that. They can even deliver the drone back to you so that you can identify the pilot and keep any incriminating or illegal data in your possession.

Counter drone devices continue to offer new ways to reduce risks, enforce existing laws, and protect the airspace. https://www.expouav.com/news/latest/counter-drone-technology-necessary/

Drones, 3D App Could Improve Inspections for Aging Bridges 12/19/2018 Kenny Walter - Digital Reporter - @RandDMagazine

More than 54,000 of the 612,677 bridges in the U.S. have at least one key element that is in poor or worse condition, according to a 2018 bridge deficiency report conducted by the Federal Highway Administration.

Researchers from the Michigan Tech Research Institute are using unmanned aerial systems to view difficult-to-reach locations, compile large sets of data and explore possible defects. Their new mobile application can upload field data and notes right into a bridge management system.

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The researchers used a variety of drones to conduct inspections, including a hexacopter and quadcopter. These unmanned vehicles fly in 20-minute increments within line of sight below 400 feet. They are outfitted with photogrammetry and thermal imagery gear that detects nuances beyond what the human eye can pick up. https://www.rdmag.com/article/2018/12/drones-3d-app-could-improve-inspections-aging-bridges

Pilot Training includes three days of instruction and the FAA exam, with course topics including airspace, meteorology, weather, UAS performance, loading and center of gravity, and Part 107 instruction. The scholarships are available to law enforcement, fire and emergency management organizations.

"Approximately 35 percent of the attendees of this training come from the public safety arena. We do not want cost to become a barrier to providing access of this lifesaving technology into the hands of our first responders and emergency managers," says Kurt J. Carraway, UAS research executive director of Kansas State Polytechnic's Applied Aviation Research Center. "K-State has offered this training since the inception of the FAA regulations for commercial UAS operations.." https://unmanned-aerial.com/k-state-offers-scholarships-for-first-responder-suas-training?utm_medium=email&utm_source=LNH+12-20-2018&utm_campaign=UAO+Latest+News+Headlines

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21Dec18

Gatwick Airport Reopens After 'Deliberate' Drone-Related Disruptions Amie Tsang and Russell Goldman Dec. 21, 2018

Gatwick Airport, Britain's second-largest air hub, reopened at 6 a.m. on Friday after being shut for more than 32 hours amid multiple sightings of drones flying illegally in the runway area, in what officials described as a "deliberate act" that disrupted air travel for 120,000 stranded passengers.

As the authorities continued to hunt for the culprit, or culprits, behind the incursions — with the last sighting coming at 9:52 p.m. Thursday — officials at the airport, south of London said

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the 700 arrivals and departures scheduled for Friday would probably be subject to delays and cancellations.

The episode provided the starkest evidence to date of how vulnerable airports across the world are to drones, which are widely available, loosely regulated and more advanced in their technology than equipment meant to guard against the risks they pose.

As of about 8:30 a.m., 100 flights had been canceled and there was a heightened military and police presence around the airport.

Chris Woodroofe, chief operating officer for Gatwick Airport, told the BBC that the airport was taking extra steps to protect air travel. “We have been working overnight with the police, with a number of government agencies and with the military to put in place additional mitigating measures,” he said, declining to provide details.
https://www.nytimes.com/2018/12/21/world/europe/gatwick-airport-reopens-drone.html

Boeing Secures $90M Navy Contract Modification for MQ-25 UAV Research, Analysis

Matthew Nelson December 20, 2018 Contract Awards, News

Boeing has received a potential $90.4M contract modification from the U.S. Navy to conduct analysis and studies related to a carrier-based unmanned air vehicle.

Work will take place in St. Louis, Miss., through August 2024 as part of the *MQ-25* manufacturing, development and engineering phase, the Department of Defense said Wednesday.

The company won an $805.3M contract in August to build four MQ-25s and help the Navy integrate the drones with the carrier air wing.

The military service will obligate $10M at the time of award from its fiscal 2019 research, development, test and evaluation funds. https://www.govconwire.com/2018/12/boeing-secures-90m-navy-contract-modification-for-mq-25-uav-research-analysis/

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Mother and daughter duo arrested over prison contraband drone delivery

APPLICATION CRIME NEWS ALEX DOUGLAS DECEMBER 21, 2018

The pair, who live in Tampa Bay, allegedly flew the package onto the roof of the Martin Correctional Institute in Indiantown.

According to a report from Fox News, they were trying to deliver tobacco and mobile phones to an inmate who is believed to be a close family member.

Officials revealed that guards quickly noticed the drone and alerted the sheriff's office meaning the delivery was unsuccessful.

Deputies then found the pair driving around the outside of the facility which subsequently led to their arrest.

Drones being used for delivery into prisons have become increasingly common.
https://www.commercialdroneprofessional.com/mother-and-daughter-duo-arrested-over-prison-contraband-drone-delivery/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-286761-Commercial+Drone+Professional+DNA+-+2018-12-21