UAS and SmallSat Weekly News

Contents

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28Aug21

Dawn Aerospace Flight Testing Commences – Five Flights Complete Aug 26

Dawn Aerospace, a New Zealand-Dutch space transportation company, has conducted five flights of the company's Mk-II Aurora suborbital spaceplane. The flights were to assess the airframe and avionics of the vehicle and were conducted using surrogate jet engines.

The campaign was run from Glentanner Aerodrome in New Zealand's South Island. Taxi testing commenced in early July and five flights occurred between the 28th and 30th of July, reaching altitudes of 3,400 feet.

Dawn is creating reusable and sustainable space technologies – suborbital and orbital rocket-powered planes – that operate much like a fleet of aircraft, taking off and landing horizontally at airports.

Mk-II is a suborbital plane designed to fly 100 km above the Earth and aims to be the first vehicle to access space multiple times per day. The vehicle serves as a technology demonstrator for the two-stage-to-orbit-vehicle, the Mk-III. Mk-II will also be used to capture atmospheric data used for weather and climate modelling and to conduct scientific research and technology demonstrations. https://www.dawnaerospace.com/blog/mkii-flight-testing-commences

NATIONAL DRONE SAFETY AWARENESS WEEK 2021 COMING NEXT MONTH August 26, 2021 Sally French Events, News

The third annual National Drone Safety Awareness Week 2021 is set for mid-September, with both virtual and in-person events. The holiday week was created by the Federal Aviation Administration to raise awareness about drones, with a focus specifically on recreational drone pilots.

The week runs from Sept. 13-19, 2021, with each day having a different theme. They are:
Monday: safe flyers take the recreational unmanned aircraft safety test (TRUST).
Tuesday: register your drone and mark it properly. **Wednesday:** become part of the flying

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community. **Thursday:** new rules like Remote ID and Operations over People. **Friday:** public safety and public acceptance. **Weekend:** go fly.

But while the event is led by the FAA, it largely relies on individuals and the private sector to put on events.

You can share your events online in different ways to let everyone know about it, whether they actually attend or not. To share online you can: post about your event using the Unmanned Safety Team's National Drone Safety Week Voluntary Tracking Tool and post your own social content using #DroneWeek

The FAA has also created digital assets including Zoom backgrounds, smartphone screens and more to help support promotion of your own event.
https://www.thedronegirl.com/2021/08/27/national-drone-safety-awareness-week-2021-coming-next-month/

ANRA Achieves 100 Hour Drone Delivery Milestone August 27, 2021 News

ANRA Technologies, a leader in delivery systems for uncrewed aircraft, achieved a 100-flight hour milestone while conducting Beyond Visual Line of Sight delivery operations in India. ANRA led their consortia in support of a project awarded by the Directorate General of Aviation and the Ministry of Civil Aviation. ANRA and Swiggy made history by launching the first end-to-end BVLOS drone delivery trials as part of this project last June. One of the project requirements was to fly 100 hours to collect data and lessons learned to inform the Indian regulatory process as government stakeholders prepare the next set of drone rules for BVLOS operations.

ANRA's pilots flew 90 percent of the total flight hours alongside consortia partner BetterDrones, which flew the remaining flight hours. The flight team deployed to the campus of the Indian Institute of Technology Ropar and the Etah district. Flights consisted of multirotor drones operating on ANRA's SmartSkies CTR and SmartSkies DELIVERY software platforms, delivering products from consortia partner Swiggy, India's largest online food ordering and delivery platform. The project concluded having flown over 350 sorties, transiting 1,100 kilometers of incident-free operations. The flight team overcame numerous challenges, ranging from heavy rains during monsoon season to COVID quarantines, often drawing attention from curious onlookers who wanted to see the technology in

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action. https://uasweekly.com/2021/08/27/anra-achieves-100-hour-drone-delivery-mileston/?utm_source=rss&utm_medium=rss&utm_campaign=anra-achieves-100-hour-drone-delivery-mileston&utm_term=2021-08-27

29Aug21

DRONERESPONDERS global public safety drone map now exceeds 900 agencies

Ishveena Singh - Aug. 27th 2021

As first responders continue to embrace drones for emergency missions across the globe, a new map dashboard hopes to facilitate communication, coordination, and collaboration between various public safety agencies. This free, interactive global map and directory is now home to over 900 agencies from more than 20 countries – and the numbers are rising steadily.

DRONERESPONDERS has spent the last few months working with NASA AMES Research Institute and mapping company Esri to create the most comprehensive directory of public safety agencies that use drones in emergency response.

Not only is the initiative being welcomed by the community, but it has also started showing results. As Charles Werner, director of DRONERESPONDERS, explains:

Our goal is to establish a collaborative network that can share best practices, lessons learned, regulatory updates, safety issues, facilitate training opportunities, as well as identify the location and program capabilities.

This has already helped some agencies identify programs near them that they were not aware of, started discussions of assistance and developed regional teams.
https://dronedj.com/2021/08/27/global-public-safety-drone-map/

30Aug21

FAA Highlighting Safety During National Drone Week Kerry Lynch August 27, 2021

The FAA is encouraging the drone community to join in activities scheduled for the third annual National Drone Safety Awareness Week from September 13 to 19. Stressing that safely integrating drones into the National Airspace System is

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a key pillar of its work, the agency said the weeklong event can help forward its mission of ensuring that drone pilots understand their responsibilities.

The awareness week is designed to bring together and educate drone pilots and recreational pilots and highlight new requirements and best practices. Each day of the event will feature a specific theme: Safe Flyers Take the Recreational UAS Safety Test (Monday), Register and Mark Your Drone (Tuesday), Become a Part of a Flying Community (Wednesday), New Rules—Remote Identification and Operations Over People (Thursday), Public Safety & Public Acceptance (Friday), and Share the Skies—Get Out and Fly (Saturday and Sunday).

The FAA has also developed resources and other activities to help facilitate participation, including a guidebook, graphics, a tracking tool, and a photo showcase.
https://www.ainonline.com/aviation-news/business-aviation/2021-08-27/faa-highlighting-safety-during-national-drone-week

Kratos Air Wolf Tactical Drone System Completes Successful Flight at Oklahoma Range Yolanda White

SAN DIEGO, Aug. 25, 2021 (GLOBE NEWSWIRE) -- Kratos Defense & Security Solutions, Inc. (NASDAQ: KTOS) announced today that its Air Wolf Tactical Drone System completed a successful flight at the recently approved Burns Flat, Oklahoma Range Facility. It was the inaugural flight at Burns Flat Range location that included a proprietary Kratos artificial intelligence/autonomy system which has been developed for high performance jet drone aircraft.

The newly approved Burns Flat Test Range enables Kratos to accelerate drone testing and demonstration, further increasing Kratos' ability to develop and demonstrate jet drones, supporting subsystems, and other tactical systems and aircraft. https://www.channelchek.com/news-channel/Release___Kratos_Air_Wolf_Tactical_Drone_System_Completes_Successful_Flight_at_Burns_Flat_Oklahoma_Range_Facility

NASA Mars smallsat mission passes review Jeff Foust August 28, 2021

WASHINGTON — A smallsat Mars mission that had to revise its plans after it lost its initial ride has won NASA approval to move into full-scale development.

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NASA announced Aug. 20 that the Escape and Plasma Acceleration and Dynamics Explorers (EscaPADE) had passed an agency review called Key Decision Point C, allowing it to move into its final design and construction of its instruments.

EscaPADE, part of NASA's Small Innovative Missions for Planetary Exploration (SIMPLEx) program, will go into orbit around Mars and study the interaction of the planet's magnetosphere with the solar wind and how that affects the escape of gases from the planet's atmosphere. https://spacenews.com/nasa-mars-smallsat-mission-passes-review/

Spending on UTM accelerates after two years of downturn July 29, 2021 Philip Butterworth-Hayes Sponsored editorial 2

Unmanned Airspace's latest forecast for the global UTM market 2021-2025, published in July 2021, is for a market worth $1.27 billion, of which $433 million will come from award of strategic national UTM development programs and $844.4 million will be derived from tactical UTM operational charges. This is a considerable uplift on recent market forecasts.

"Our research has noted the negative impact that the COVID-19 pandemic had had on many market sectors and the slow uptake of UTM and U-space regulations, standards and procedures by States around the world, which has slowed the implementation of UTM/U-space programs over the last eighteen months," said Philip Butterworth-Hayes, one of the authors of the report.

States drew back from operational UTM deployment programs after 2018 for several reasons beyond the pandemic, including uncertainty over regulatory developments and standards and a lack of maturity in key technologies to support more automated BVLOS flights. The COVID-19 pandemic has also slowed the capacity of regulators and air navigation service providers to develop new programs and investments in areas which rely on income from traditional commercial aviation sources. https://www.unmannedairspace.info/sponsored-editorial-2/spending-on-utm-accelerates-after-two-years-of-downturn-new-unmanned-airspace-market-study/

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Drone Delivery Is Live Today, And It's 90% Cheaper Than Car-Based Services John Koetsier Senior Contributor Aug 18, 2021

Amazon may be failing to deliver on its promises of drone delivery programs. But a home-grown Irish company is running live autonomous drone delivery right now in Galway, Ireland, has licenses to take it across the European Union, and is poised to — at the right moment — take its tech and knowhow across the Atlantic. To Canada, at least. Regulation in the U.S. is too far behind the times.

"We're delivering coffees," Manna CEO Bobby Healy told me in a recent episode of the TechFirst podcast. "We're delivering burgers and fries. We're delivering ice cream, broccoli, melon, you name it, we're delivering it. And it arrives perfect, you know, piping hot coffee, foam intact, little design on top of the foam still intact."

Manna is doing 2,000 to 3,000 flights a day using fully autonomous suitcase-sized drones that fly at 50 miles an hour at an altitude of 150 to 200 feet. Near your home, it'll scan the area with lidar and radar to find a safe spot, descend, drop off your delivery, and whiz back for its next pick-up.

A Manna drone in operation, flying autonomous deliveries in Galway, Ireland.

Each drone runs seven or eight deliveries an hour, and there's a huge advantage over an Uber Eats or Skip The Dishes style car delivery. Think 10% of the cost.

Not only is it cheaper, it's better. Because it allows a tiny bookstore or pizza parlor in semi-rural Ireland to have a better delivery guarantee than global supergiant Amazon.
https://www.forbes.com/sites/johnkoetsier/2021/08/18/drone-delivery-is-live-today-and-its-90-cheaper-than-car-based-services/?sh=28c43a134d02

Phoenix adds safe, efficient gas-leak repairs to widening use of its municipal drone fleet Bruce Crumley - Aug. 30th

Last week, authorities in Phoenix flew a drone to locate a major gas leak and used video from the craft to collect information on the fastest and safest way to repair the potentially explosive breach.

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Officials from the Scottsdale Fire Department deployed the drone Friday in response to reports of a gas leak in the northern section of town – a sufficiently large rupture to emit a loud, jet-like noise. Relatively quickly, pilots monitoring images zeroed in on a section of the fuel line, locating a large tear in a section of the six-inch main. Once the precise position and nature of the damage was ascertained, the craft was flown over the surrounding area to give authorities an idea of the safest way to access and repair the compromised section.

Use of the drone by Scottsdale's Fire Department allowed all the inspection and reconnaissance work necessary to repair a major gas leak to be handled remotely. That meant the many humans who normally would have had to intervene – at considerable risk of injury or death in the event of a sudden explosion – could be kept at a distance, then deployed for precise and efficient repair work at the last second.

And it provided an excellent example of the ways drones are continually becoming part of how municipalities, states, police, fire, and emergency services, utilities, and other organizations are deploying the craft on a regular basis – and without the public having much knowledge of just how integral the craft have become to everyday life. https://dronedj.com/2021/08/30/phoenix-adds-safe-efficient-gas-leak-repairs-to-widening-use-of-its-municipal-drone-fleet/

SolarXOne: fully electric, solar-powered autonomous drone Bruce Crumley - Aug. 30th 2021

French company XSun specializes in solar-powered drones – and has produced an impressive craft. Its SolarXOne fixed-wing aircraft not only soaks up and stores the sun rays that power it, but also packs onboard tech that allows it to make its own decisions during flights.

SolarXOne drone looks a bit like a dragonfly featuring a tandem wing design that increases both its lift and the number of solar panels drinking up rays that drive the craft. Though fully sun-powered, the SolarXOne is something of a hybrid vehicle: part airplane, mostly drone, quasi-satellite with the tech punch it carries aboard.

The UAV weighs a total of 25 kg, has a wingspan of 4.5 meters, and maximum payload of 5 kg – which may include gyroscopes, high-performance thermal imaging cameras, LIDAR, and cutting-edge communications tech. With all that, it boasts a daily flight endurance of 600 km, or a

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nonstop range of 12 hours – day or night, thanks to cells that store solar energy for twilight missions.

XSun says the craft is programmable to be 100% autonomous during all flight phases and is adaptable to differing regulatory requirements around the world.

SolarXOne's flight time and onboard tech make it ideal for wide-ranging mapping and topography missions over both land and sea. Its high-resolution photographic capacities are angled for surveying large-scale linear infrastructure like pipelines, electricity networks, roadways, and rivers, as well as precision agriculture, forest, and natural reserve mapping. https://dronedj.com/2021/08/30/solarxone-fully-electric-solar-powered-autonomous-drone/#more-66262

31Aug21

Crop-Dusting Drone: the Roswell Flight Test Crew at Xponential 2021 [VIDEO]

Miriam McNabbon: August 30, 2021

Our friends from the Roswell Flight Test Crew were on the floor at AUVSI's Xponential 2021 – and in the episode featured below, they interview Sasha Mela at Venture Aerospace about the company's design for a 500-pound crop-dusting drone.

"Founded by NASA scientists, powered by brilliant young engineers, Venture Aerospace has developed new engines, new materials and new aircraft designs. The IP creates new ways of building all sorts of products, from generators and heavy lift drones to paddle boards and ultra-light powered autogyros," says Venture.

A crop-dusting drone has major advantages over manned aircraft. As regulations evolve to allow more applications in precision agriculture, the market for aircraft designed to provide longer flight endurance combined with precision and payload options is set to grow exponentially.

This new design from Venture could fill a market need. Capable of carrying a 500-pound payload, this giant is built of a light, bullet-resistant foam. While the prototype seen here is powered by batteries carried on an external rover to test the drone's aerodynamic properties, "the finished design will incorporate a fuel-agnostic diesel engine," says Patrick of Roswell Flight

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Test Crew. This prototype has a 16-foot wingspan and features a vertical take-off and landing design. https://dronelife.com/2021/08/30/crop-dusting-drone-the-roswell-flight-test-crew-at-xponential-2021-video/

Growing Demand for Drone Pilots in Agriculture 30 Aug 2021 Sarah Simpson

Image courtesy of FIXAR

The Crop Science Society of America encapsulates the contribution of drones to agriculture when they quote Tennessee State Professor Jason de Koff saying; "The easiest advantage of drones is that they can be a huge time saver. Rather than going out and scouting fields on foot or by truck, they can scout them with a drone in a lot less time and pinpoint specific areas that they might want to visit for closer inspection."

Current uses:

Precision fertilizer program planning: Drones are used to take hundreds of images of the developing crops to identify areas where there is a need to spray fertilizer.

Weed and disease control programs: Drones can identify where weeds are growing.

Tree mapping: Drones can be used to map the placement and health of orchard trees and timber farming.

Crop Spraying: Drones can be programmed to spray varying amounts depending on local needs.

Connecting Farmers with Drone Pilots

Image courtesy of Microdrones

Future uses:

Autonomous drones. Mission planning and flight control software will simplify and automate processes.

Drone swarms in the future. Working in organized swarms for fertilizer or crop spraying and to replicate the delicate act of pollination.

Importance and benefits of using experienced drone pilots. Using drone pilots registered with relevant civil aviation authorities ensures professionals with a working knowledge of agritech developments.

Drone Digital has launched a new booking website that will make it easy for to search, find, connect with, and book drone pilots.
https://www.unmannedsystemstechnology.com/2021/08/growing-demand-for-drone-pilots-in-

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agriculture/?utm_source=UST+eBrief&utm_campaign=ed57a9f4f0-ust-ebrief_2021-aug-31_engaged&utm_medium=email&utm_term=0_6fc3c01e8d-ed57a9f4f0-119747501

Oakland A's host Major League Baseball's first drone light show Bruce Crumley - Aug. 31st 2021

Traditional-bound baseball hosts its first-ever drone light show

The unprecedented MLB drone light show was hosted by the Oakland A's following their twilight game with the visiting New York Yankees. That innovation in baseball entertainment didn't get too wildly imaginative in its execution, however. It featured a favorite theme of special events across all ballparks – a Star Wars tribute – and called on accomplished drone light show company Sky Elements to work its aerial magic. Fan favorite characters such as R2-D2 and Yoda were featured as well as an exploding death star.

The Sky Elements team had a blast creating this drone show and ran with the concept of Star Wars and baseball, displaying the similarities between the two. Light sabers turning into baseball bats and a baseball turning into the Death Star are among some of the creative ideas that play out in the sky above Ring Central Stadium. It's unknown whether Mark Hamill – aka Luke Skywalker – is much of a baseball fan, but it's more than likely the Oakland-born actor approved of the galactic summertime tribute.

Sky Elements indicates it plans to make full video of the baseball's first drone light show available soon https://dronedj.com/2021/08/31/oakland-as-host-major-league-baseballs-first-drone-light-show/#more-66370

1Sep21

Drones help Duke Energy work safer, more efficiently Jessica Wells illumination Staff Writer July 20, 2021

Jackson Rollins manages Duke Energy's Unmanned Aerial Systems team, which has grown from two employees in 2015 to more than 40 as the company saw how drones could keep teammates safe and perform work that was

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previously impossible. In 2020, the team completed roughly 2,000 assignments.

Duke Energy plans to double its renewable energy portfolio by 2025 as part of its goal to reach net-zero carbon emissions by 2050. As it builds more solar facilities, drones can inspect the panels more quickly than traditional methods.

A pilot can fly a drone with an infrared camera over a field of panels, which will show faulty panels through heat signatures. If a panel is not converting sunlight to electricity efficiently, it will be hotter than a panel that's operating correctly and appear yellow.

Before drones, technicians would use a handheld thermal imaging device to test each section of a solar field, which can span hundreds of acres. By inspecting thousands of panels in minutes, drones help solve problems faster resulting in more clean energy generated.
https://illumination.duke-energy.com/articles/drones-help-duke-energy-work-safer-more-efficiently?utm_campaign=Energy%20Drone%20%26%20Robotics%20Coalition%20Content&utm_medium=email&_hsmi=154622715&_hsenc=p2ANqtz-8-rBEi6dNqdJeAvBgfXPhgum9AWL9lBA0kFmhS-2M_17sKWsEalSNFYVvMs6FZCq_dDyKZyF86pXRnAYEysppQSg6dgA&utm_content=154622715&utm_source=hs_email

PteroDynamics Secures Contract with US Navy for Cargo VTOL Aircraft

PteroDynamics, an aircraft design and manufacturing company that develops vertical take-off and landing aircraft, has announced that it has secured a contract with Naval Air Warfare Center Aircraft Division to deliver 3 VTOL prototypes for the Blue Water Maritime Logistics UAS program.

In 2018, Military Sealift Command and Fleet Forces Command identified a need for the US Navy to develop a capability to autonomously deliver cargo with an unmanned aerial system to and from ships at sea. Their analysis found that 90% of critical repair cargo delivered at sea by helicopters and V-22 aircraft weighed less than 50 pounds. A VTOL UAS can fill this critical need and free the manned aircraft to perform other higher priority missions.
https://www.uasvision.com/2021/08/25/pterodynamics-secures-contract-with-us-navy-for-cargo-vtol-aircraft/?utm_campaign=Energy%20Drone%20%26%20Robotics%20Coalition%20Content&utm_medium=email&_hsmi=154622715&_hsenc=p2ANqtz-

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Are flying cars finally ready to take off? INNOVATION OUR PEOPLE August 31, 2021

Is there a world in which your next trip to the grocery store involves a flying car? “Advanced air mobility is the next revolution in aerospace,” says Robin Riedel, a McKinsey partner and certified commercial airline pilot. “But it’s not going to be like you see in the movies.”

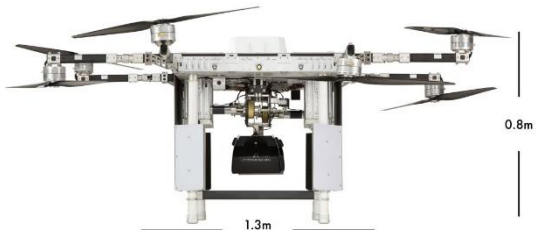
Advanced air mobility refers to an emerging industry comprising around 250 companies that are seeking to build electric flying vehicles—think cleaner, quieter, helicopters—as well as the infrastructure to use them in cities around the world.

We recently caught up with Robin and McKinsey partner Shivika Sahdev, both of whom are helping lead our work in this field, what to expect in the coming years, and whether or not a sci-fi future is on our horizon.

Robin: There’s been a convergence of several trends in recent years. First, on-demand services have changed the way we think about mobility. Second, there’s a focus on sustainability, which these vehicles support. Third, there’s a lot of funding available from investors who want to be a part of the next big thing. And lastly, the technology is finally there to do this at scale.

Shivika: Totally agreed, but the fundamental one for me is really battery technology. We are finally reaching the density and affordability of batteries where the physics and economics of powering one of these vehicles starts making sense. https://www.mckinsey.com/about-us/new-at-mckinsey-blog/are-flying-cars-finally-ready-to-take-off

A2Z launches multitasking RDSX delivery drone Bruce Crumley Sep. 1st 2021



A2Z Drone Delivery has built an aircraft around its patented tethered freefall aerial delivery mechanism. The result is the RDSX commercial delivery drone, whose dual payload and elevated package drop system allow mission efficiency while responding to consumer

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concerns about noise or privacy.

The company had previously supplied its tethered freefall mechanism to other delivery partners. With the RDSX, A2Z will permit clients to fly dual payloads of up to 2 kilograms each for round-trip missions of up to 18 kilometers. A single-drop payload configuration will extend that maximum range to 30 km.

The controlled-freefall delivery method allows packages to be dropped from up to 150 feet. The system's Kevlar tether and auto-release mechanism drops the payload and allows gravity to provide its rapid descent. An onboard computer and sensor platform detects when packages near the ground, easing them to a controlled, gentle stop before lowering them the remaining distance to the delivery point. Boxes used to secure and protect goods then release their contents on the ground for clients to collect and are swiftly reeled back for reuse.

In addition to making that last leg of delivery a faster, cheaper step in the process, maintaining the drone at higher elevations also responds to client concerns about noise and privacy. The RDSX provides solutions for companies making deliveries and people receiving them at the same time. https://dronedj.com/2021/09/01/a2z-launches-multitasking-rdsx-delivery-drone/#more-66450

NASA to measure noise footprint of Joby's all-electric air taxis Ishveena Singh Sep. 1st 2021

Joby Aviation and NASA are kicking off a two-week test campaign to study the acoustic signature of Joby's all-electric passenger aircraft. These tests come as part of a nationwide campaign launched by NASA to promote public confidence in emerging aviation markets including passenger air taxis.

Joby feels it's ready for the challenge – in line with its plans to operate as part of a commercial passenger service beginning in 2024. The company has, in fact, released several videos showcasing the quiet nature of its electric aircraft during take-off, hover, and overhead flight.

The upcoming tests, meanwhile, make Joby the first company to fly an all-electric vertical takeoff and landing aircraft as part of NASA's Advanced Air Mobility National Campaign. The tests will take place at Joby's Electric Flight Base near Big Sur, California. NASA engineers will

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deploy more than 50 pressure ground-plate microphones in a grid formation to measure sound emissions from multiple directions.

Using this data, NASA and Joby will generate noise hemispheres for the aircraft that capture the intensity and the character of the sound emitted in comparison to helicopters, drones, and other aircraft. These readings can be used to verify how proposed aircraft operations will blend into existing background noise. https://dronedj.com/2021/09/01/nasa-joby-noise-footprint-passenger-air-taxis/#more-66464

Red Cat Holdings Closes Acquisition of Teal Drones September 1, 2021 News

Red Cat Holdings, Inc. a hardware-enabled software provider to the drone industry, announces the closing of its acquisition of Teal Drones, a leader in commercial and government unmanned aerial vehicle technology.

Teal manufactures the Golden Eagle, one of only five drones approved by the U.S. Department of Defense for reconnaissance, public safety, and inspection applications.

"We can offer both consumer and enterprise drones with a suite of software and hardware options along with an approved line of military drones for public safety, reconnaissance and inspection applications," commented Jeffrey Thompson, Red Cat's Chief Executive Officer.

Teal, a Utah-based company founded in 2015, has grown from its origins as a consumer-oriented company into one focusing on the enterprise and government sectors. Its unmanned systems inform and protect Fortune 500 companies and government agencies with scalable, secure, and rugged drone technology. Teal's open and modular platform allows applications to be developed and integrated for next-generation capabilities. Partners actively integrating technologies with Teal include Autonodyne, Tomahawk Robotics, and DroneLink. https://uasweekly.com/2021/09/01/red-cat-holdings-closes-acquisition-of-teal-drones/?utm_source=rss&utm_medium=rss&utm_campaign=red-cat-holdings-closes-acquisition-of-teal-drones&utm_term=2021-09-01

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2Sep21

Northrop, Martin UAV Conduct Flight Test for Future Tactical Unmanned Aircraft September 2, 2021

Northrop Grumman and Martin UAV on Wednesday completed successful flight testing of a V-BAT unmanned aircraft system with new features including GPS-denied navigation and target designation capabilities.

For their Future Tactical Unmanned Aircraft System, the U.S. Army is seeking a rapidly deployable, GPS-denied navigation-capable, expeditionary VTOL system capable of persistent aerial reconnaissance for Brigade Combat Teams, Special Forces, and Ranger battalions.

The Martin V-BAT UAS is compact, lightweight, simple to operate, and can be set up, launched and recovered by a two-soldier team in confined environments. It is also designed with payload capacity to carry a range of interchangeable payloads including electro-optical/infra-red, synthetic aperture radar, and electronic warfare payloads. Additionally, Shield AI's recent acquisition of Martin UAV will enable rapid development of GPS-denied and autonomy capabilities for V-BAT through future porting of Shield AI's autonomy stack, Hivemind, onto V-BAT. https://www.defenseworld.net/news/30347#.YTDCM45KhPY

Drone Companies See Opportunities in B2B Middle-Mile Logistics Kelsey Reichmann September 1, 2021

Elroy Caparral

The logistics industry is seeing a big opportunity in the future use of drones. While some companies are targeting last-mile deliveries from businesses to consumers, others are looking towards the often overlooked middle-mile logistics deliveries that occur from business to business or distribution centers to stores.

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"Whereas last-mile delivery drones compete with courier-owned delivery vans and crowdsourced delivery models, middle-mile drones will compete with semi-trucks and intermodal freight networks," Dario Constantine, a senior associate at Levitate Capital focused on drone technology companies, writes in "The Future of the Drone Economy."

The cost of logistics is dependent on the amount of freight moved at one time. As freight in transferred along its journey, the cost increases as the vehicle that carries it gets smaller. "As a result, drones in the near term are likely to be more expensive per kg-mile than fully loaded trucks. However, middle mile drones can reduce the hours of transportation and handoff times associated with trucks and other ground vehicles and transfer the economic value of time savings to the sender and receiver."

Companies developing drones have taken notice of this trend with some creating aircraft specifically geared towards middle mile operations. Elroy Air is developing a vertical takeoff and landing cargo done, Chaparral, for this sector. https://www.aviationtoday.com/2021/09/01/drone-companies-see-opportunities-b2b-middle-mile-logistics/

Congested Area OSC Enabled Lloyd's of London Drone Inspection GEORGINA FORD SEPTEMBER 2, 2021

"Simply put, this job would not have been possible without an Operating Safety Case."

That's the verdict of digital services company, **The Virtulab** after completing a drone inspection of the iconic Lloyd's building in the heart of London.

The team used a **heliguy-supplied** DJI M210 RTK with X7 camera to collect quick, accurate and consistent data – eliminating the need for time-consuming and potentially dangerous manual checks via rope access. The operation all hinged on the OSC, which enabled the mission to occur within the City of London – the capital's central financial district.

Thanks to the Operating Safety Case, The Virtulab was not only permitted to operate in such a congested area but was also able to reduce its operational distances to five metres for takeoff and landing and 10 metres in flight! https://www.commercialdroneprofessional.com/congested-area-osc-enabled-lloyds-of-london-drone-inspection/

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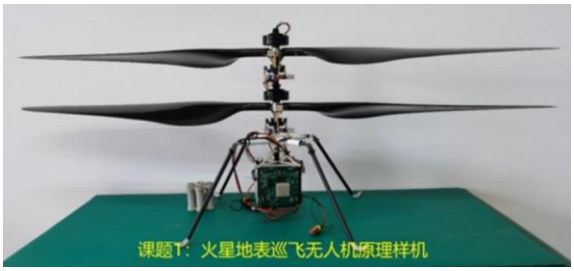
China is developing its own Mars helicopter Andrew Jones — September 1, 2021



The Mars surface cruise drone prototype developed by China's NSSC.

HELSINKI — China is looking at ways of expanding its space exploration capabilities including through a vehicle similar in appearance to NASA's Ingenuity helicopter.

A prototype of "Mars surface cruise drone" passed a final acceptance review Aug. 20, the National Space Science Center under the Chinese Academy of Sciences announced Wednesday. The rotorcraft was one of three projects in a technology cultivation program promoted by the NSSC. The vehicle project was led by Bian Chunjiang of the NSSC and features a micro spectrometer. The concept could be considered for future Chinese Mars exploration, but the NSSC did not identify a mission on which the drone may fly.

China's first Mars mission, Tianwen-1, entered orbit around the Red Planet in February. This feat was followed by a successful landing of the roughly 240-kilogram, solar-powered Zhurong rover in May. China's next Mars mission is currently listed as a sample return mission, launching in the 2028 or 2030 launch windows. https://spacenews.com/china-is-developing-its-own-mars-helicopter/

Wing Drone Delivery: 100,000 Deliveries and Happy Customers [VIDEO] Miriam McNabb September 01, 2021

Where regulations allow, drone delivery is taking off – and, as research from Virginia Tech shows, residential customers love it. Wing calls Logan, Australia the drone delivery capital of the world: Logan residents have ordered and received more than 50,000 deliveries directly to their homes.

Wing serves Logan and 19 suburbs – a combined population of more than 110,000 people. "Logan residents ordered **almost 4,500 deliveries in the first week of August,** meaning that a Logan resident on average received a drone delivery nearly once every 30 seconds during our service hours," says Wing.

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Wing says that the Logan operation represents the reality of drone delivery, beyond all the drone delivery trials currently taking place around the world: not only does the volume represent a significant data set, but it's a live, automated, and on-demand service. "When an order comes in, Wing's software systems send the best aircraft to perform the delivery from among Wing's multiple operations sites. Then, our systems use data about the operational environment–Wing's software performs and analyses 15 million simulations each day to analyze changes in weather and terrain, stress test our delivery systems and continually improve our routing–to create a custom, optimal path for the aircraft to follow to the very spot the customer selects for delivery, either at their home or in some cases, their office."
https://dronelife.com/2021/09/01/wing-drone-delivery-100000-deliveries-and-happy-customers-video/

Swoop Aero eyes safer BVLOS drone delivery with Iris Automation detect-and-avoid tech Ishveena Singh Sep. 2nd 2021

Drone logistics company Swoop Aero and drone safety technology firm Iris Automation are joining forces to offer safety-focused beyond visual line of sight drone delivery solutions to clients across the globe.

The announcement comes in the wake of Swoop Aero's recent unveiling of a new aircraft, Kite. According to the Australia-based company, Kite is the most advanced aircraft in its category to progress through the Federal Aviation Administration certification program in the US. As part of its safety features, Kite supports the integration of Iris Automation's Casia detect-and-avoid technology which detects other aircraft and makes intelligent decisions about the threat they may pose to the drone.

It's worth noting that Swoop Aero recently announced medical supply delivery operations with EBOS Healthcare in Australia and joined New Zealand's Ministry of Business, Innovation, and Employment airspace integration trial program. Both operations incorporate the Casia system to trigger automated maneuvers to avoid collisions, as well as to alert the pilot in command of the mission. https://dronedj.com/2021/09/02/swoop-aero-iris-automation/#more-66516

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BlueHalo Announces Release of WP-V3 Atmospheric Characterization Payload

September 2, 2021 News

BlueHalo unveiled their state-of-the-art Atmospheric Characterization Payload unmanned aerial system sensor suite. The WP-V3 ACP is a complete, customizable meteorological sensor suite for making low-Earth atmospheric measurements from a wide array of UAS platforms. This instrumentation is used to make multiple calculations of optical turbulence, an important metric for understanding high-energy laser propagation through the atmosphere and for other applications such as forecasting and monitoring wildfires.

The WP-V3 ACP features the TriSonica Sphere Wind Flux Sensor developed by Anemoment, LLC, a specialized meteorological instrument design firm. The TriSonica Sphere Wind Flux Sensor is Anemoment's newest 3-D sonic anemometer. Engineered to deliver more precise vertical wind measurements, coupled with faster sampling rates), the TriSonica Sphere is ideal for UAS-based atmospheric flux and turbulence research, including eddy covariance studies.
https://uasweekly.com/2021/09/02/bluehalo-announces-release-of-wp-v3-atmospheric-characterization-payload/?utm_source=rss&utm_medium=rss&utm_campaign=bluehalo-announces-release-of-wp-v3-atmospheric-characterization-payload&utm_term=2021-09-02

3Sep21

Chinese UAVs fly near Japan as new models abound 1st September 2021 Gordon Arthur in Christchurch

A rear view of the TB001 UAV from Tengden, of the type spotted by the Japanese military over the East China Sea

The Joint Staff Office of the Japanese MoD has publicized the fact that a Chinese **TB001** MALE UAV flew near Japanese territory on 24 August, prompting Japanese fighters to scramble.

This twin-tailed Scorpion UAV is not believed to be in the People's Liberation Army service yet, so its presence over the East China Sea far from the Chinese coast was intriguing. It flew towards Okinawa and Miyako Island in the Ryuku Islands chain, before turning for home.

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Tengden is a mysterious company that sprang from nowhere in January 2016. Within just months, its TB001 platform achieved its maiden flight on 26 September 2017.

TB001 has a retractable undercarriage. It is 10m long and 3.3m high, with a maximum altitude of 8,000m. Tengden also makes the smaller TA001 which carries a 300kg payload. On the same day as the Japan Air Self-Defense Force intercepted the TB001, another flight of Chinese military aircraft comprising a **BZK-005** UAV and two **Y-9** special mission aircraft approached Japan. These overflew the Miyako Strait between Okinawa and Miyako Island, flying into the Western Pacific. According to the photo released by the Japanese MoD, the BZK-005 has been upgraded for wide-area ISR. https://www.shephardmedia.com/news/air-warfare/chinese-uavs-fly-near-japan-new-models-abound/?utm_source=Newsletter&utm_medium=email&utm_content=This+Week+s+Defence+News+Highlights&utm_campaign=Newsletter%3A+Weekly+News+Highlights+%283+Sep+Send%29

DroneDeploy Offers Free Software for Hurricane Relief

Miriam McNabb September 02, 2021 by DRONELIFE Staff Writer Ian Crosby

DroneDeploy has announced it will be providing free software access to any organization or government agency involved in conducting drone-powered response efforts in the areas impacted by the ongoing disaster caused by Hurricane Ida. With the stated mission of making drone data more accessible and available for everyone, the California based company is responsible for the leading cloud software program for commercial drones. Their software is used in more than 180 countries worldwide, and their customers have mapped 200 million acres.

DroneDeploy is no stranger to aiding disaster response teams. The company has plenty of previous experience supporting disaster relief efforts with advanced mapping, post-disaster inspections, and incident reporting via drone, proving particularly helpful in dealing with difficult to reach and unsafe areas. In 2020, the company's nonprofit branch partnered with Disaster Relief Australia, providing the organization with access to aerial imagery capture technology. In the year prior, their aerial mapping software was utilized in disaster response and damage assessment efforts following the deadly Camp Fire in California. The company's

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nonprofit branch has partnered with more than 200 universities, as well as over 80 nonprofit organizations. https://dronelife.com/2021/09/02/dronedeploy-offers-free-software-for-hurricane-relief/

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