



UAS and SmallSat Weekly News

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Lockheed Locking In First Fury UAV Customer

Apr 26, 2017 [James Drew](#) | *Aerospace Daily & Defense Report*



NASHVILLE, Tennessee—[Lockheed Martin](#) is finalizing the sale of six Fury UAVs to an undisclosed Middle East customer. The company is responding to a sole-source request for proposal for the initial batch of middleweight unmanned aircraft, potentially resulting in the first direct commercial sale of Fury.

Lockheed Martin Unmanned Systems San Luis Obispo site director Brendan Rhatigan tells Aviation Week in an April 26 interview that if the sale proceeds, all six aircraft could be built by late October. Lockheed will support training and prepare the system for initial operations, but responsibility for day-to-day use eventually will transition to the new owner.

The four test vehicles collectively have logged more than 400 flight hours. “We’ve flown as many hours in the last 8-9 months as in the prior three years,” Rhatigan says.

Fury is advertised to fly for 15 hr. carrying a 100-lb. payload. The aircraft demonstrated 12 hr. of endurance during a recent demonstration for the Army at Dugway Proving Ground in Utah. It landed with one hour’s worth of fuel unspent—still 2 hr. short of Lockheed’s endurance goal.

<http://aviationweek.com/defense/lockheed-locking-first-fury-uav-customer>

FAA-Commissioned Report: UAVs “Far More Safe” Than Previously Assumed.

[Digital Trends](#) (4/29) reported that new findings prepared for the FAA conclude that small UAVs are much safer “to operate around people than earlier models had assumed.” According to the report by the Alliance for Safety System of UAS through Research Excellence (ASSURE), today’s UAV’s feature “unique aerodynamic and structural properties that mitigate the force involved in a

collision.” [Aviation International News](#) (4/28) reported that the “FAA plans to incorporate the findings in a regulation governing flights of small drones over people, which is currently not allowed.”

FAA Tests UAV Detection Technologies.

The [Dallas Morning News](#) (4/28) reported that the FAA and several partners have been testing UAV identification and location technology at Dallas/Fort Worth International Airport in “the sixth and final in a series of tests around the country.” FAA Deputy Regional Administrator Michael O’Harra said, “The bottom line is that anyone who flies a drone in and around the airspace near airports can pose a serious safety risk.” [GPS World](#) (4/28) reported that the “FAA intends to use the information...to develop minimum performance standards for any UAS detection technology that may be deployed in or around US airports.”

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Industry, Regulators Edge Closer To Beyond Line Of Sight UAS

Barriers to longer missions that unlock the benefits of small unmanned aircraft are beginning to be dismantled *Apr 28, 2017* [Graham Warwick](#) and [John Croft](#) | *Aviation Week & Space Technology*

An [AeroVironment Puma AE](#) small unmanned aircraft inspected a dozen miles of power lines in rural Virginia in April to demonstrate flights beyond the operator’s line of sight. The [FAA](#) issued a “Drotam” to alert other airspace users, the aircraft carried three different communications links, and the inspections were performed under the watchful eye of a Robinson R44 helicopter.

Such is the reality for beyond-visual-line-of-sight (BVLOS) operations. While the use of small unmanned aircraft systems (UAS), or drones, is becoming routine, it is strictly limited to daylight, below 400 ft. and within visual line of sight in the U.S. and other countries. The FAA does grant waivers to the limits of its Part 107 small UAS rule. So far, 21% of requests are for BVLOS operations versus 65% for use at night.

But the drone industry is pushing to be allowed off the leash and beyond line of sight. It sees the enhanced capability as unlocking the economics of unmanned aircraft to perform tasks such as pipeline, power-line and infrastructure inspections, agricultural surveys and other missions where UAS promise lower costs and higher safety and efficiency than manned aircraft or ground teams.

The Puma tests near Dillwyn, Virginia, involved Dominion Power, which is interested in BVLOS for power-line inspections, particularly after storms. The utility uses VLOS drones for niche inspections but helicopters for detailed inspections of power-line towers and routine surveys of transmission lines between substations approximately 50 mi. apart. Dominion inspects its 6,500 mi. of high power lines at least once a year, looking for leaning trees or broken components.



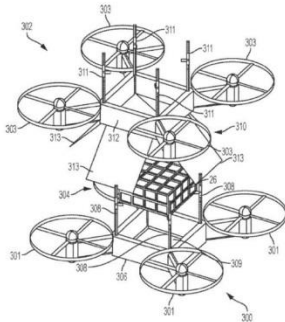
ArcticShark UAV To Monitor Atmosphere Following Military Origin As TigerShark.

[Wired](#) (5/1) reports that the US Department of Energy scientists at Pacific Northwest National Laboratory plan to use an ArcticShark UAV – based on the TigerShark designed for military applications – to measure data in the Arctic atmosphere. Navmar Applied Sciences Corporation originally developed the UAV for anti-submarine and bomb-detection missions, but turned its attention to other applications as operations in Iraq and Afghanistan wound down, leading to a contract for the ArcticShark last year. Modifications for the Alaska operations include special grease and a heater for the low temperatures. Operations are planned to begin next May. <https://www.wired.com/2017/05/drone-fought-wars-now-fighting-climate-change/>



New IBM Invention Transfers Packages Between Drones During Flight

30 Apr 2017



[IBM](#) has announced that its inventors have been granted a patent for transferring packages between drones during flight. The invention described in US Patent No. 9,561,852, "In flight transfer of packages between aerial drones," helps to extend the range of drones that are delivering packages from a warehouse to a customer's home. IBM inventors developed this patented system using their supply chain expertise to enable precise delivery services to customers using drones.

Drones are starting to be used to transport packages to customer locations, but there are still numerous challenges to this delivery method, such as limited flight range, theft of unattended packages once delivered, and a lack of delivery network optimization. This invention can help to mitigate these challenges by providing in-flight drone-to-drone package transfers to extend package delivery range.

For example, a customer expecting a package could dispatch a personal drone to receive and securely deliver the package to the customer's home. Drone delivery network optimization could be provided to autonomous drones via the communications link described in the patent.

"Drones have the potential to change the way businesses operate and by leveraging machine learning, drones could change ecommerce," said Sarbajit Rakshit, IBM Master Inventor and co-inventor on the patent. "Our inventor team is focused on improving how the most valuable cargo is delivered globally. This could create opportunities such as managing drones to deliver postal packages and medicine in developing countries via the most direct route."

<http://www.unmannedsystemstechnology.com/2017/04/new-ibm-invention-transfers-packages-drones-flight/>

FAA Releases First Set of UAS Facility Maps 26 Apr 2017



The [Federal Aviation Administration](http://www.faa.gov/) (FAA) has announced that it has published more than 200 [facility maps](#) to streamline the commercial drone authorization process. The maps depict areas and altitudes near airports where unmanned aircraft systems (UAS) may operate safely. Drone operators will still require FAA authorization to fly in those areas.

This marks a key first step as the FAA and industry work together to automate the airspace authorization process. The maps will help drone operators improve the quality of their Part 107 airspace authorization requests and help the FAA process the requests more quickly. The maps are informational and do not give people permission to fly drones. Remote pilots must still submit an online airspace authorization application.

Operators may download the map data in several formats, view the site on mobile devices and customize their views. The map viewer displays numbers in grid cells which represent the distances Above Ground Level (AGL) in one square mile up to 400 feet where drones may fly. Zeros indicate critical locations around airports and other aircraft operating areas, like hospital helipads, where no drone flights can be preauthorized. Requests to operate in these areas will require further coordination and FAA safety analysis, which can result in additional safety mitigations to be complied with by the drone operator. Remote pilots can refer to the maps to tailor their requests to align with locations and altitudes when they complete airspace authorization applications. This will help simplify the process and increase the likelihood that the FAA will approve their requests. <http://www.unmannedsystemstechnology.com/2017/04/faa-releases-first-set-uas-facility-maps/>

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THE SKY'S THE LIMIT FOR MEDICAL DELIVERY DRONES

BY [TROY TURNER](#) 05/02/2017



Taking inspiration from Airbus' existing family of cutting-edge aircraft, the Airbus A-180 Drone project looks a lot like something that might already exist in their modern fleet! However, the scaled-down design is less concerned with moving people and more about helping them during emergencies.

To deliver a payload of emergency supplies, it utilizes three double engines – one at the rear for forward thrust and two integrated in the wings for upward and downward maneuvering. Able to take off and land vertically or horizontally, it can safely enter danger zones. Upon arrival, it releases a cargo capsule capable of transporting everything from medicine and antivenin to supplemental blood and even organs. <http://www.yankodesign.com/2017/05/02/the-skys-the-limit-for-medical-delivery-drones/>

Boulder unmanned aircraft company selected for NASA volcano-research contract By [Jensen Werley](#) — May 1, 2017

BOULDER — NASA has awarded Black Swift Technologies, a specialized engineering firm, a contract to develop and deliver a drone platform to explore volcanoes. The research will be used to improve air-traffic-management systems and the accuracy of ashfall measurements.

Boulder-based BST will deliver a small unmanned aerial system that includes an airframe, avionics and sensors specific to measuring temperature, pressure, humidity, particle sizing and trace gases.

BST will build two fixed-wing aircraft, each with a wingspan of about 10 feet, said CEO Jack Elston. It will take about two years to design, build and test the aircraft, which will be done in Colorado. "We're testing in a mountainous region to make sure it can operate in rough terrain," Elston told BizWest, "where it's not so easy to launch or recover an aircraft."

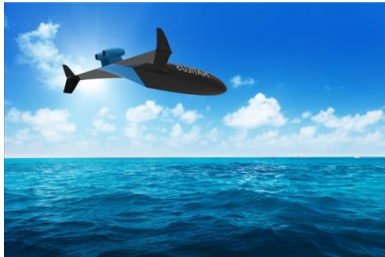
The unmanned aerial system is specifically designed to carry scientific equipment as its payload, loading it near the nose of the plane. The aircraft BST is using is actually a modification from another project they did under a NASA grant that measured soil moisture from the air. It should have a flight time of about three hours on a single battery.

<http://bizwest.com/2017/05/01/boulder-unmanned-aircraft-company-selected-nasa-volcano-research-contract/>

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These Giant Drones Could Seriously Disrupt the Shipping Industry

by DAVID FREEMAN



Unmanned aerial vehicles, [or drones](#), are now used for all sorts of things, from taking out terrorists to delivering take-out. Now a tiny start-up in California's Bay Area is working on what it hopes will be the next big thing: large autonomous drones capable of moving freight across the Pacific Ocean more cheaply than conventional piloted cargo planes and faster than cargo ships.

Natilus Inc., of Richmond, Calif., is building a 30-foot prototype drone that could take to the air for the first time later this year. If all goes as planned, the firm will develop an 80-foot drone that will begin flying routes from Los Angeles to Hawaii in 2019. A 140-foot drone with a 200,000-pound cargo capacity could be flying routes to China starting in 2020.

Made of carbon fiber composites and powered by jet engines, the drones would take off from the water, eliminating the need for landing gear and long landing strips. It would land on water several miles from port before taxiing to the dock, where cranes would unload the cargo. The amphibious drones would cruise at an altitude of about 20,000 feet and would fly slower than piloted cargo planes.

Shipping 200,000 pounds of freight from Los Angeles to Shanghai via drone, for example, would take about 30 hours at a cost of about \$130,000, the company says. Delivery of the same cargo by a Boeing 747 takes about 11 hours and costs about \$260,000. (Moving the same cargo to Shanghai by ship would cost about \$61,000 but would take three weeks.)

<http://www.nbcnews.com/mach/innovation/these-giant-drones-could-seriously-disrupt-shipping-industry-n741981>

NIAS To Test UAV Traffic Management Systems Later This Month.

[Wired](#) (5/3) reports that the Nevada Institute for Autonomous Systems (NIAS) – the largest of the FAA's seven UAV test sites – is planning to participate in a "Technical Capability Level" evaluation later this month at its Reno facility. [Wired](#) reports that the evaluation will include tests of various "traffic management systems on fixed-wing airplanes and multirotor copters, with flights up to 1,200 feet altitude and across several miles of approved airspace." Researchers will conduct package delivery, long-distance aerial survey, and emergency response missions, and will also test ground-based sense-and-avoid systems.



New York County Hosts UAS Technical Interchange Meeting. The [Rome \(NY\) Sentinel](#) (5/3) reports that the Oneida County Department of Aviation hosted an FAA UAS technical interchange meeting recently, which the agency used as a chance to “provide updates to the seven unmanned aircraft system test sites and discuss common areas of research interest.” County Aviation Commissioner Russel Stark said that the two-day event also gave the county “an opportunity to showcase not only our airport, but also our UAS...operations center and infrastructure to the representatives of the FAA UAS Integration office and those from the other six UAS test sites from around the country.”

Company Granted First-Of-Its-Kind FAA Approval To Fly UAVs On Las Vegas Strip.

The [Las Vegas Review-Journal](#) (5/3) reports that aerospace and remote sensing services company AviSight has become the first firm to win FAA approval to fly UAVs on Las Vegas’ resort corridor, including the Strip. AviSight’s Vice President of Technology William O’Donnell said that the approval came this week after months of waiting, and that the company may begin flights this week or next week and eventually plans to do surveying work for construction projects. FAA spokesman Ian Gregor said that “several entities” have permission to fly in the area, but AviSight can now “potentially fly in several locations adjacent to the Strip, while the other companies are generally limited to one location.” The FAA still must grant approval for each flight operation.



Jason Drotman of System Integration Plus, left, and William O’Donnell, vice president of technology at AviSight, pose for a photo with a drone carrying their Ranger 30x optical zoom camera at the Commercial UAV Expo at MGM Grand in Las Vegas,

SpaceX Details Plan To Launch Thousands Of Satellites Starting In 2019.

[USA Today](#) (5/3) reports that SpaceX Vice President of Satellite Government Affairs Patricia Cooper told a Senate panel Wednesday that the company plans to launch 4,425 **small satellites** beginning in 2019 to establish a global “space-based broadband network,” with full deployment of the constellation expected by 2024. Cooper, appearing in front of the Senate Committee on Commerce, Science and Transportation, explained that the company plans to utilize the cost savings from the Falcon 9’s reusability to deploy the system, and plans to launch prototype satellites late this year and

early next year. SpaceX “will be involved in design, development, production, launch, and ultimately operation of the constellation.”

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Huerta: FAA Open To Discussing Jurisdictional Issues Over UAVs.

[Aviation International News](#) (5/4) reports that FAA Administrator Michael Huerta said during this week’s Drone Advisory Committee meeting that the agency is “open to discussing jurisdictional issues with state and local governments when it comes to regulating small drones.” Huerta said that even though he has a “very clear sense of what existing FAA authorities are [and] what our process are to enforce them,” he doesn’t “have a great deal of clarity in [his] mind as to what state and local and government entities would desire to regulate.”