17Sep16

# FAA contemplating whether millions of drones will fill skies

By JOAN LOWY Associated Press

WASHINGTON (AP) — So many people are registering drones and applying for drone pilot licenses that federal aviation officials said Friday they are contemplating the possibility of millions of unmanned aircraft crowding the nation's skies in the not-too-distant future. In the nine months since the Federal Aviation Administration created a drone registration system, more than 550,000 unmanned aircraft have been registered with the agency, said Earl Lawrence, director of the FAA's drone office. Speaking at the first meeting of a new government-industry drone advisory committee, Lawrence said new registrations are coming in at a rate of 2,000 a day. By comparison, the FAA says there are 260,165 manned aircraft registered in the U.S.

The FAA began issuing drone pilot licenses to commercial operators less than a month ago. Already, 13,710 people have applied to take the pilot exam, and 5,080 have passed it, Lawrence said. It's clear the agency's estimate of 15,000 licensed drone pilots by the end of 2016 will easily be exceeded, he said. The FAA now forecasts there will be more than 1.3 million licensed drone pilots by 2020. U.S. drone sales are expected to top 2.4 million aircraft this year, more than double last year's sales, according to the Consumer Technology Association, whose members include drone manufacturers.

NASA is working with industry and the FAA to create a new low-altitude air traffic control system specifically for drones. Industry and government officials say such a system will be needed if there are to eventually be widespread drone deliveries by Amazon and other companies. Google and the Chipotle Mexican restaurant chain are currently testing drone deliveries of burritos at Virginia Tech.

http://pilotonline.com/news/government/politics/nation/faa-contemplating-whether-millions-of-drones-will-fill-skies/article_21c393c7-22ad-59d5-8ab7-39917e7ceac7.html

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## Drone World Expo To Feature Commercial UAV Applications.

Aviation International News (9/16) reported that Drone World Expo will be held November 15 and 16 in San Jose, California, and will feature “more than 100 industry experts.” UAV applications in “imaging, construction, photography and video, precision agriculture, security, public safety, mapping and surveying, inspections, research and conservation, communications, parcel delivery and humanitarian efforts” will be represented at the expo. The list of applications is getting longer…

## SkySkopes, Sharper Shape Seek UAV Beyond-Line-Of-Sight FAA Exemptions.

ABC News (9/18) reports that several commercial UAV operators, including SkySkopes and Sharper Shape, are pursuing FAA exemptions that would allow the companies to operate UAVs beyond the line of sight. The FAA has until now only issued such exemptions to three companies, all of which participated in a year-long pilot program: CNN, BNSF Railway, and PrecisionHawk. According to SkySkopes’ President and CEO Matt Dunlevy, it is “extremely important” that the FAA issue more waivers. Dunlevy said, “That is the silver bullet that’s really going to unlock the potential in our industry.”

## Williams Mullen Announces Launch of Unmanned Systems Association of Virginia

Attorney Kevin Pomfret to Serve as Interim Executive Director

By: Kevin D. Pomfret & Patrick A. Cushing

Yesterday, several companies announced the formation of the Unmanned Systems Association of Virginia (USAV), which will seek to "promote a legal and regulatory framework that supports innovation, collaboration and growth in the unmanned systems industry in the Commonwealth." Leading the effort for Williams Mullen are attorneys Kevin Pomfret and Patrick Cushing. The USAV was formed with support and encouragement from Governor McAuliffe and U.S. Senator Mark Warner.

Kevin will serve as the Interim Executive Director of the USAV, while Patrick will serve as one of the association's registered lobbyists before the Virginia General Assembly and Administration. A team from McGuireWoods Consulting will also support the management of the association as well as share in lobbying responsibilities. The organization's mission will be to help grow the unmanned systems industry in Virginia through "advocacy efforts focused on economic and workforce development, financial incentives and a business-friendly regulatory environment."

For more information on the USAV, visit their website at http://unmatchedva.org.

https://sites-williams-mullen.vuturevx.com/68/1402/september-2016/williams-mullen-announces-launch-of-unmanned-systems-association-of-virginia.asp?sid=351fa728-a29b-45c6-a472-9e14d98ab4c1

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## GoPro Unveils Karma Quadcopter UAV.

The Los Angeles Times (9/19) reports that GoPro finally has unveiled its Karma quadcopter UAV. The Times quotes GoPro CEO Nick Woodman, who said that the Karma is "so much more than a drone – it's Hollywood-caliber stabilization in a backpack you can wear during any activity." The Karma is designed to take photos and video footage from above, controlled by its operator through a smartphone app. It retails from $799, sold separately from the GoPro camera and video recorder.

## GoPro Offers New Cameras and a Drone

Action-camera maker looks to turn sales around after last year's flop.

By Georgia Wells Sept. 19, 2016 3:02 p.m. ET

GoPro Inc. on Monday unveiled two new cameras and its first drone, launches that are expected to test whether the action-camera maker can jump-start growth. The company's new flagship camera, the Hero 5 Black, is destined for its core audience of extreme athletes and includes a 2-inch touch display. Its new smaller, cube-shaped entry-level camera, the Hero 5 Session, shoots lower-resolution photos and is

intended for more conventional uses, such as urban settings and family events. GoPro said the Hero 5 Black will sell for $399 and the Hero 5 Session will cost $299.

In a presentation at a ski resort in Squaw Valley, Calif., GoPro emphasized features that make the cameras simpler to use than previous models. The same principle applies to the $799 drone, called Karma, which folds to fit into a backpack. Much is riding on the new products: Mr. Woodman said in July that he expects GoPro to swing back into the black with the two launches, which are pegged to arrive in time for the holiday shopping season.

http://www.wsj.com/articles/gopro-introduces-new-cameras-debuts-drone-1474311735?mod=LS1

## Washington State UAV Council Holds First Meeting.

GeekWire (9/19) reports that government officials in Washington State held the first meeting of the Unmanned Systems Industry Council, which focuses on UAVs and related businesses. Washington State Department of Commerce Director Brian Bonlender said, “Focusing on this isn’t just about aerospace and UAVs, it’s about a whole variety of industries that benefit.” GeekWire notes that Seattle-based Amazon is leading efforts in UAV-based deliveries, while Boeing subsidiary Insitu supplies UAVs to the US military. Other Washington State UAV companies include Applewhite Aero, Echodyne, and Freefly Systems.

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## DARPA’s HACMS Project Creates Hacker-Proof Code For UAVs.

Quanta Magazine (9/20) reports on the development of “hacker-proof” code developed by DARPA through its High-Assurance Cyber Military Systems (HACMS) project for use in unmanned systems. The code defeated a “‘Red Team’ of hackers” tasked to breach the computer system of the “Little Bird” unmanned military helicopter built by Boeing

## Kazakhstan Engineering, Elbit Systems In Negotiations For UAV Facility.

IHS Jane’s 360 (9/20) reports that state-owned Kazakhstan Engineering and Elbit Systems are expected to sign a deal for assembly of Skylark and Hermes UAVs in the country. A representative from Kazakhstan Engineering said that the company is in the process of obtaining equipment and a license for a facility that initially could produce five to ten UAVs per year.

## Aurora, Air Force Exploring Applications For Orion UAV.

Aviation Week (9/20) reports that Aurora Flight Sciences CTO Tom Clancy, speaking at the Air Force Association’s Air, Space and Cyber Conference, announced that Aurora and the US Air Force “are looking at maritime patrol applications for Orion, both domestic and international. ... We’re looking at ground surveillance and maritime domain awareness. Those are missions we’re very interested in.” The Orion UAV broke endurance records for unmanned aircraft in its class in 2014, flying 80 hours nonstop during testing.

## Virginia UAV Companies Form USAV.

Citybizlist (9/20) reports on the newly-formed Unmanned Systems Association of Virginia (USAV), formed from Virginia companies “involved in the development, production and deployment of unmanned systems.” Founding companies include Dominion Virginia Power, Raytheon, Newport News Shipbuilding, and SAIC. According to the USAV, its purpose is to “foster the growth of the unmanned systems industry in Virginia through advocacy efforts focused on economic and workforce development, financial incentives and a business-friendly regulatory environment.”

## DARPA Seeking Counter-UAS Surveillance System

By AUVSI News posted 2 days ago

DARPA has unveiled Dragnet, a counter-UAS concept that would use persistent surveillance by unmanned aircraft to try to find other UAS that pose threats in complicated urban environments. Through a Broad Agency Announcement, DARPA is calling on industry to create a "threat-agnostic non-line-of-sight" surveillance system, which would would eliminate potential advantages that adversarial UAS have when they attempt to use their surroundings as ways to thwart detection.

All potential proposals will have three basic requirements: signal processing algorithms for NLOS detection, tracking, and classification of small UAS; sensor subsystems using low size, weight and power (SWaP) commodity components suitable for mounting on airborne platforms; and a networked multiplatform system for autonomously generating and disseminating a common operational picture (COP) to ground forces in the coverage area. Some components are ready for small UAS today, while others will be available in the future. For the program, designers are expected to improve upon current UAS technology, as opposed to creating their own systems.

http://www.auvsi.org/blogs/auvsi-news/2016/09/19/darpa-seeking-counter-uas-surveillance-system

## Landmark UAS Delivery Made by University of Maryland

The University of Maryland Unmanned Aircraft Systems (UAS) Test Site and the University of Maryland Shore Regional Health recently completed the first successful delivery of simulated medical cargo using an UAS. Using a Talon 120LE fixed wing aircraft, which weighed 22 pounds at takeoff and can fly for more than two hours, the aircraft flew 12 miles, launching from Lusby, Maryland and landing in Cambridge, Maryland.

"This is a major achievement for our test site and for the University of Maryland," said Darryll J. Pines, Dean of the A. James Clark School of Engineering. "What this flight demonstrates is the incredible potential that UAS have in assisting first responders in emergencies. As more of these aircraft enter the skies, demonstrations of their use in service to humanity will grow substantially." Chief Medical Officer and Senior Vice President of Medical Affairs at Shore Regional Health Dr. William Huffner, added, "Through this partnership with the University of Maryland Unmanned Aircraft Systems Test Site, Shore Regional Health was able to explore new ways of providing access to medical care to rural areas of the eastern shore. Being on the forefront of innovation and technology will help Shore Regional Health continue to be the region's leader in patient centered health care."

According to Matthew Scassero, the Director of the UMD UAS Test Site, the Talon 120LE was chosen because of its "payload capacity, stability and reliability." Scassero also emphasized the importance of using unmanned systems going forward in the future. "Using UAS for cargo will allow them to operate in tandem with manned aircraft to work together for these types of humanitarian missions and others, such as search and rescue," he said. Video of the flight can be seen here.

http://www.auvsi.org/blogs/auvsi-news/2016/09/20/landmark-uas-delivery-made-by-university-of-maryland

## First FAA-approved drone delivery takes medicine to rural Virginia

Samantha Masunaga, Contact Reporter July 20, 2015

Days after the first Federal Aviation Administration-approved drone delivery successfully dropped off medicine at a Virginia health fair, researchers behind the mission are already looking ahead to future uses of this technology -- in humanitarian crises. The delivery Friday took 24 packages of medicine and other medical supplies to an annual health fair in Wise County, Va., in the middle of coal country in Appalachia. Medical supplies are usually driven on mountain roads to the location, which can take an hour and a half to reach, said Jon Greene, associate director of the mid-Atlantic aviation partnership at Virginia Tech, a partner in the event.

The medications' journey started in Tazewell County in southwest Virginia, where they were flown in a NASA aircraft that can be remotely operated from the ground, though it always has a safety pilot on board. After the NASA aircraft landed at Lonesome Pine Airport in Wise County, a hexacopter drone operated by Australian start-up Flirtey Inc. flew the supplies 0.7 miles to the health clinic. A one-way flight to the clinic took only 2 1/2 minutes, and it took three trips to deliver all the packages, said Matt Sweeny, chief executive of Flirtey.

"I think this will be remembered as a Kitty Hawk moment," he said of the drone delivery by citing the location of the Wright Brothers' first powered flight. "I'm really happy about how well it went."

http://www.latimes.com/business/la-fi-drone-delivery-20150720-story.html

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## Smith Discusses FedEx UAV, Automation Projects.

The Memphis (TN) Daily News (9/21) reports FedEx Chairman, President, and CEO Fred Smith discussed during the company's earnings report "his thoughts on drone deliveries and unmanned trucks and how those might fit into FedEx's operation." He said that FedEx is "obviously...aware of these trends" but expressed skepticism that automation will replace "the need for 'well-trained' pilots and drivers" in the near future. He said the company has "a number of activities under way in robotics in the package-handling sector" and "five separate work streams of projects in both aviation and automated vehicles."

## Safran, Urban Aeronautics Sign MOU To Support Cormorant UAV Development.

UPI (9/21) reports that Safran Helicopter Engines and Urban Aeronautics have signed a memorandum of understanding (MOU) to support development of the Cormorant UAV, which is being developed by Urban Aeronautics subsidiary Tactical Robotic. The companies will explore possibilities for a more powerful engine for the UAV.

## UAV Innovation Center Constructed On Indian Reservation In Oregon.

Bend (OR) Source (9/21) reports that in a recent press release, Transportation Secretary Anthony Foxx said, "People are captivated by the limitless possibilities unmanned aircraft offer, and they are already creating business opportunities in this exciting new field." One such example of that is the Unmanned Aerial Systems Innovation Center currently under construction on the Kah-Nee-Ta Resort within the Warm Springs Indian Reservation in Oregon. Aurolyn Stwyer had a vision of transforming the large parking lot into "a drone amusement park" and is now about a month away from seeing that vision complete. Stwyer explained that the Center will be a place for manufacturers to test drone equipment in addition to serving as a training facility "for individuals interested in getting the ground license to fly commercial drones."

## Orbital ATK Announces October 9 Antares Launch Date.

SPACE (9/21) reports that Orbital ATK has announced October 9 as the official launch date for its Antares return to flight mission, which will be its first launch since a 2014 explosion. Antares will launch from NASA's Wallops Flight Facility in Virginia, carrying an unmanned Cygnus cargo ship, and will utilize its Antares 230 variant which includes a Russian-made RD-181 engine, "which will replace the AJ26 engines that were implicated in a fiery explosion and launch failure on Oct. 28, 2014."

## Kentucky UAV Case Could Set New Precedents For US Law.

Reuters (9/21) reports that many people are closely watching and awaiting the results of a case in which a Kentucky UAV owner has taken legal action against his neighbor for shooting down his aircraft. Reuters reports that the district court's ruling in the case could set new precedents for US law and highlights the need for "regulation governing lower altitude air space not just in the United States but globally." Reuters adds that the FAA "forecasts about 2.5 million drones will be buzzing in US skies by the end of 2016 and that number will more than triple by 2020."

## Global Strike Commander: UAV-Capable Threat To Homeland Exists.

IHS Jane's 360 (9/21) reports that US Air Force Global Strike Commander Gen. Robin Rand said at the Air Force Alliance's Air, Space & Cyber Conference that, "There is a UAV-capable threat out there to our homeland," and that UAVs "have proliferated significantly in this nation." Rand "said that the military needs a capability to counter the threat, but civilian agencies will have to be included in any solution."

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## Bell Unveils V-247 "Vigilant" Tiltrotor UAV.

Defense News (9/22) reports that Bell Helicopter unveiled its V-247 "Vigilant" unmanned tiltrotor aircraft on Thursday at the National Press Club in Washington DC. Defense News notes that the company's effort comes at a time when the military is looking for "unmanned aircraft that are runway-independent, less expensive to operate, offer more persistence, and require less space to store and transport." According to Bell Helicopter Vice President of Tiltrotor Systems Vince Tobin, the company is targeting the US Marine Corps because the service is close to establishing a requirement. A company press release stated that the Vigilant meets "the comprehensive spectrum of capabilities outlined in the 2016 Marine Corps Aviation Plan."

## Cornell's Cislunar Explorers Design Water-Splitting CubeSat For NASA Challenge.

Digital Times (KOR) (9/23) reports that a Cornell University team called the Cislunar Explorers has designed a water-propelled satellite as a submission to NASA's Cube Quest Challenge, which will grant a total of $5.5 million in funds to teams "capable of designing, building, and delivering" a CubeSat small satellite to the Earth's moon "and beyond." The Cislunar Explorers' design outfits its CubeSat with electrolyzers that split water molecules to produce rocket propellant for "massless" missions.

## San Francisco Startup Creates Lego UAV Kit.

NBC News (9/22) reports that San Francisco startup Flybrix has created two do-it-yourself Lego UAV kits aimed at teaching "pilots how to build and fly their own aerial vehicle." The Christian Science Monitor (9/22) reports that the "basic kit, which sells for $149, includes 56 LEGO bricks, parts, and instructions for building a small, four-rotor drone that is controlled through an app," while the deluxe kits, "which start at $189, include more complex models and modification instructions, and can be flown with radio control."