

Survey of Other States' Legislation and Programs Governing UAS Use

<TARGET><BILL></BILL><SUBJECT>Survey of Other States
Legislation and Programs Governing UAS
Use</SUBJECT><COMM>JUNM28</COMM></TARGET>

US HR 972

Arizona H 2574

AZ H 2269

Florida H 119

FL S 92

Iowa S 276

IA H 427

Indiana S 1051

ID S 1067

ID S 1134

Illinois S 1587

IL HR 141

IL S 1587

Kansas H 2394

Kentucky H 454

Maryland H 1233

Minnesota H 612

MN S 485

MN H 1076

Missouri H 46

Nebraska L 412

New Hampshire H 619

New Jersey A 3157

New Mexico S 556

NORTH DAKOTA - failed

Oregon D 907

OR S 71

OR H 2710

OR S 524

South Carolina H 3415

Tennessee H 591

TN S 796

Virginia S 954 - passed moratorium for law enforcement for 2 years

West Virginia H 2732

Wyoming H 242

20 states have
introduced UAS legislation



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Reps. Zoe Lofgren and Ted Poe Introduce Bipartisan Bill to Protect Americans' Privacy Rights from Domestic Drones

WASHINGTON, D.C. - Reps. Zoe Lofgren (D-CA) and Ted Poe (R-TX) have introduced legislation, H.R. 637, [The Preserving American Privacy Act](#), to establish due process protections for Americans against government-operated unmanned aircraft systems (UAS) in U.S. airspace. The bipartisan legislation would also forbid law enforcement and private UAS from being armed with firearms or explosives while operating within U.S. airspace.

"The expanded use of drones on U.S. soil raises serious Constitutional and civil liberties issues that Congress needs to address," Rep. Lofgren said. "These devices should be used in a safe, open, and responsible manner. This bill would ensure that drones follow strict guidelines to protect Americans' privacy while still realizing their practical applications for science, border security, public safety, and commercial development."

"As we enter this uncharted world of drone technology, Congress must be proactive and establish boundaries for drone use that safeguard the Constitutional rights of Americans," Rep. Poe said. "Individuals are rightfully concerned that these new eyes in the sky may threaten their privacy. It is the obligation of Congress to ensure that this does not happen. Just because Big Brother can look into someone's backyard doesn't mean it should. Technology may change, but the Constitution does not."

Specific provisions governing the use of UAS in the [Preserving American Privacy Act](#) include:

- Government-operated UAS must obtain a warrant to collect information that can identify individuals in a private area;
- Government-operated UAS must obtain a court order and provide public notice beforehand to collect information that can identify individuals in defined public areas;
- The warrant and court order requirements are subject to exceptions for emergencies, border security, and consent;
- Private UAS cannot capture visual images or sound recordings of individuals engaging in personal activities in certain circumstances in which the individual has a reasonable expectation of privacy;
- State laws on the use of UAS in the airspace of the state are not preempted;
- Private and law enforcement UAS cannot use or operate UAS equipped with firearms or explosives in U.S. airspace.

[Click here](#) for a section-by-section of the bill.



Aaron's Law Modified Draft

Click here to read Zoe's modified draft bill "Aaron's Law" regarding the Computer Fraud and Abuse Act (CFAA)

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Visiting D.C.

Section-by-Section Summary of H.R. 637 – The “Preserving American Privacy Act”

Section 2 – Use of Unmanned Aircraft Systems

- The bill creates a new Chapter 205A in Title 18 of the United States Code.

Section A – Definitions

- “Covered information” means information that is reasonably likely to enable identification of an individual, or information about an individual’s property that is not in plain view.
- “Public unmanned aircraft system” (public UAS) means a UAS operated by a governmental entity, such as an agency of the federal, state, or municipal governments.

Section B – Use of Public Unmanned Aircraft Systems

- Governmental entities must operate public UAS in accordance with this Act.
- Governmental entities operating public UAS must minimize, to the extent practicable, the collection or disclosure of covered information.
- Governmental entities that seek a license or certificate to operate a public UAS must submit to the Dept. of Justice (DOJ) a data collection statement that includes following: the purpose for which the UAS will be used, whether the UAS is capable of collecting covered information, the length of time for which collected information will be retained, the unit of the governmental entity that is responsible for safe and appropriate use of the UAS, an individual point of contact for citizen feedback, the rank and title of the individual who can authorize the use of the UAS, the applicable data minimization policies, and applicable audit and oversight procedures.
- The DOJ may request that the Secretary of Transportation revoke a certificate or license to operate a public UAS if the operator’s activity contravenes the data collection statement.
- The Attorney General must issue regulations to establish a publicly accessible database indexing the certificates or licenses and associated data collection statements for public UAS.

Section C – Use of Covered Information as Evidence

- Covered information collected by a governmental entity’s operation of a public UAS in violation of this Act cannot be used as evidence against any individual at any trial, hearing or other procedure before any court, agency, regulatory body, or other authority of the United States.

- A governmental entity may not operate a public UAS for a law enforcement purpose, or collect or disclose covered information through such operation.
- A governmental entity may operate a public UAS and collect or disclose covered information for a law enforcement purpose under the following circumstances:
 - Pursuant to a warrant, and within ten days of the execution of the warrant serves a copy of the warrant to each person on whom covered information was collected – unless the notice would seriously jeopardize an ongoing criminal or national security investigation;
 - Pursuant to a court order based on specific and articulable facts supporting reasonable suspicion of criminal activity, the public UAS will operate only in a stipulated public area for a period of not more than 48 hours, and
 1. The governmental entity serves a copy of the warrant to each person on whom covered information was collected within ten days of the execution of the warrant, OR
 2. The governmental entity posts public notification 48 hours prior to the UAS operation, either via public signage in the area in which the operation takes place, notice in a major publication (circulation of at least 1,000) serving the area, or notice on the entity's public website.
 - If the public UAS is operated within 25 miles of any external land boundary of the U.S. for the purpose of patrolling or securing the border;
 - If the individuals on whom the covered information is collected or disclosed provide prior written consent;
 - An investigative or law enforcement office reasonably believes an emergency situation exists involving immediate danger of death or physical injury, conspiratorial activities threatening the national security, conspiratorial activities characteristic of organized crime – and the officer must apply for a warrant not later than 48 hours after the operation.

Section D – Administrative Discipline

- The section allows for oversight and administrative discipline of governmental entities that intentionally violate the provisions of the bill.

Section E – Reporting

- Once a year all Federal judges who have issued an order or warrant under this Act must report the following: the fact the warrant or order was applied for, if the application was granted or denied, the time period of UAS operation requested, the offense the application was in relation to, and the identity of the governmental entity that made the application.
- Once a year the Attorney General (Federal and State) must report, in addition to the above information, the following: a general description of information gathered under the warrant or order, the approximate nature and frequency of incriminating conduct observed, the approximate number of persons on whom covered information was gathered, the approximate cost of manpower and other resources used in public UAS operation, and the number of arrests, trials, motions to suppress, and convictions resulting from public UAS operation.

Section F – Private Use of Unmanned Aircraft Systems

- It shall be unlawful to use a private UAS equipped with a visual or auditory enhancing device to capture, in a manner that is highly offensive to a reasonable person, any type of visual image, sound recording, or other physical impression of a individual engaging in a personal or familial activity under circumstances in which the individual has a reasonable expectation of privacy – if the image, recording, or impression could not have been achieved without a trespass unless the visual or auditory enhancing device was used. This restriction applies regardless of whether there is a physical trespass.
- This provision is modeled on Cal. Civ. Code 1708.8.

Section G – No preemption of 18 USC Chapter 119

- This law does not preempt federal laws on wire and electronic communications interception.

Section H – Ban on Weaponization

- It is unlawful for private individuals or law enforcement officers to use or operate an unmanned aircraft system that is armed with a firearm (includes explosives) in the national airspace of the United States.

Section I – No State Preemption

- This law does not preempt state laws on the use of UAS exclusively in the airspace of the state.

END

Ginger Blaisdell

From: David Palmer <ArcticATC@mtaonline.net>
Sent: Friday, March 15, 2013 10:55 AM
To: Ginger Blaisdell
Cc: Jane Dale; joy@alaskaaircarriers.org; Jim Cieplak; George, Tom
Subject: AACC Participation in Unmanned Aircraft Systems Task Force.
Attachments: AACC Documents - Excerpts.docx

To: Ginger Blaisdell, Reference your Request for Participation.

Mr. Jim Cieplak forwarded your request to me, and after considerable discussion amongst the Executive Committee of the Alaskan Aviation Coordination Council (AACC) we feel that the AACC must decline direct participation in the Task Force. This pertains to AACC participation in the work of the Task Force as a distinct and separate entity. We do not represent the individual members of the Council outside of that forum, and as such have no direct legal, administrative, or policy influence over the conduct and activities of our members. I have attached a short document containing several excerpts from our website which may be of use to you. We provide a discussion forum for subjects of mutual interest among members of the Aviation Community. The AACC is a government/industry partnership group, and affords the opportunity for information sharing on the strategic level - useful for all parties in understanding and responding to subjects impacting within Alaskan Aviation. As a group we do not advocate for or against specific issues, rather we focus on the coordination and sharing of information so that appropriate organizations/entities can identify and resolve issues in an expedient manner. As the Task Force "stands-up" and determines its agenda we may be able to assist with some elements of coordination and would look forward to that discussion in the future. Please contact me at ArcticATC@mtaonline.net or my cell 907-354-2399 if you have questions or concerns regarding this information.

Thanks! /Dave Palmer

From: Ginger Blaisdell [<mailto:Ginger.Blaisdell@akleg.gov>]
Sent: Wednesday, March 13, 2013 1:11 PM
To: jcieplak@gci.net
Subject: Unmanned Aircraft Task Force

Thank you for considering being part of this policy directive group. The tasks of the group would be:

The Unmanned Aircraft Systems Task Force is created in the legislative branch for the purpose of making recommendations for a statewide comprehensive plan to regulate that use of unmanned aircraft systems for public and private sector purposes. The task force would be made of approximately 11 members (one from each legislative body and 9 govt agency and industry folks).

The task force shall, not later than January 15, 2014, submit an initial report to the legislature, and not later than Janu 2015, submit a final report to the legislature. The reports must include
Policy options and recommendations to provide for the use of unmanned aircraft systems while protecting privacy w by law enforcement, and allowing the use of unmanned aircraft systems for other public and private applications;
Recommendations to the legislature and the governor, including draft legislation required to achieve the policy objec proposed by the task force.

The task force shall meet as frequently as necessary to carry out its responsibilities.

The task force may request administrative and technical support from the University of Alaska Fairbanks.

Members of the task force shall serve without compensation but are entitled to per diem and travel expenses authoriz boards and commissions under AS 39.20.180.

The task force terminates on January 15, 2015.

Thank you for thinking about being part of this group.

Ginger Blaisdell

Office of Representative Shelley Hughes

Room 409 State Capitol

Juneau, AK 99811

907-465-5265

Ginger Blaisdell

From: Jeremiah Campbell
Sent: Friday, March 15, 2013 4:15 PM
Subject: AK House Majority Caucus Press Release: Hughes Intros Resolution Creating Legislative Task Force
Attachments: 20130315_Hughes_HCR6.pdf

HUGHES INTRODUCES RESOLUTION CREATING LEGISLATIVE TASK FORCE *HCR 6 establishes task force on Unmanned Aircraft Systems*

Friday, March 15, 2013, Juneau, Alaska – Representative Shelley Hughes today introduced House Concurrent Resolution 6 which would establish a Task Force on Unmanned Aircraft Systems and recognizes the Alaska Center for Unmanned Aircraft Systems Integration at the University of Alaska Fairbanks.

"We've been saturated recently with news about drones causing destruction and killing people, and we've been listening to hours of testimony nationally," Hughes, R-Palmer, said. "Even local news reported just yesterday on this seemingly hot topic. The other side of the story may not be as newsworthy as death and filibustering, but it's very important for Alaska."

Unmanned aircraft have been used in Alaska for some years doing jobs that are determined "dull, dirty, and dangerous." Unmanned Aircraft Systems (UA Systems) helped with guiding the oil tanker to Nome to restock their tank farm in the winter, locating a downed airplane near Bethel a few months ago, and have even been used for accurately counting sea lions that kept them off of the endangered species list. The missions that UA Systems have successfully completed have protected pilots that would have been flying in inclement weather and have conducted research in an economical fashion with reduced risk to human and animal lives.

At the same time, privacy concerns will not be ignored, according to Hughes. "Miniature helicopters will not be recording us while singing in the shower," Hughes said. "But we won't toss the baby out with the bath water. We can work to address those concerns and still embrace the technology that's moving forward."

HCR 6 has a referral to the House Special Committee on Economic Development, Trade and Tourism.

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To contact Rep. Hughes, please call 907-465-3743.

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Arianna Huffington: Drone damage is political as well as human

Ariana Huffington: Drone damage is political as well as human

Published: March 14, 2013 Updated 11 hours ago

By Arianna Huffington — comment

It's become accepted wisdom that Washington has become pathologically polarized and partisan, with every new debate inevitably breaking down along party lines. That's why it was so remarkable when Rand Paul's old-fashioned talking filibuster last week scrambled the even more old-fashioned right-vs.-left way of looking at the world. The Paul-provoked debate on the confirmation of John Brennan to head the CIA in turn provoked a wider and critical debate about the use of drones — a debate that needs to continue well beyond Brennan's confirmation.

In February, Paul had sent Brennan a letter asking, "Do you believe that the president has the power to authorize lethal force, such as a drone strike, against a U.S. citizen on U.S. soil?"

A few weeks later, Attorney General Holder replied:

"The question you have posed is therefore entirely hypothetical. ... It is possible, I suppose, to imagine an extraordinary circumstance in which it would be necessary and appropriate under the Constitution and applicable laws of the United States for the president to authorize the military to use lethal force within the territory of the United States."

And so Paul took to the floor to mount the first talking filibuster since 2010.

Democrat Ron Wyden soon joined the filibuster. "The executive branch should not be allowed to conduct such a serious and far-reaching program by themselves without any scrutiny because that's not how American democracy works," said Wyden.

On the other side of the aisle, Lindsey Graham called the idea of the U.S. using drones to kill American citizens on U.S. soil "ridiculous," and said the controversy was the result of "paranoia between the libertarians and the hard left that is unjustified," while his frequent ally John McCain, went the other way, calling Paul and fellow filibusterers "wacko birds" (which sounds like a good name for a cereal). Right vs. left was suddenly scrambled.

Not surprisingly, the poles of the debate were only partly dislodged from party affiliation, as Wyden was the only Democrat to join Paul — though Democrats Patrick Leahy and Jeff Merkley, along with Independent Bernie Sanders, did ultimately vote against Brennan.

But even if the terms of the debate on drones were only partly rearranged, it was still a step in the right direction. We need to stop framing the debate as a question of national security vs. human rights. Those in favor of drone strikes have simply assumed for themselves the national security position. From their perspective, it's unquestionable that drones make us safer, so those arguing against them a) don't care about protecting us, and b) must come up with some other — and softer — rationale for their opposition. The problem is that this line of reasoning just isn't true.

Until Paul vs. Holder, the debate was largely about drone use overseas. Bringing the question to the U.S. definitely served to heighten the legal arguments, but the questions we are facing with the use of drones overseas are anything but “hypothetical.”

First, there’s the right/left-scrambling statistic that President Obama has authorized six times more drone strikes than President Bush — his 300th was on Dec. 1 of last year. And what kind of national security return are we getting for all those aerial attacks? Since 2004, only 2 percent of those killed have been confirmed as militant leaders.

Even more sobering were numbers from a study by professors from NYU and Stanford last year. Relying on data from the Bureau of Investigative Journalism, they found that from mid-2004 to mid-2012, between 474 and 881 civilians were killed in Pakistan. This includes 176 children. While “we may not have declared war on Pakistan, the people living in Northwest Pakistan under drones,” might as well be “in a war zone.”

And when people feel like war has been declared on them, they tend to mirror the feeling back.

“What scares me about drone strikes is how they are perceived around the world,” said retired Gen. Stanley McChrystal in January. “The resentment created by American use of unmanned strikes ... is much greater than the average American appreciates. They are hated on a visceral level, even by people who’ve never seen one or seen the effects of one.”

Visceral-level hate — not exactly an effective “hearts and minds” strategy. In Iraq, it finally became conventional wisdom that we couldn’t win with a military strategy alone. But this kind of thinking has yet to penetrate the conventional wisdom on drones. We euphemistically call them “targeted strikes” but the collateral damage they inflict is political as well as human.

So do drone strikes make us more safe or less safe? Those in favor of them, especially those ordering them and charged with their oversight, seem to think the answer is so obvious that it needs no justification. Maybe this is because they won’t even acknowledge the facts in the first place. And, as we saw in Iraq, the combination of refusing to look at the facts and allowing claims of national security to go unquestioned can be toxic.

Arguing against drone strikes on the basis of their legality is certainly important, but there’s no reason to cede the national security card to the pro-droners. Even those who care deeply about civil liberties need to push back against the idea that this is a trade-off between civil liberties and our safety. The drone debate may have ended on the Senate floor, but let’s keep it going everywhere else.

Arianna Huffington is president and editor-in-chief of Huffington Post Media Group. Her email address is arianna@huffingtonpost.com.

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Arianna Huffington: Drone damage is political as well as human

The American Spectator

THE SPECTACLE BLOG

Judiciary Committee Opens Domestic Drone Hearing

By Luca Gattoni-Celli on 3.20.13 @ 11:15AM

I'm live at a Senate Judiciary Committee hearing entitled "The Future of Drones in America: Law Enforcement and Privacy Considerations."

Chairman Leahy stated that the committee will attempt to conduct the hearing while members rotate in and out to take votes.

An excerpt from Chairman Patrick Leahy's (D-VT) opening statement follows (emphasis added):

The focus of today's hearing is on the domestic, non-military use of drones. Recently, the debate about the use of unmanned aerial vehicles, or "drones", has largely focused on the lethal targeting of suspected terrorists, including Americans. **I continue to have deep concerns about the constitutional and legal implications of such targeted killings.** I have spoken with Senator Durbin, and next month he will chair a hearing in the Constitution subcommittee that will examine these issues carefully. In addition, I will continue to press the administration to provide this Committee with all relevant Office of Legal Counsel opinions related to the use of drones to conduct targeted killings.

As I noted at the beginning of this Congress, I am convinced that the domestic use of drones to conduct surveillance and collect other information will have a broad and significant impact on the everyday lives of millions of Americans going forward.

...

On this issue, we cannot take a short-sighted view, and we must realize that technology in this area will advance at an incredible rate. This topic is of significant interest to many members of our Committee, and I hope that this hearing will be just the beginning of an ongoing dialogue as to how best to manage the unique privacy threats associated with this modern technology, while not stifling this nascent industry that has enormous potential to improve our lives.

Before giving his own statement, Ranking Member Sen. Chuck Grassley (R-IA) said to Leahy that, "I don't think there are any differences between your concern and my concern on this issue." His worries were similar: "We must remember that the power of new technology creates greater responsibility" to protect the rights of our citizens. "Just because the government [observes] the constitution does not mean it can" surveill citizens constantly. He invoked "Big Brother" and asserted that constant monitoring is incompatible with the ideal of living in a free society. Another topic of discussion was the potential for prosecutorial use and abuse of unmanned systems. "It's very important that the American people know when and how the Justice Department will use these machines."

Reflecting the uncertainty and controversy surrounding drones, one of the witnesses, Michael Toscano, took exception to the term, which he said carries an unduly negative connotation.

About the Author

Luca Gattoni-Celli is an editorial intern at The American Spectator and a D.C.-based journalist focusing on economic policy, information technology, and government accountability. He graduated from the College of Charleston in May of 2012 with a degree in economics.

<http://spectator.org/blog/2013/03/20/sen-jud-committee-opens-domest>

Drones will require new privacy laws, Senate told

By JOAN LOWY

Associated Press / March 20, 2013

WASHINGTON (AP) — Privacy laws urgently need to be updated to protect the public from information-gathering by the thousands of civilian drones expected to be flying in U.S. skies in the next decade or so, legal experts told a Senate panel Wednesday.

A budding commercial drone industry is poised to put mostly small, unmanned aircraft to countless uses, from monitoring crops to acting as lookouts for police SWAT teams, but federal and state privacy laws have been outpaced by advances in drone technology, said experts appearing at a Senate hearing.

Current privacy protections from aerial surveillance are based on court decisions from the 1980s, the committee was told, before the widespread drone use was anticipated. In general, manned helicopters and planes already have the potential to do the same kinds of surveillance and intrusive information gathering as drones, but drones can be flown more cheaply, for longer periods of time and at less risk to human life. That makes it likely that surveillance and information-gathering will become much more widespread, legal experts said.

The Federal Aviation Administration recently predicted about 7,500 civilian drones will be in use within five years after the agency grants them greater access to U.S. skies. Congress has directed the FAA to provide drones with widespread access to domestic airspace by 2015, but the agency is behind in its development of safety regulations and isn't expected to meet that deadline.

If Americans' privacy concerns aren't addressed first, the benefits of potentially "transformative" drone technology may not be realized, Ryan Calo, a University of Washington law professor, told the Judiciary Committee.

But experts were divided on whether Congress should update federal privacy laws to set a national standard, or whether the responsibility should be left to state lawmakers to craft their own solutions. Several bills have been introduced in Congress that would, among other things, require warrants before drones could be used for surveillance.

A variety of drone-related bills have been introduced this year in more than 30 state legislatures.

There is already limited civilian drone use. The FAA has granted several hundred permits to state and local governments, police departments, universities and others to experiment with using small drones.

Initially, most civilian drones are expected to be around the size of backpack or smaller, weighing less than 55 pounds and unable to fly higher than most birds. The U.S. military, on the other hand, uses everything from unarmed, hand-launched drones like the 2.9-pound Wasp to systems like the MQ-9 Reaper that flies up to 50,000 feet, has a 66-foot wingspan, weighs up to 10,500 pounds and can fire Hellfire missiles and guided bombs.

"I am convinced that the domestic use of drones to conduct surveillance and collect other information will have a broad and significant impact on the everyday lives of millions of Americans going forward," said the committee's chairman, Sen. Patrick Leahy, D-Vt.

“Small, quiet unmanned aircraft can easily be built or purchased online for only a few hundred dollars, and equipped with high-definition video cameras while flying in areas impossible for manned aircraft to operate without being detected,” Leahy said. “It is not hard to imagine the serious privacy problems that this type of technology could cause.”

Earlier this year, the FAA solicited proposals to create six drone test sites around the country. With a nod to privacy concerns, the FAA said test site applicants will be required to follow federal and state privacy laws and to make a privacy policy publicly available.

The test sites are supposed to evaluate what requirements are needed to ensure the drones don't collide with planes or endanger people or property on the ground. Remotely controlled drones don't have a pilot who can see other aircraft the way an onboard plane or helicopter pilot can.

The agency has received 50 applications to create test sites in 37 states. Eventually, every state may have a test site, said Michael Toscano, president and CEO of the Association for Unmanned Vehicle Systems International, a trade association for the domestic drone industry.

Follow Joan Lowy on Twitter at http://www.twitter.com/AP_Joan_Lowy

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Drones will require new privacy laws, Senate told

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 Associated Press

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The Seattle Times

Winner of Nine Pulitzer Prizes

Local News

Originally published February 8, 2013 at 8:55 PM | Page modified February 8, 2013 at 8:55 PM

Bill would put tight restrictions on drone use in state

A bill introduced Friday in Olympia would severely restrict the purchase and use of aerial drones by law-enforcement and state departments.

The Associated Press

A new bill introduced by a Republican lawmaker in Olympia would put strict restrictions on how law-enforcement agencies and state departments can buy and deploy aerial drones.

Rep. David Taylor's proposal was introduced Friday, a day after Seattle Mayor Mike McGinn ordered the city's Police Department to abandon its nascent drone program, which had received approval from the Federal Aviation Administration but was awaiting the go-ahead from the City Council.

Taylor's extensive bill covers the purchase of drones, data collection by the unmanned aerial vehicles, search-warrant requirements and mandated audits.

The Moxee, Yakima County, lawmaker worked for about two months on the measure, which would regulate drones for both law-enforcement and state agencies, such as the Department of Ecology or the Department of Transportation.

"One reason to write this bill was to open dialogue," Taylor said. "We need to understand where we're heading."

Lawmakers in at least 11 states are looking at plans to restrict the use of drones over their skies amid concerns the vehicles could be exploited to spy on Americans. Concerns have increased since the FAA began establishing safety standards for civilian drones, which are becoming increasingly affordable and small in size.

The Seattle Police Department bought two Draganflyer X6 vehicles through a federal grant without public input. The Draganflyer X6 vehicle is 36 inches wide and is 33.5 inches long, and stands just under a foot.

Taylor's bill immediately gained the backing of the Washington state chapter of the American Civil Liberties Union, which spearheaded the opposition to Seattle police drones.

"Aerial drones can provide law-enforcement agencies with unprecedented capabilities to engage in surveillance and intrude on people's privacy," ACLU spokesman Doug Honig said in an email.

So far Taylor's bill has only Republican backers, but that's expected to change. Across the country, opposition to the use of domestic drones has come from opposite sides of the political spectrum, including civil-liberties advocates and those worried about government intrusion.

Taylor's measure would require legislative approval from local or state lawmakers before a corresponding police agency obtains a drone, meaning a city council would have to vote before its police department could acquire a drone.

Under the bill's provisions, an agency must have a warrant to use a drone unless there are exigent circumstances, such as search-and-rescue or hostage situations. Such situations still would require retroactive warrants.

The measure calls for deletion of data gathered within 30 days if no criminal activity is recorded. It requires erasing data collected from people who are not the target of a drone deployment within 24 hours. It also calls for an annual report from law-enforcement agencies and courts showing how drones have been used, as well as an annual audit for each agency that uses drones.

Taylor said the bill is aimed at protecting privacy and reducing the liability of any Washington agencies that use the vehicles. He added that should the bill get a hearing in committee, he expects to hear from law-enforcement agencies on how they would use drones.

U.S. Department of Homeland Security drones do enter Washington airspace occasionally, patrolling the Canadian border east of the Cascade mountains. The two Predator-B aircraft are based in North Dakota.



Published March 11, 2013, 10:15 PM

BRUCE GJOVIG: Don't strap tie-downs on N.D.'s chance to soar

House Bill 1373 is a bill to limit the use of unmanned aircraft systems for surveillance by law enforcement except by use of search warrant.

By: **Bruce Gjovig**, Grand Forks Herald

GRAND FORKS — House Bill 1373 is a bill to limit the use of unmanned aircraft systems for surveillance by law enforcement except by use of search warrant.

This bill sends the wrong message to the Federal Aviation Administration at a time when North Dakota is heavily invested in UAS and wants to secure one of six UAS integration test sites.

These sites will lead the way in the testing, development and maintenance of UAS and the training of the systems' operators.

Even negative publicity can hurt that application in the next few months as the FAA is looking for any reason to narrow the pool of applicants.

The FAA wants to send UAS integration activity to states where the UAS innovation and technology are welcomed, not fought. That is good government policy to pave the way for safe, efficient and prudent integration of UASs in the future.

FAA application guidelines for the UAS integrations test site say the agency's preference is for a state without laws limiting aircraft operations within the proposed test site area. That could be interpreted to include HB 1373.

The FAA's "Unmanned Aircraft Systems Test Site Selection" document states, "Applicants that declare there are no local/state statutes limiting aircraft operations within the proposed Test Site area would be scored highest."

Let the Airspace Integration Team in North Dakota submit an application in 2013 that is unfettered with unnecessary limitations.

Tough competition

The FAA competition is going to be tough, as more than 28 states are competing for six UAS designations. A state law that regulates and restricts drone use likely will hurt North Dakota's chances by lowering the state's score.

Let us not chance it for a law that is premature at best — likely totally unneeded and based on fear, not facts.

Being one of six test sites is tantamount to being one of the hubs of this emerging industry. North Dakota is well positioned to welcome and attract many UAS-related companies and their high-paying, high-tech jobs.

Grand Forks is committing to a 220-acre UAS Business Park to provide up to 1.2 million square feet of facilities and infrastructure and a dynamic community in which to develop the UAS industry.

Over five to 10 years, it is projected this UAS Business Park will support 3,700 jobs related to the UAS industry.

Ultimately, this is about innovation, high-paying jobs, economic development and significant uses for unmanned systems in agriculture, energy and so on.

For example:

- UAS will be used in precision farming to offer lower cost, higher resolution and more efficient monitoring and detection of diseases and stress in valuable crops such as corn, soybeans, sugar beets, potatoes, wheat and more.

The earlier the detection of insects and disease, the fewer chemicals can be used, a fact that's good for farmers and consumers alike.

North Dakota has been a leader in adapting precision agriculture to maximize quality, efficiency and profitability on farms. North Dakota farmers want to pioneer the use of unmanned aircraft systems.

A UAS test site will allow that.

- UAS will be used to monitor and inspect hundreds of miles of pipelines and transmission lines, doing a better job at less cost.

UAS can inspect and monitor flared gas sites and test for chemicals that can be harmful or even deadly. UAS are best used for tasks that are "dirty, dangerous or dull."

Let us be a leader in the development of this innovative technology for commercial uses.

- UAS can monitor and count wildlife at a safe distance to cause the least disruption.

- Perhaps a UAS will deliver a pizza to your door someday, but I am not betting on that one.

Another problem with HB1373 is that the bill would create a new legal framework that would treat the use of unmanned aircraft differently than the use of manned aircraft. Law enforcement has employed manned aircraft for decades and with the full approval of the U.S. Supreme Court.

So, passing entirely new laws makes no sense. Police officers know they are under a microscope on the use of unmanned aircraft, and they are very cautious because they see the great potential to enhance safety, help with search and rescue missions and save lives.

They will not be reckless as this is a tool for safety.

Phone vs. drone

We have more to fear from a camera phone than a camera drone when it comes to invasions of privacy. It was a camera phone, not a drone, that caught Prince Harry with his pants down.

Privacy concerns need to be respected and will be. The International Association of Chiefs of Police, the world's largest police organization, issued recommended policies and procedures for law enforcement's use of UAS to ensure the technology is used safely, responsibly and in a way that respects privacy.

Rather than banning the use of UAS and the benefits the aircraft provide, law enforcement should be encouraged to adopt these regulations, which won't draw praise even from the American Civil Liberties Union.

Likewise, the Association for Unmanned Vehicle Systems International, the trade association for the UAS industry, put out a code of conduct that addresses the safe and responsible use of UAS.

Wrong law, wrong time

In other words, the rules of the road are being put into place. But seat belt laws did not come about before cars even were on the road.

There are ways to meet people's privacy concerns, and Congress is reviewing those proposals now. North Dakota does not need to duplicate or replicate what Congress is doing.

If state laws still are needed, they can be passed two years from now. There is no rush.

Please kill HB 1373 before it kills innovation.

Gjovig is entrepreneur coach and CEO at the UND Center for Innovation.

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SHERIEF ROBERT W ROST

Don't try to fix something that is not broken...



We must have missed something...Has there been a sudden rash of invasion of privacy cases involving unmanned aircraft systems (UAS, the devices the media has dubbed "drones") in North Dakota? North Dakota House Bill 1373 would lead one to believe that this is the case. HB-1373 is a North Dakota House Bill, aimed at unmanned aircraft systems, which is currently being reviewed by the North Dakota Senate Judiciary Committee. The proposed law imposes unnecessary reporting requirements on law enforcement; fails to identify the agency responsible for monitoring compliance; and will discourage North Dakota law enforcement agencies from establishing UAS Units. The end result will be that the citizens of North Dakota are deprived of a valuable technological resource that could assist in locating lost persons, monitor disasters, and help apprehend dangerous criminals.

The privacy protection detailed in HB 1373 already exists. This important protection was granted by the U.S. Supreme Court 99 years ago in the case of *Weeks vs. U.S.* (232 U.S. 383) and later applied to all states in *Mapp v. Ohio* (367 U.S. 643). The ensuing legal concept is called the "exclusionary rule" and prohibits the admission of illegally obtained evidence in a criminal trial. The exclusionary rule places the question of evidence admissibility before the courts, the branch of government our founding fathers charged with the responsibility of deciding such important matters.

HB-1373 is clearly focused on law enforcement use of UAS and almost completely ignores the significant risks of privacy infringements by non-law enforcement entities such as the news media or the voyeuristic neighbor who enjoys flying his UAS over your home. The true risk of invasion of privacy rests with private individuals who are not subject to the proposed law, Federal Aviation Administration regulations, or well-developed policies and procedures.

The proposed law dictates that search warrants permitting use of UAS may only be issued in criminal investigations. This requirement would prohibit a state or local agency from obtaining a search warrant to conduct an administrative investigation focused on suspicion of an administrative violation such as dumping toxins into our beautiful North Dakota lakes and rivers. Why?

The idea the U.S. Congress, or a state legislature, passing legislation to attempt to control a technology, such as UAS, that is still maturing and growing is premature and ill-advised. It is unprecedented in any other technology including telephones and computers. Each of those technologies was allowed to mature prior to the enacting of privacy related legislation. And, such legislation was only enacted when problems with privacy protection related to those technologies arose. Enacting UAS related privacy legislation will have a chilling effect on the

development of UAS technology. Slowing the development of UAS technology will deprive North Dakotans of the significant public safety missions that UAS can perform.

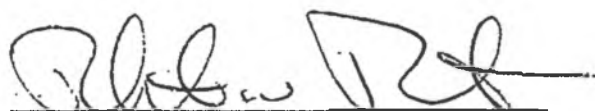
The reality is that only two law enforcement agencies in the State of North Dakota (U.S. Customs and Border Protection and the Grand Forks County Sheriff's Department) have received authorization from the Federal Aviation Administration to operate unmanned aircraft systems. I cannot address U.S. Customs and Border Protection policies regarding UAS. However, as the Sheriff of Grand Forks County, I can provide a synopsis of Grand Forks County Sheriff's Department (GFSD) policies and procedures related to the operation of UAS. The GFSD UAS Unit is a collaborative research effort with the University of North Dakota and two UAS manufacturers, Aerovironment and Draganfly Innovations. The UAS research project goals focus on determining if UAS can be used effectively in public safety missions. The GFSD UAS Unit is subject to the "GFSD UAS Unit Policy and Procedures Manual" which dictates strict safety and privacy protections. The GFSD intends to utilize UAS for essential public safety missions such as searching for lost people, post-disaster damage assessments, crime and traffic accident scene photography, and searches for dangerous criminals. There are no plans to utilize the aircraft for covert surveillances. In fact, the limited flight duration and line-of-sight limitations of the UAS we utilize make them very poor platforms for that type of mission. In addition to adherence with internal policies and procedures, our UAS operations must comply with numerous Federal Aviation Administration requirements including remaining at or below 400' above-ground-level and within line-of-sight of the UAS pilot. These requirements effectively limit UAS flights to within ½ mile of the operator. One final check and balance is the review of all UAS research project mission sets by the University of North Dakota's Unmanned Aircraft Systems Research Compliance Committee. This committee is composed of fifteen members representing local government, local citizens, UND faculty and administrators, and local public safety agencies. The committee is charged with the duty of applying community standards and values when evaluating all UND UAS research projects. No UAS mission is launched unless it has been pre-approved by the committee.

An interesting aspect of UAS operations is the need to comply with all of the previously listed privacy requirements. If GFSD had chosen to purchase a small manned aircraft, none of the listed requirements would apply. In fact, anyone is free to fly over almost any location and make observations from a manned aircraft. The important message here is that unmanned aircraft systems operated by government agencies are already subject to significant additional scrutiny in contrast to manned aircraft operated by law enforcement agencies.

In an opinion piece, appearing on the editorial page of the March 8, 2013 edition of the *Grand Forks Herald*, Steve Morrison makes some seriously misleading statements that require correction. Mr. Morrison says that "Drones are, essentially, highly sophisticated remote control

aircraft. They range in size from the largest military drones like the Predator down to drones that look like a mosquito." The reality is that most small UAS have about the same sophistication as a RC model aircraft purchased from a hobby store and none are as small as a mosquito. Later in the article, Mr. Morrison states that small UAS payloads can carry "small weapons." It is this type of unfounded and sensationalized statement that causes the public concern. Again, the reality is that Small UAS are woefully inadequate platforms for weapons. No law enforcement agency is currently arming small UAS and arming of our UAS is expressly prohibited by Grand Forks County Sheriff's Department policies and procedures. If law enforcement agencies wished to arm aircraft wouldn't the over 200 local and state law enforcement agencies that use manned aircraft have armed them? Again, the reality is that there are no non-federal U.S. law enforcement agencies operating armed aircraft, unmanned or manned, and no agency has expressed a plan to do so in the future.

Small unmanned aircraft systems have a yet to be determined number of applications to both humanitarian and law enforcement missions. North Dakota is positioned to be a leader in this exciting new field. Enacting laws which limit the use of unmanned aircraft systems is an attempt to fix something that is not broken. It sends the wrong message to the Federal Aviation Administration who will, in the near future, be reviewing North Dakota's proposal to be selected as one of six UAS national test sites. Retirement of HB-1373 and creation of a legislative study session group to research UAS is a much more logical and measured approach to this issue.

A handwritten signature in black ink, appearing to read "Robert W. Rost", written over a horizontal line.

Robert W. Rost
Grand Forks County Sheriff

Monday, 04 March 2013

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WORLD

Domestic drones are already reshaping US crime-fighting

Last updated: Monday, March 04, 2013 12:13 AM

GRAND JUNCTION, COLO. — As US authorities grapple with how to regulate the use of unarmed drones in US skies, a small network of police, first responders and experts is already flying unmanned aircraft.

These operators say rapidly evolving drone technology is already reshaping disaster response, crime scene reconstruction, crisis management and tactical operations. Critics of US domestic drone use worry about privacy and safety.

Several dozen local police departments, federal agencies and universities have special FAA permits to fly drones in US airspace.

"Like a lot of law enforcement agencies, our first thoughts were, 'Cool! Let's use it for tactical missions — for chasing bad guys across the county,'" said Ben Miller, a Mesa County, Colorado, sheriff's deputy. "But the reality is you'll have a mission like that once or twice a year," he said. "The real utility of unmanned aerial systems is not the sexy stuff. It's the crime scene and accident reconstruction."

Miller's department in rural western Colorado has the widest approval to fly drones of any local law enforcement agency in the US.

Mesa has flown 40 missions in just over three years, "none of them surveillance," said Miller, who crafted the department's drone program and spent a year devising training protocol for fellow deputies before receiving FAA approval. "We can now bring the crime scene right into the jury box, and literally re-enact the crime for jurors," he said.

Recent applications to the FAA, obtained by the civil liberties group Electronic Freedom Foundation, indicate many police want drones for drug investigations, covert surveillance and high-risk tactical operations.

Domestic drones currently cost anywhere from \$10,000 to \$20,000 for a small system like the DraganflyerX6, which stays aloft only 15 minutes, to more than \$1 million for sophisticated fixed-wing drones that can remain aloft for hours.

Military models are also being used by the Department of Homeland Security, which has a fleet of at least 10 unarmed Predator drones, powerful enough to identify a tennis shoe from 60,000 feet up.

First-generation drones can't yet carry an onboard sense-and-avoid system, a requirement of manned aircraft. Experts said mass-produced, drone-mounted sense-and-avoid technology is still two to five years away. FAA officials are required to open US skies in 2015 to widespread use of unmanned aircraft by public agencies and private industry.

The boom in drone use, both private and public, is also raising privacy concerns.

Civil liberties groups are urging federal and state legislators to place immediate restrictions on drone use by US law enforcement agencies. At least 15 states have drafted legislation that would restrict drone use. In Seattle last month, a public outcry prompted the mayor to order the police chief to return the department's two new drones to their manufacturer. — Agencies

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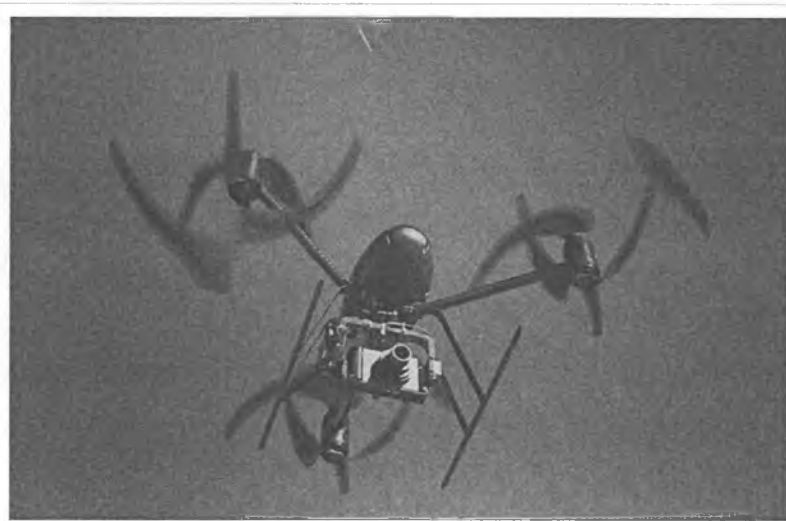
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Damn the regulations! Drones plying US skies without waiting for FAA rules



Chris Francescani / Reuters

A Draganflyer X6, six-rotor remote controlled helicopter, which can fly up to 20 mph and travel a quarter mile, is pictured at the Grand Valley Model Airfield in Mesa County, Colo. The Draganflyer X6 is a property of Mesa County Sheriff's Department.

By Chris Francescani
Reuters

NEW YORK -- They hover over Hollywood film sets and professional sports events. They track wildfires in Colorado, survey Kansas farm crops and vineyards in California. They inspect miles of industrial pipeline and monitor wildlife, river temperatures and volcanic activity.

They also locate marijuana fields, reconstruct crime scenes and spot illegal immigrants breaching U.S. borders.

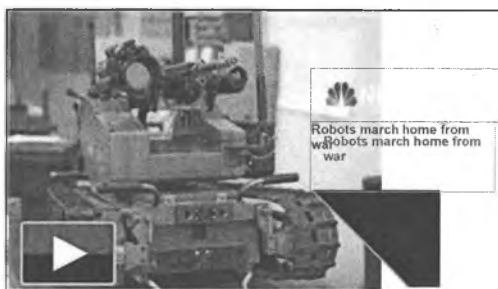
Tens of thousands of domestic drones are zipping through U.S. skies, often flouting tight federal

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Ten years of war have given robot developers a chance to refine and improve their bots. Now the robots are finding all sorts of new jobs on the homefront.

greater danger to the national airspace."

Last year the National Football League petitioned the FAA to speed the licensing of commercial drones, joining Hollywood's Motion Picture Association of America, which has been lobbying the agency for several years, an MPAA spokesman told the drone news website UAS Vision.

The FAA has issued 1,428 drone permits to universities, law enforcement and other public agencies since 2007, when the agency formally banned commercial drone use. Of those, 327 permits remain active, said FAA spokesman Les Dorr.

Tough to enforce

Bateson flies a customized 48-inch-wide Styrofoam fixed-wing remote-controlled aircraft that cost about \$20,000 - compared with up to \$1 million for a helicopter. He said his aircraft has logged 1,800 miles and has recorded 60 hours of high-resolution video. He said he has never run into trouble with the FAA.

Patrick Egan, an unmanned aircraft consultant to the U.S. military and editor of sUAS News, a drone news website, said the FAA's commercial ban on drones is unenforceable.

"How do you possibly enforce these regulations?" he said.

Earlier this year, Connecticut marketing firm ImageMark Strategy and Design launched a drone-powered aerial photo and video service to offer to its existing clients, which include universities, golf resorts and real estate firms.

Partner Scott Benton said his company invested about \$20,000 in remote-controlled multi-rotor copters equipped to carry camcorders or SLR digital cameras with swivel tilts. Benton said he wasn't even aware of FAA restrictions on commercial drone use until after he purchased all the equipment.

He said his company plans to charge clients for editing and post-production work, not the drone flights.

Many commercial drone operators offer similar arguments. Some say they operate only on private land. Others say they are selling data, not drone flight time.

Still others say they will simply take their chances.

For decades, model airplane hobbyists have been allowed to fly small, remote-controlled aircraft up to 400 feet and at least a quarter mile from any airport. While public agencies can get permission to use unarmed drones, all commercial use remains banned.

"As a hobbyist - I can do whatever I want right now, within remote-control guidelines," said Bateson, the aerial photographer. "But as soon as you turn it into a business ... the FAA says you are violating the national airspace."

Bateson said that whether his drone shoots video for fun or for profit, "There is no

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"Honestly?" said one commercial operator, who requested anonymity to protect his business. "My hope is that I'm far afield enough and small enough potatoes to the FAA that I can fly under the radar on this one."

Privacy concerns

In 2011, News Corp's tablet news site, the Daily, sent a Microdrone MD4-1000 into the skies over Alabama, Missouri and North Dakota to capture dramatic aerial footage of flood damage. A subsequent FAA investigation resulted in a warning, an FAA spokesman told Reuters. A News Corp spokesman declined to comment.

Last fall, a collective shudder rose up from Hollywood when false reports surfaced that the aggressive tabloid news website TMZ was seeking permission to fly its own drone.

The report was false, but it raised concerns.

"I'm less worried about the police getting a fleet of drones than I am about the news media," said Egan.

"Imagine what it will be like when the paparazzi can send a fleet of drones into the Hollywood hills."

The boom in drone use, both private and public, is also raising privacy concerns.

Civil liberties groups are urging federal and state legislators to place immediate restrictions on drone use by U.S. law enforcement agencies, which have historically been quick to capitalize on emerging technology like cell phone tracking.

At least 15 states have drafted legislation that would restrict drone use. In Seattle last month, a public outcry prompted the mayor to order the police chief to return the department's two new drones to their manufacturer.

Blacksheep drones

An even bigger concern for many is security. The activities of some drone operators are fueling fears about the potential for terrorism or that drones could interfere with manned air traffic and cause an accident.

A group of skilled drone operators using "first person view," or FPV, technology, has sent Ritewing Zephyr drones that capture high-quality video of visual thrill rides around some of the world's most famous landmarks.

The group, known as Team Blacksheep, has made a series of videos using drones circling the torch on New York City's Statue of Liberty and London's Big Ben clock tower. Team Blacksheep's FPV drones have darted through the arches of the Golden Gate Bridge and buzzed the peak of the Matterhorn.

The videos, captured at dizzying angles, are wildly popular online, but hobbyists and other drone enthusiasts worry that such videos give the industry a bad name.

"Those are the people the FAA should be going after," Bateson said.

A Team Blacksheep founder did not respond to requests for comment on security concerns.

Would-be attackers have already tried to exploit drones. Last fall, a Massachusetts man was sentenced to 17 years in prison for plotting to attack Washington, D.C., with three remote-controlled airplanes carrying C-4 explosives.

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Drones may also be vulnerable to hacking.

Last summer, Department of Homeland Security officials challenged Texas aerospace engineering professor Todd Humphreys and his class to try to "spoof" a DHS drone's GPS system.

GPS "spoofing" is a technique by which a vehicle's GPS receiver can be tricked and taken over by a slightly more powerful signal that mimics the attributes of the original signal - essentially an airborne hack.

Humphreys and his students succeeded in hacking the drone and took control of its flight path.

If a college class "can spoof the GPS, what can other nation states or terrorist groups do?" Representative Paul Broun (R-Ga.) asked at a recent congressional hearing on domestic drones.

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Chinese espionage?

Some U.S. drone designers worry about the consequences of what they see as a slow U.S. response to a rapidly evolving technology.

"The Chinese are going to kill us," said Texas pilot Gene Robinson, who spent \$20,000 designing an innovative fixed-wing drone for search-and-rescue missions. "They have copied every single design, including mine, that they can get their hands on."

Robinson said he installed Web-tracking software on his drone design Web page and then watched last spring as a Chinese design company "spent a month on my Web page ... reverse-engineered my design" and began selling mass-produced copies in December - for \$169.

Side-by-side pictures of Robinson's model and the Chinese model that he showed a reporter look virtually identical.

Robinson went online and ordered one of Chinese models - to see if he could attach his equipment to the cheaper version.

"It was a dog, a pig," he said. "It didn't fly worth a damn."

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Bill Dedman

Investigative reporter Bill Dedman of NBC News is always looking for good investigative story ideas and documents. Bill received the 1989 Pulitzer Prize for investigative reporting, and has written full time for NBCNews.com since 2006.

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Michael Isikoff

Michael Isikoff joined NBC News in July 2010 as national investigative correspondent. He had been at Newsweek since 1994 as an investigative correspondent. He has written extensively on the U.S. government's war on terrorism, the Abu Ghraib scandal, campaign-finance and congressional ethics abuses, presidential politics and other national issues.



Amna Nawaz

Amna Nawaz is Bureau Chief/Correspondent for NBC News' Pakistan bureau. She reports for all NBC News platforms from across the country and the region. Previously, she reported for the network's investigative unit.



Mike Bruner, Investigations Editor, NBC News

Mike Bruner is the investigations editor at NBCNews.com. He's worked for the site (formerly msnbc.com) as a reporter and editor since August 1996. Before that, he was an editor at the San Francisco

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Azriel James Relph

Azriel James Relph is a researcher for NBC News Investigations. He is a graduate of the CUNY Graduate School of Journalism, and was a reporter for several years at the Hunts Point Express -- a South Bronx newspaper serving the poorest Congressional District in the United States. He has written for Newsweek, The Daily Beast, and MSNBC.com.



Robert Windrem

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M. Alex Johnson

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The New York Times

March 8, 2013

Visions of Drones Swarming U.S. Skies Hit Bipartisan Nerve

By **SCOTT SHANE** and **MICHAEL D. SHEAR**

WASHINGTON — The debate goes to the heart of a deeply rooted American suspicion about the government, the military and the surveillance state: the specter of drones streaking through the skies above American cities and towns, controlled by faceless bureaucrats and equipped to spy or kill.

That Big Brother imagery — conjured up by Senator Rand Paul of Kentucky during a more than 12-hour filibuster this week — has animated a surprisingly diverse swath of political interests that includes mainstream civil liberties groups, Republican and Democratic lawmakers, conservative research groups, liberal activists and right-wing conspiracy theorists.

They agree on little else. But Mr. Paul's soliloquy has tapped into a common anxiety on the left and the right about the dangers of unchecked government. And it has exposed fears about ultra-advanced technologies that are fueled by the increasingly fine line between science fiction and real life.

Drones have become the subject of urgent policy debates in Washington as lawmakers from both parties wrangle with President Obama over their use to prosecute the fight against terrorism from the skies above countries like Pakistan and Yemen.

But they are also a part of the popular culture — toys sold by Amazon; central plot points in "Homeland" and a dozen other television shows and movies; the subject of endless macabre humor, notably by The Onion; and even the subject of poetry. ("Ode to the MQ-9 Reaper," a serious work by the Brooklyn poet Joe Pan that was just published in the journal Epiphany, describes the drone as "ultra-cool & promo slick, a predatory dart" that is "as self-aware as silverware.")

Benjamin Wittes, a national security scholar at the Brookings Institution who has written extensively about drones, said he thought Mr. Paul's marathon was a "dumb publicity stunt." But he said it had touched a national nerve because the technology, with its myriad implications, had already deeply penetrated the culture.

“Over the last year or so, this thing that was the province of a small number of technologists and national security people has exploded into the larger public consciousness,” Mr. Wittes said.

On the right, Mr. Paul has become an overnight hero since his filibuster. Self-proclaimed defenders of the Constitution have shouted their approval on Twitter, using the hashtag #StandWithRand and declaring him to be a welcomed member of their less-is-better-government club.

“The day that Rand Paul ignited Liberty’s Torch inside the beltway!” one Tea Party activist wrote on Twitter. “May it never be extinguished!”

But even as the right swooned, the left did, too. Senator Ron Wyden of Oregon — the only Democrat to join Mr. Paul’s filibuster — said the unexpected array of political forces was just the beginning, especially as Congress and the public face the new technologies of 21st-century warfare.

“I believe there is a new political movement emerging in this country that’s shaking free of party moorings,” Mr. Wyden said. “Americans want a better balance between protecting our security and protecting our liberty.”

P. W. Singer, whose 2009 book “Wired for War: The Robotics Revolution and Conflict in the 21st Century” anticipated the broad impact of drones, said he believed they had shaken up politics because they were “a revolutionary technology, like the steam engine or the computer.”

“The discussion doesn’t fall along the usual partisan lines,” he said. The dozen states that have passed laws restricting drones do not fall into conventional red-blue divisions, nor do the score of states competing to be the site of the Federal Aviation Administration’s test sites for drones.

The serious issues raised by the government’s lethal drones seem inextricably mixed with the ubiquitous appearance of the technology in art, commerce and satire.

A four-minute video by the Air Force Research Laboratory on “micro aerial vehicles” shows a futuristic bee-size drone flying in an open window and taking out an enemy sniper with a miniature explosive payload. Since it was posted in 2009, it has been viewed hundreds of thousands of times and reposted all over the Web.

When Amazon advertised a six-inch model of the Predator, made by Maisto, in its toy section, people wrote politically charged mock reviews that became Internet hits: “This goes well,” one reviewer wrote, “with the Maisto Extraordinary Rendition playset, by the way — which gives you all the tools you need to kidnap the family pet and take him for interrogation at a neighbor’s house,

where the rules of the Geneva Convention may not apply. Loads of fun!”

Senator John McCain, Republican of Arizona, was not laughing Thursday when he took to the Senate floor to chastise Mr. Paul and defend the use of drones. In an interview with *The Huffington Post*, Mr. McCain dismissed Mr. Paul and the other critics of drones as “the wacko birds on right and left that get the media megaphone.”

But the issue is larger than Mr. Paul, whose ambitions may include a run for the presidency in 2016. For many, Mr. Paul gave voice to the dangers they whisper about to anyone who will listen: that the government is too powerful to be left unchecked.

“It’s not merely the black helicopter crowd of the folks on the far right,” said Mark Potok, a senior fellow at the Southern Poverty Law Center, which tracks extremist groups. “What Rand Paul had to say about drones absolutely fired up conspiracy theorists on the left as well as the right.”

Human Rights Watch plans to join other groups next month in starting an effort called the Campaign to Stop Killer Robots. The technology, fully autonomous weapons that are still at the drawing-board stage, would find and fire at their programmed targets without requiring a human being to pull the trigger.

Some national security experts find the campaign overwrought, but Mary Wareham, the advocacy director for the arms division of Human Rights Watch, noted that the Defense Department in November issued a policy directive on autonomous weapons that recognized the challenges they pose.

At the same time, there are people like Everett Wilkinson, a Tea Party organizer and self-proclaimed conspiracy theorist in Florida, who is hailing Mr. Paul as a “rock star for the Constitution.” On Mr. Wilkinson’s Web site, *Liberty.com*, he warns that the United States government is building “internment camps” for political dissidents. He is wary of what comes next.

“First they said we are just going to use drones to observe stuff, and then they put Hellfire missiles on them,” Mr. Wilkinson said. “How soon are we going to have drones overhead with Tasers on them?”

In Washington, Code Pink, a leftist group of antiwar activists, showed up with flowers and chocolates at Mr. Paul’s Senate offices on Thursday to thank him for standing up against abuses of power. Known around Capitol Hill mainly for disrupting Congressional hearings, the group had found a new champion.

“People say: ‘Oh, my God, Code Pink is praising Rand Paul. Hell has frozen over!’ ” said Medea Benjamin, a co-founder of the group. “But we were glued to C-Span to the bitter end of the filibuster. We were amazed to see the education of the public that was taking place, and that has never occurred before.”



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FAA to create 6 drone test sites in US



Major step toward opening American skies to unmanned aerial vehicles

UPDATED 18:11 PM EST, FEBRUARY 15, 2013 | JOAN LOWY, ASSOCIATED PRESS

WASHINGTON (AP) — In a major step toward opening U.S. skies to thousands of unmanned drones, federal officials Thursday solicited proposals to create six drone test sites around the country.

The Federal Aviation Administration also posted online a draft plan for protecting people's privacy from the eyes in the sky. The plan would require each test site to follow federal and state laws and make a privacy policy publicly available.

Privacy advocates worry that a proliferation of drones will lead to a "surveillance society" in which the movements of Americans are routinely monitored, tracked, recorded and scrutinized by the authorities.

The military has come to rely heavily on drones overseas. Now there is tremendous demand to use drones in the U.S. for all kinds of tasks that are too dirty, dull or dangerous for manned aircraft. Drones also are often cheaper than manned aircraft. The biggest market is expected to be state and local police departments.

The FAA is required by a law enacted a year ago to develop sites where civilian and military drones can be tested in preparation for integration into U.S. airspace that's currently limited to manned aircraft.

The law also requires that the FAA allow drones wide access to U.S. airspace by 2015, but the agency is behind schedule, and it's doubtful it will meet the deadline, the Transportation Department's inspector general said in a report last year.

The test sites are planned to evaluate what requirements are needed to ensure the drones don't collide with planes or endanger people or property on the ground. Remotely controlled drones don't have a pilot who can see other aircraft the way an onboard plane or helicopter pilot can.

There's also concern that links between drones and their on-the-ground operators can be broken or hacked, causing the operator to lose control of the drone. Military drones use encrypted GPS signals for navigation, which protects them from hacking, but the GPS signals used by civilian drones don't have that protection.

"Our focus is on maintaining and improving the safety and efficiency of the world's largest aviation system," Transportation Secretary Ray LaHood said in a statement. "This research will give us valuable information about how best to ensure the safe introduction of this advanced technology into our nation's skies."

The test sites are also expected to boost the local economy of the communities where they are located. About two dozen government-industry partnerships have been formed over the past year to compete for the sites.

"Today's announcement by the FAA is an important milestone on the path toward unlocking the potential of unmanned aircraft and creating thousands of American jobs," said Michael Toscano, president and CEO of the Association for Unmanned Vehicle Systems International.

"States across the country have been eager to receive this FAA designation because they recognize the incredible economic and job creation potential it would bring with it," he said in a statement.

Industry experts predict the takeoff of a multibillion-dollar market for civilian drones as soon as the FAA completes regulations to make sure they don't pose a safety hazard to other aircraft. Potential civilian users are as varied as the drones themselves. Power companies want them to monitor transmission lines. Farmers want to fly them over fields to detect which crops need water. Ranchers want them to count cows. Film companies want to use drones to help make movies. Journalists are exploring drones' newsgathering potential.

The FAA forecasts an estimated 10,000 civilian drones will be in use in the U.S. within five years.

The Defense Department says the demand for drones and their expanding missions requires routine and unfettered access to domestic airspace, including around airports and cities, for military testing and training. Currently, the military tests drones in specially designated swaths of airspace in mostly remote parts of the country where they are likely to encounter relatively few other aircraft.

The Customs and Border Patrol uses drones along the U.S.-Mexico border. And the FAA has granted several hundred permits to universities, police departments and other government agencies to use small, low-flying drones. For example, the sheriff's department in Montgomery County, Texas, has a 50-pound ShadowHawk helicopter drone intended to supplement its SWAT team.

The sheriff's department hasn't armed its drone, although the ShadowHawk can be equipped with a 40 mm grenade launcher and a 12-gauge shotgun. The prospect of armed drones patrolling U.S. skies has alarmed some lawmakers and their constituents. More than a dozen bills have been introduced in Congress and state legislatures to curb drone use and protect privacy.

President Barack Obama was asked Thursday about concerns that the administrations believes it's legal to strike American citizens abroad with drones and whether that's allowed

against citizens in the U.S. If not, how would he create a legal framework to help citizens know drone strikes can't be used against them?

"There's never been a drone used on an American citizen on American soil," the president said, speaking during an online chat sponsored by Google in which he was promoting his policy initiatives.

"We respect and have a whole bunch of safeguards in terms of how we conduct counterterrorism operations outside of the United States. The rules outside of the United States are going to be different than the rules inside the United States, in part because our capacity, for example, to capture terrorists in the United States are very different than in the foothills or mountains of Afghanistan or Pakistan.

He said he would work with Congress to make sure the American public understands "what the constraints are, what the legal parameters are, and that's something that I take very seriously."

Earlier this week, an FAA official told a meeting of potential test site bidders that aviation regulations prohibit dropping anything from aircraft, which could be interpreted to bar arming civilian drones, according to an industry official present at the meeting who requested anonymity because he wasn't authorized to speak publicly.

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Eric Holder: Drone strikes against Americans on U.S. soil are legal

March 5, 2013 | 4:09 pm | Modified: March 5, 2013 at 5:00 pm

1322 Comments



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Attorney General Eric Holder can imagine a scenario in which it would be constitutional to carry out a drone strike against an American on American soil, he wrote in a letter to Sen. Rand Paul, R-Ky.

"It is possible, I suppose, to imagine an extraordinary circumstance in which it would be necessary and appropriate under the Constitution and applicable laws of the United States for the President to authorize the military to use lethal force within the territory of the United States," Holder replied in a letter yesterday to Paul's question about whether Obama "has the power to authorize lethal force, such as a drone strike, against a U.S. citizen on U.S. soil, and without trial."

Paul condemned the idea. "The U.S. Attorney General's refusal to rule out the possibility of drone strikes on American citizens and on American soil is more than frightening – it is an affront the Constitutional due process rights of all Americans," he said in a statement.

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Holder noted that Paul's question was "entirely hypothetical [and] unlikely to occur," but cited the September 11, 2001 terrorist attacks as the type of incidents that might provoke such a response.

"Were such an emergency to arise, I would examine the particular facts and circumstances before advising the President on the scope of his authority," he concluded.

Sen. Mike Lee, R-Utah, an attorney and Judiciary Committee member, told *The Washington Examiner* last month that the drone policy so far outlined by the administration is too vague.

"That has the potential to swallow the rule," Lee said after the drone program white paper was leaked. "If you're going to regard somebody as presenting an imminent threat of an attack on the U.S. simply because you have concluded that they are an 'operational leader' or they are involved in planning an attack in one way or another, you find yourself giving way to much discretion to the government."

Lee said that the White House should release the formal legal analysis underpinning the drone program. "We know that in some instances where the government has released it

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February 18, 2013 | 11:16 am | Modified: February 18, 2013 at 12:05 pm

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House Minority Leader Nancy Pelosi, D-Calif., believes that President Obama doesn't necessarily have to announce that an American citizen suspected of terrorism has been killed in a drone strike.

"Maybe. It just depends," Pelosi replied when The Huffington Post asked her if "the administration should acknowledge when it targets a U.S. citizen in a drone strike." When Anwar al-Awlaki was killed in a drone strike, President Obama announced the killing within hours. "People just want to be protected," Pelosi also said. "And I saw that when we were fighting them on surveillance, the domestic surveillance. People just want to be protected: 'You go out there and do it. I'll criticize you, but I want to be protected.'"

Sen. Mike Lee, R-Utah, responded less blithely. "Anytime the government willfully executes a citizen, regardless of the circumstances, it is a very serious issue," Lee, a member of the Senate Judiciary Committee, said in a statement to *The Washington Examiner*. "As the body that oversees executive branch actions, at the very least, Congress should have a full accounting – even if it must sometimes be in a classified setting – of the specific considerations that went into the decision."

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The top House Democrat suggested that the disclosure issue "depends on the timing, because that's right — it's all about timing, imminence. What is it that could be in jeopardy if people know that happened at this time? I just don't know."

Lee also acknowledged the possibility of some situations that need for congressional review. "Government should always e details public where they can," he said in his statement. "When concerns about releasing certain details, the appropriate com perform oversight."

Pelosi suggested that she would have the same position if President George W. Bush were still in office. "Those opposed are pretty critical, and other people are just listening to see what this is and why this is necessary, because we're in a different world," she told HuffPo.

Lee wants Obama to reveal the Justice Department legal analysis underpinning the drone program to the Judiciary Committee, rather than just the intelligence committees in both chambers of Congress.

"If you're going to regard somebody as presenting an imminent threat of an attack on the U.S. simply because you have concluded that they are an 'operational leader' or they are involved in planning an attack in one way or another, you find yourself giving way to much discretion to the government," he told *The Examiner* in an interview after NBC revealed the DOJ white paper on the drone program.

"We know that in some instances where the government has released its legal analysis, it gets it wrong," Lee added.

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President Obama's white paper justification for carrying out drone strikes against U.S. citizens suspected of terrorism could "swallow the rule" guaranteeing the due process rights of Americans, Sen. Mike Lee, R-Utah, suggested today.

"There is nothing more serious than the taking of the life of a U.S. citizen by the U.S. government," Lee said in a phone interview with *The Washington Examiner* while discussing the Justice Department white paper that explains some of the rationale behind the drone strike counter-terrorism program.

"You would think that consistent with the principles of due process, the government shouldn't be able to kill one of its own citizens without some kind of showing that they present an imminent threat," he continued. "But when you dig a little bit deeper into this white paper . . . they have sort of a loose [definition] of 'imminent'."

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NBC News reported that it had obtained an unclassified DOJ white paper that articulated a broader claim of power to kill U.S. citizens suspected of terrorist activities.

"The condition that an operational leader present an 'imminent' threat of violent attack against the United States does not require the United States to have clear evidence that a specific attack on U.S. persons and interests will take place in the immediate future," NBC quotes the memo as saying.

"That has the potential to swallow the rule," Lee warned. "If you're going to regard somebody as presenting an imminent threat of an attack on the U.S. simply because you have concluded that they are an 'operational leader' or they are involved in planning an attack in one way or another, you find yourself giving way to much discretion to the government."

Lee said the president needs to be more transparent with Congress about the drone strike program as pertaining to American citizens.

"I certainly think that Members of Congress ought to have the they make public," he said. "They have not made that available to the Judiciary Committee I think I ought to have access to it."

The Senate Judiciary Committee has oversight jurisdiction of given Senate Intelligence Committee members access to a more detailed legal justification for the program. The lawmakers are not allowed to make copies, take notes, or reveal the memo to their staff.

"We know that in some instances where the government has released its legal analysis, it gets it wrong," Lee recalled, citing the D.C. Circuit Court of Appeals just repudiated the Obama Justice Department's legal analysis for making 'recess' appointments when Congress is in session.

The former appellate lawyer also criticized the White House for failing to identify a constitutional principle that would prevent the U.S. military from carrying out a drone strike on a suspected American terrorist in the United States.

"They ought to be able to articulate that," Lee told *The Examiner*. "To whatever extent they make a difference

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between their operations here and their operations elsewhere, they ought to have some explanation for that, and the mere fact that they don't have one is itself cause for concern."

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"I am not a lawyer and these are the kinds of things that are probably best expressed and explained by lawyers," White House Press Secretary Jay Carney told reporters when asked why the administration's argument for killing Americans overseas doesn't also allow Obama to order strikes within the country. "There are issues here about . . . feasibility of capture that I think are pertinent to that question."

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WASHINGTON

Politics

WH spox knows no constitutional impediment to drone strikes on Americans in U.S.A.

February 5, 2013 | 2:21 pm

9 Comments



Joel Gehrke
Commentary
Writer

The Washington Examiner

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White House Press Secretary Jay Carney could not identify a constitutional principle that would prevent President Obama from carrying out a drone strike on an American citizen in the United States.

"I am not a lawyer and these are the kinds of things that are probably best expressed and explained by lawyers," Carney said during the press briefing. "There are issues here about . . . feasibility of capture that I think are pertinent to that question."

The Fifth Amendment to the U.S. Constitution, in the Bill of Rights, says that "no person shall . . . be deprived of life, liberty, or property, without due process of law."

A Justice Department white paper emphasized the importance of believing that an American citizen overseas, such as terrorist leader Anwar al-Awlaki, is an imminent threat to Americans when debating a drone strike.

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"The condition that an operational leader present an 'imminent' threat of violent attack against the United States does not require the United States to have clear evidence that a specific attack on U.S. persons and interests will take place in the immediate future," the white paper, obtained by NBC News, said.

Carney also said that "These strikes are legal, they are ethical and they are wise," though he indicated that discussion of them at the upcoming CIA director confirmation hearings might not be legal.

"[D]iscussing classified matters in public hearings is generally not an appropriate thing to do or a legal thing to do," Carney said.

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March 26, 2013

Representative Shelley Hughes
State Capitol Building
Room #409
Juneau, AK 99801

Dear Representative Hughes,

The Greater Fairbanks Chamber of Commerce represents over 700 businesses and organizations in the greater Fairbanks area and our mission is to ensure a healthy economic environment. The Chamber supports the Alaska House of Representatives Concurrent Resolution No. 6, recognizing the Alaska Center for Unmanned Aircraft Systems Integration at the University of Alaska Fairbanks as a national leader in unmanned aircraft research and development, and establishing a legislative Task Force on Unmanned Aircraft Systems.

The University of Alaska has led the way for research on unmanned aircraft systems (UAS) and continues this pioneering work in its bid to become one of the nation’s six test sites for aircraft systems testing and research. The Resolution recognizes this substantial effort. More significantly, it establishes a legislative Task Force to address potential impacts and opportunities of unmanned aircraft systems for our state.

Alaska’s immense land mass and associated airspace presents opportunities no other state can offer for testing and flight training. Vast existing Military Operations Areas and expansive ground maneuver areas can easily support virtually all military applications for current and future UAS technology, and military UAS infrastructure can only complement civilian and commercial applications.

As with any new technology, a myriad of concerns must be addressed before unmanned aircraft become a common fixture in our National airspace. This resolution takes the necessary step to begin addressing those concerns to insure Alaska leads the way for this transformative and dynamic flight environment.

Sincerely,

Lisa Herbert
Executive Director

Terri Froese
Board of Directors, Chair

Tim Jones
Military Affairs Committee, Chair

Anna Atchison
Government Relations Committee, Chair

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Alaska State Legislature
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Membership of the Greater Fairbanks Chamber of Commerce



Ideas Changing the World

Federal Aviation Administration Proposes Unnecessary Privacy Regulations on Drone Test Sites

April 30, 2013

Unmanned aerial vehicles, commonly referred to as drones, have begun the slow transition from the military sector to the commercial sector. As part of the mandate from Congress, the Federal Aviation Administration (FAA) is charged with safely integrating civil drones into the existing airspace. The FAA is now seeking applications for establishing six test ranges but has recently proposed new privacy guidelines that would stifle innovation, say Jerry Brito, Eli Dourado and Adam Thierer of the Mercatus Center.

- As with any new technology, the public has been initially skeptical of this new technology but will likely adapt to it gradually as more than 10,000 drones enter the skies by 2020.
- Drone research and development is decentralized, meaning that many developers, from small companies to industry behemoths, are testing new capabilities.
- The FAA must find a balance between too many commercial restrictions, which will delay integration, and too few restrictions, which could pose safety risks.
- Drones have potential applications in law enforcement, national security, agricultural and earth science.

The FAA has proposed new privacy requirements for test range operators to address concerns about drones infringing on individuals' privacy.

- The FAA should refrain from making any guidelines on privacy because its expertise is solely in regulating aeronautics, not in Fourth Amendment jurisprudence, an area in which numerous laws already govern privacy, property and peeping toms.
- The fears about privacy infringements are also unsubstantiated, being based solely on hypothesized scenarios rather than actual events, the latter of which might require the courts, and not the FAA, to sort out.
- The FAA should allow nongovernmental privacy protection mechanisms to develop instead of stifling the creation of market-based solutions or voluntary codes of conduct.

The proposed privacy rules are inappropriate for this stage of development because they require the prohibitively expensive action of full disclosure to an individual who is inadvertently captured on camera. While the proposed privacy regulations are supposed to be implemented for test sites only, there is a risk that they could serve as a baseline for future legislation and rulemaking as full integration nears.

Source: Jerry Brito, Eli Dourado and Adam Thierer, "Federal Aviation Administration Unmanned Aircraft System Test Site Program," Mercatus Center, April 23, 2013.

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Federal Aviation Administration: Unmanned Aircraft System Test Site Program

Jerry Brito ^[1], Eli Dourado ^[2], Adam Thierer ^[3] | Apr 23, 2013

In the FAA Modernization and Reform Act of 2012 (FMRA),^[1] Congress tasked the Federal Aviation Administration (FAA) with integrating unmanned aircraft systems (UASs), sometimes referred to as unmanned aerial vehicles or drones, into the National Airspace System by September 2015. As part of that effort, Congress directed the FAA to establish six test ranges to serve as integration pilot projects.^[2] On February 22, 2013, the FAA issued a notice in the Federal Register announcing the process for selection of the sites and a request for public comment on its “proposed approach for addressing the privacy questions raised by the public and Congress with regard to the operation of unmanned aircraft systems within the test site program.”^[3]

The Technology Policy Program (TPP) of the Mercatus Center at George Mason University is dedicated to advancing knowledge of the impact of regulation on society. As part of its mission, TPP conducts careful and independent analyses employing contemporary economic scholarship to assess rulemaking proposals from the perspective of the public interest. Therefore, this comment on the FAA’s Notice of Availability and Request for Comments does not represent the views of any particular affected party or special interest group, but is designed to assist the administration as it carries out Congress’s mandate to safely integrate UASs into the National Airspace System.

CONCEIVING OF AIRSPACE AS A PLATFORM FOR INNOVATION

In analyzing the proposed policies being developed to carry out Congress’s mandate, it is important to remember that the purpose of the mandate is to open America’s skies to commercial UAS use in order to reap the social benefits that such use will bring.^[4] The commercial use of UASs is an important step toward the efficient utilization of airspace. When an important national resource like airspace arbitrarily excludes commercial uses, the social costs of such exclusion may not always be immediately evident. For example, until 1989, commercial use of the Internet was prohibited. As a 1982 MIT handbook for the use of ARPAnet, the progenitor of what would become the Internet, warned students:

It is considered illegal to use the ARPAnet for anything which is not in direct support of government business...Sending electronic mail over the ARPAnet for commercial profit or political purposes is both anti-social and illegal. By sending such messages,

you can offend many people, and it is possible to get MIT in serious trouble with the government agencies which manage the ARPAnet[5]

Undoubtedly, these commercial restrictions were put in place with the best of intentions. Had rulemakers understood the nature of the revolution that they were forestalling, they probably would never have imposed restrictions on commercial use of the Internet. They were simply unable to imagine the enormous benefits that would be generated by allowing the Internet to become an open platform for social and commercial innovation.

Vint Cerf, one of the “fathers of the Internet,” credits “permissionless innovation” for the economic benefits that the Internet has generated.[6] As an open platform, the Internet allows entrepreneurs to try new business models and offer new services without seeking the approval of regulators beforehand.

Like the Internet, airspace is a platform for commercial and social innovation. We cannot accurately predict to what uses it will be put when restrictions on commercial use of UASs are lifted. Nevertheless, experience shows that it is vital that innovation and entrepreneurship be allowed to proceed without *ex ante* barriers imposed by regulators.[7] We therefore urge the FAA not to impose *any* prospective restrictions on the use of commercial UASs without clear evidence of actual, not merely hypothesized, harm.

PRIVACY AND COMMERCIAL UASS

The FAA's proposed privacy requirements for test range operators address concerns about hypothesized impositions on individual privacy. In view of the importance of “permissionless innovation” for the development of airspace as a platform for commercial and social entrepreneurship, we believe that the FAA should not impose any additional privacy rules for UAS Test Sites, for four reasons.

First, the FAA does not have the authority to impose such requirements. A plain reading of Subtitle B of the FMRA (the relevant section that covers UASs) reveals that Congress's charge to the FAA is simply to ensure the safe integration of UASs into the national airspace.[8] There are over 20 references to safety in the section, but not one reference to privacy or related concerns.[9] Additionally, the specific section mandating the establishment of test ranges lists six requirements that the administrator must meet in doing so.[10] These requirements exclude privacy considerations, suggesting that Congress did not intend to give the FAA any authority to include privacy consideration in its requirements. This view is buttressed by the fact that Congress is now considering the Drone Aircraft Privacy and Transparency Act of 2013, which would amend FMRA to require the FAA to develop privacy regulations in conjunction with the Federal Trade Commission and the Departments of Commerce and Homeland Security[11]. The implication is that at least some in Congress do not believe the FAA now has a privacy mandate. These facts comport with the FAA's history as a safety regulator. Indeed, the FAA's mission is “to provide the safest, most efficient aerospace system in the world,”[12] not to regulate for privacy.

Second, there is no evidence of a materialized harm that calls out for the proposed privacy requirements for test range operators. Prospective regulation at this juncture necessarily involves hypothesizing about the privacy violations that might arise. Since many of these

harms may never materialize, forward-looking regulation is likely to overprotect privacy at the expense of innovation.

Third, as the proposed privacy requirements make clear, there already exist “federal, state, and other laws regarding the protection of an individual’s right to privacy.”[13] If harms due to privacy violations can be shown in court, damages will be awarded to the victims of those violations. Property law already governs trespass, and new court rulings may well expand the body of such law to encompass trespass by commercial UASs by focusing on actual cases and controversies, not merely imaginary hypotheticals. In particular, state “peeping Tom” laws already prohibit spying into individual homes.[14] Privacy torts—including the tort of intrusion upon seclusion—may also evolve in response to technological change and provide more avenues of recourse to plaintiffs seeking to protect their privacy rights.[15]

Fourth, adequate time should be afforded for the development of nongovernmental privacy protection mechanisms, ranging from market-based solutions to voluntary codes of conduct to individual self-help. The UAS industry has already developed a set of industry best practices, which include respect for the privacy of individuals.[16] These guidelines will likely be refined over time to meet new challenges and concerns. Industry norms and practices will also be influenced by pressure from media, activists, and consumers. Such less-restrictive solutions can greatly reduce the need for administrative intervention and can therefore increase the “permissionlessness” of airspace as a platform for innovation.

SOCIAL ADAPTATION

Patience is also wise here not only because it provides breathing space for future innovation, but also because it provides an opportunity to observe both the evolution of societal attitudes toward this new technology and how citizens adapt to it. It is possible that citizen attitudes about UASs will follow a familiar cycle we have seen play out in other contexts of initial *resistance*, gradual *adaptation*, and then eventual *assimilation* of that new technology into society.[17] As technology author Larry Downes has observed, “after the initial panic, we almost always embrace the service that once violated our visceral sense of privacy.”[18]

The introduction and evolution of the camera and photography provides a useful comparison in this regard. The camera was initially viewed as a highly disruptive force when photography became more widespread in the late 1800s. Indeed, the most important essay ever written on privacy law, Samuel D. Warren and Louis D. Brandeis’s famous 1890 *Harvard Law Review* essay on “The Right to Privacy,” decried the spread of the device.[19] The authors lamented that “instantaneous photographs and newspaper enterprise have invaded the sacred precincts of private and domestic life” and claimed that “numerous mechanical devices threaten to make good the prediction that ‘what is whispered in the closet shall be proclaimed from the house-tops.’”[20]

Similar fears often animate criticisms of UASs today. But just as personal norms and cultural attitudes toward cameras and public photography evolved quite rapidly over a century ago, attitudes about UASs may evolve in coming years. Just as cameras and photography became an ingrained part of the human experience, UASs might, as well.

And just as social norms and etiquette evolved to address those who would use cameras in inappropriate, privacy-invasive ways, the same could happen for UASs.

Toward that end, just as we did not preemptively foreclose photographic innovation in the late 1800s, we should not foreclose UAS innovation today with overly prescriptive privacy regulations. Let innovation continue, and address tangible harms as they develop, if they do.

APPLICATION TO THE PROPOSED PRIVACY REQUIREMENTS

In light of these arguments, section (1) of the proposed privacy rules is inappropriate for the current stage of experimentation with commercial UASs. The requirement that site operators develop privacy policies that are informed by Fair Information Practice Principles is quite onerous for commercial operators of UASs, and its cost will likely outweigh any hypothetical benefits.

Consider, for example, a real estate agent that uses an UAS to create a detailed, three-dimensional photograph of the exterior of a property that is for sale. In doing so, the UAS inadvertently captures images of passersby in the street adjacent the property. According to so-called Fair Information Practice Principles,[21] must the UAS operator treat the passersby as potential victims of privacy violation? If so, then would the following requirements apply?

- To give all passersby notice of data collection before any photos are taken.
- To publicly identify the real estate agent before any photos are taken.
- To ensure that passersby understand that pictures of their faces and information about their whereabouts may be used on a real estate listing website.
- To give passersby a choice to opt-in or opt-out of such photography.
- To ensure that all inadvertently photographed passersby are given access to all photographs, including ones that are not used on the real estate listing website.
- To take expensive security measures to protect photos that were taken in a public place.

If adhered to strictly, Fair Information Practice Principles could make it prohibitively costly to use commercial UASs in applications as benign as taking photographs near public spaces. It is not clear that they could comply, in this context or any other, with Executive Order 13563, which requires that any regulation promulgated by an executive agency be cost-beneficial. It should also be noted that Fair Information Practice Principles are law nowhere else in the federal government.

CONCLUSION

While the FAA makes clear in its Notice that the privacy requirements it proposes are only applicable to the test site operators and "are not intended to pre-determine the long-term policy and regulatory framework under which commercial UASs would operate,"[22] it would be unreasonable to believe that the precedent set in this proceeding will not affect future deliberations. Indeed, the actions the FAA takes in this proceeding will begin to set the baseline for future UAS regulation.

The FAA further notes that the purpose of the privacy requirements are simply to “assure maximum transparency of privacy policies associated with UAS test site operations in order to engage all stakeholders in discussion about which privacy issues are raised by UAS operations and how law, public policy, and the industry practices should respond to those issues in the long run.”[23] Unfortunately, by mandating that test site operators issue privacy policies and that those policies be informed by Fair Information Practice Principles, the FAA would be excluding an important possible alternative from the discussion: some operators might choose not to issue a privacy policy or adopt a non-FIPPs-compliant policy. If the true purpose of the pilot programs is “to develop a body of data and operational experiences to inform integration and the safe operation of these aircraft in the National Airspace System,” then the FAA should seek not just geographic and climatic diversity, but policy diversity as well.

We therefore urge the FAA to strike section (1) of its proposed privacy regulations and rely exclusively on existing law and other mechanisms to protect individuals’ privacy rights. We believe that such an approach would have the virtue of protecting individual rights, fostering the use of airspace as a platform for innovation, and allowing the scope of any necessary future privacy laws to be narrowly tailored by actual cases and controversies that emerge. To the extent that it remains the subject of public concern, the FAA should recognize its lack of authority on the matter, leaving further deliberations about the privacy implications of UASs to Congress, where elected officials can consider these concerns while weighing the benefits and costs of potential regulation.

Endnotes

1. FAA Modernization and Reform Act of 2012, Pub L. No. 112-95, 126 Stat. 11 (hereinafter “FMRA”).
 2. *Id.*, § 332(c).
 3. Unmanned Aircraft System Test Site Program, 78 Fed. Reg. 12259 (Feb. 22, 2013) (hereinafter, “FAA Notice”). It should be noted that, as will be shown below, Congress has raised no such privacy questions and has clearly omitted privacy considerations in its mandate to the FAA.
 4. Jerry Brito, “Domestic Drones Are Coming Your Way,” *Reason.com*, March 11, 2013, [http://reason.com/archives/2013/03/11/domestic](http://reason.com/archives/2013/03/11/domestic-drones-are-coming-your-way) [4] -drones-are-coming-your-way. Chris Anderson, “Why We Shouldn’t Fear Personal Drones,” *Time*, January 31, 2013, [http://ideas.time](http://ideas.time.com/2013/01/31/why-we-shouldnt-fear-personal-drones) [5] .com/2013/01/31/why-we-shouldnt-fear-personal-drones.
 5. L. Gordon Crovitz. “WeHelpedBuildThat.com,” *Wall Street Journal*, July 29, 2012. [http://online.wsj.com/article/SB10000872396390443931](http://online.wsj.com/article/SB10000872396390443931_6404577555073157895692.html) [6] 404577555073157895692.html
 6. Vinton Cerf. “Keep the Internet Open,” *New York Times*, May 24, 2012. [http://www.nytimes.com/2012/05/25/opinion/keep-the-internet](http://www.nytimes.com/2012/05/25/opinion/keep-the-internet-open.html) [7] -open.html
 7. As Brookings Institution senior fellow John Villasenor has recently explained, When considering potential new statutory UAS privacy protections, it is helpful to keep in mind what has occurred with the Internet and mobile telephones, two technologies that are associated with privacy threats that are in some respects much more significant than those that will arise from unmanned aircraft. Both the Internet and mobile phones grew as fast as their underlying technologies enabled. As a result, the public and legislative dialogue regarding how best to address the privacy issues they raise has been conducted with a strong appreciation of their benefits. By contrast, while the privacy concerns associated with domestic UAS are real and deserving of attention, they are getting significant focus long before the potential benefits of the technology are widely recognized. . . .
- If, in 1995, comprehensive legislation to protect Internet privacy had been enacted, it would have utterly failed to anticipate

the complex ties that arose after the turn of the century with the growth of social networking and location-based wireless services. The Internet has proven useful and valuable in ways that were difficult to imagine over a decade and a half ago, and it has created privacy challenges that were equally difficult to imagine. Legislative initiatives in the mid-1990s to heavily regulate the Internet in the name of privacy would likely have impeded its growth while also failing to address the more complex privacy issues that arose years later.

John Villasenor, "Observations from Above: Unmanned Aircraft Systems and Privacy," *Harvard Journal of Law & Public Policy* 36, no. 2 (2013): 517.

8. FMRA §§ 331–336.

9. *Id.*

10. FMRA § 332(c)(2)(A)–(F).

11. H.R. 1262, 113th Cong. 1st Sess. (1st Sess. 2013).

12. "Mission," Federal Aviation Administration, last modified April 23, 2010, <http://www.faa.gov/about/mission/> [8].

13. FAA Notice at 12260.

14. For example, see Va. Code Ann. § 18.2–130, Peeping or spying into dwelling or enclosure.

15. Restatement (Second) of Torts §§ 652B (1977).

16. "Unmanned Aircraft System Operations Industry 'Code of Conduct,'" Association for Unmanned Vehicle Systems International, accessed April 19, 2013, <http://www.auvsi.org/conduct> [9].

17. Adam Thierer, "Technopanics, Threat Inflation, and the Danger of an Information Technology Precautionary Principle," *Minnesota Journal of Law, Science & Technology* 14, no. 1 (2013): 309–386.

18. Larry Downes, "A Rational Response to the Privacy 'Crisis,'" *Cato Institute Policy Analysis* no. 716 (Jan. 7, 2013): 10.

19. Samuel D. Warren & Louis D. Brandeis, "The Right to Privacy," *Harvard Law Review* 4 (1890): 193.

20. *Id.*, at 195.

21. White House, *Consumer Data Privacy in a Networked World: A Framework for Protecting Privacy and Promoting Innovation in the Global Digital Economy* (Washington, DC, February 2012), 1, <http://www.whitehouse.gov/sites/default/files/privacy-final.pdf> [10]. (listing as FIPPs: Transparency, Individual Control, Respect for Context, Security, Access, Accuracy, Focused Collection, and Accountability.)

22. FAA Notice, 12260.

23. *Id.*, 12259.

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- [8] <http://www.faa.gov/about/mission/>
- [9] <http://www.auvsi.org/conduct>
- [10] <http://www.whitehouse.gov/sites/default/files/privacy-final.pdf>



FEDERAL AVIATION ADMINISTRATION

Unmanned Aircraft System Test Site Program

Docket No: FAA-2013-0061

By Jerry Brito, Eli Dourado, and Adam Thierer

In the FAA Modernization and Reform Act of 2012 (FMRA),¹ Congress tasked the Federal Aviation Administration (FAA) with integrating unmanned aircraft systems (UASs), sometimes referred to as unmanned aerial vehicles or drones, into the National Airspace System by September 2015. As part of that effort, Congress directed the FAA to establish six test ranges to serve as integration pilot projects.² On February 22, 2013, the FAA issued a notice in the Federal Register announcing the process for selection of the sites and a request for public comment on its “proposed approach for addressing the privacy questions raised by the public and Congress with regard to the operation of unmanned aircraft systems within the test site program.”³

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CONCEIVING OF AIRSPACE AS A PLATFORM FOR INNOVATION

In analyzing the proposed policies being developed to carry out Congress’s mandate, it is important to remember that the purpose of the mandate is to open America’s skies to commercial UAS use in order to reap the social benefits that such use will bring.⁴ The commercial use of UASs is an important step toward the efficient utilization of airspace. When an important national resource like airspace arbitrarily excludes commercial uses, the social costs of such exclusion may not always be immediately evident. For example, until 1989, commercial use of the

1. FAA Modernization and Reform Act of 2012, Pub L. No. 112-95, 126 Stat. 11 (hereinafter “FMRA”).

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4. Jerry Brito, “Domestic Drones Are Coming Your Way,” *Reason.com*, March 11, 2013, <http://reason.com/archives/2013/03/11/domestic-drones-are-coming-your-way>. Chris Anderson, “Why We Shouldn’t Fear Personal Drones,” *Time*, January 31, 2013, <http://ideas.time.com/2013/01/31/why-we-shouldnt-fear-personal-drones>.

For more information, contact:
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Mercatus Center at George Mason University
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Internet was prohibited. As a 1982 MIT handbook for the use of ARPAnet, the progenitor of what would become the Internet, warned students:

It is considered illegal to use the ARPAnet for anything which is not in direct support of government business...Sending electronic mail over the ARPAnet for commercial profit or political purposes is both anti-social and illegal. By sending such messages, you can offend many people, and it is possible to get MIT in serious trouble with the government agencies which manage the ARPAnet.⁵

Undoubtedly, these commercial restrictions were put in place with the best of intentions. Had rulemakers understood the nature of the revolution that they were forestalling, they probably would never have imposed restrictions on commercial use of the Internet. They were simply unable to imagine the enormous benefits that would be generated by allowing the Internet to become an open platform for social and commercial innovation.

Vint Cerf, one of the “fathers of the Internet,” credits “permissionless innovation” for the economic benefits that the Internet has generated.⁶ As an open platform, the Internet allows entrepreneurs to try new business models and offer new services without seeking the approval of regulators beforehand.

Like the Internet, airspace is a platform for commercial and social innovation. We cannot accurately predict to what uses it will be put when restrictions on commercial use of UASs are lifted. Nevertheless, experience shows that it is vital that innovation and entrepreneurship be allowed to proceed without *ex ante* barriers imposed by regulators.⁷ We therefore urge the FAA not to impose *any* prospective restrictions on the use of commercial UASs without clear evidence of actual, not merely hypothesized, harm.

PRIVACY AND COMMERCIAL UASS

The FAA’s proposed privacy requirements for test range operators address concerns about hypothesized impositions on individual privacy. In view of the importance of “permissionless innovation” for the development of airspace as a platform for commercial and social entrepreneurship, we believe that the FAA should not impose any additional privacy rules for UAS Test Sites, for four reasons.

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5. L. Gordon Crovitz. “WeHelpedBuildThat.com,” *Wall Street Journal*, July 29, 2012. <http://online.wsj.com/article/SB10000872396390443931404577555073157895692.html>

6. Vinton Cerf. “Keep the Internet Open,” *New York Times*, May 24, 2012. <http://www.nytimes.com/2012/05/25/opinion/keep-the-internet-open.html>

7. As Brookings Institution senior fellow John Villasenor has recently explained,

When considering potential new statutory UAS privacy protections, it is helpful to keep in mind what has occurred with the Internet and mobile telephones, two technologies that are associated with privacy threats that are in some respects much more significant than those that will arise from unmanned aircraft. Both the Internet and mobile phones grew as fast as their underlying technologies enabled. As a result, the public and legislative dialogue regarding how best to address the privacy issues they raise has been conducted with a strong appreciation of their benefits. By contrast, while the privacy concerns associated with domestic UAS are real and deserving of attention, they are getting significant focus long before the potential benefits of the technology are widely recognized. . . .

If, in 1995, comprehensive legislation to protect Internet privacy had been enacted, it would have utterly failed to anticipate the complexities that arose after the turn of the century with the growth of social networking and location-based wireless services. The Internet has proven useful and valuable in ways that were difficult to imagine over a decade and a half ago, and it has created privacy challenges that were equally difficult to imagine. Legislative initiatives in the mid-1990s to heavily regulate the Internet in the name of privacy would likely have impeded its growth while also failing to address the more complex privacy issues that arose years later.

John Villasenor, “Observations from Above: Unmanned Aircraft Systems and Privacy,” *Harvard Journal of Law & Public Policy* 36, no. 2 (2013): 517.

FMRA (the relevant section that covers UASs) reveals that Congress's charge to the FAA is simply to ensure the safe integration of UASs into the national airspace.⁸ There are over 20 references to safety in the section, but not one reference to privacy or related concerns.⁹ Additionally, the specific section mandating the establishment of test ranges lists six requirements that the administrator must meet in doing so.¹⁰ These requirements exclude privacy considerations, suggesting that Congress did not intend to give the FAA any authority to include privacy consideration in its requirements. This view is buttressed by the fact that Congress is now considering the Drone Aircraft Privacy and Transparency Act of 2013, which would amend FMRA to require the FAA to develop privacy regulations in conjunction with the Federal Trade Commission and the Departments of Commerce and Homeland Security.¹¹ The implication is that at least some in Congress do not believe the FAA now has a privacy mandate. These facts comport with the FAA's history as a safety regulator. Indeed, the FAA's mission is "to provide the safest, most efficient aerospace system in the world,"¹² not to regulate for privacy.

Second, there is no evidence of a materialized harm that calls out for the proposed privacy requirements for test range operators. Prospective regulation at this juncture necessarily involves hypothesizing about the privacy violations that might arise. Since many of these harms may never materialize, forward-looking regulation is likely to overprotect privacy at the expense of innovation.

Third, as the proposed privacy requirements make clear, there already exist "federal, state, and other laws regarding the protection of an individual's right to privacy."¹³ If harms due to privacy violations can be shown in court, damages will be awarded to the victims of those violations. Property law already governs trespass, and new court rulings may well expand the body of such law to encompass trespass by commercial UASs by focusing on actual cases and controversies, not merely imaginary hypotheticals. In particular, state "peeping Tom" laws already prohibit spying into individual homes.¹⁴ Privacy torts—including the tort of intrusion upon seclusion—may also evolve in response to technological change and provide more avenues of recourse to plaintiffs seeking to protect their privacy rights.¹⁵

Fourth, adequate time should be afforded for the development of nongovernmental privacy protection mechanisms, ranging from market-based solutions to voluntary codes of conduct to individual self-help. The UAS industry has already developed a set of industry best practices, which include respect for the privacy of individuals.¹⁶ These guidelines will likely be refined over time to meet new challenges and concerns. Industry norms and practices will also be influenced by pressure from media, activists, and consumers. Such less-restrictive solutions can greatly reduce the need for administrative intervention and can therefore increase the "permissionlessness" of airspace as a platform for innovation.

SOCIAL ADAPTATION

Patience is also wise here not only because it provides breathing space for future innovation, but also because it provides an opportunity to observe both the evolution of societal attitudes toward this new technology and how citizens adapt to it. It is possible that citizen attitudes about UASs will follow a familiar cycle we have seen play out in other contexts of initial *resistance*, gradual *adaptation*, and then eventual *assimilation* of that new technology

8. FMRA §§ 331–336.

9. *Id.*

10. FMRA § 332(c)(2)(A)–(F).

11. H.R. 1262, 113th Cong. 1st Sess. (1st Sess. 2013).

12. "Mission," Federal Aviation Administration, last modified April 23, 2010, <http://www.faa.gov/about/mission/>.

13. FAA Notice at 12260.

14. For example, see Va. Code Ann. § 18.2–130, Peeping or spying into dwelling or enclosure.

15. Restatement (Second) of Torts § 652B (1977).

16. "Unmanned Aircraft System Operations Industry 'Code of Conduct,'" Association for Unmanned Vehicle Systems International, accessed April 19, 2013, <http://www.auvsi.org/conduct>.

into society.¹⁷ As technology author Larry Downes has observed, “after the initial panic, we almost always embrace the service that once violated our visceral sense of privacy.”¹⁸

The introduction and evolution of the camera and photography provides a useful comparison in this regard. The camera was initially viewed as a highly disruptive force when photography became more widespread in the late 1800s. Indeed, the most important essay ever written on privacy law, Samuel D. Warren and Louis D. Brandeis’s famous 1890 *Harvard Law Review* essay on “The Right to Privacy,” decried the spread of the device.¹⁹ The authors lamented that “instantaneous photographs and newspaper enterprise have invaded the sacred precincts of private and domestic life” and claimed that “numerous mechanical devices threaten to make good the prediction that ‘what is whispered in the closet shall be proclaimed from the house-tops.’”²⁰

Similar fears often animate criticisms of UASs today. But just as personal norms and cultural attitudes toward cameras and public photography evolved quite rapidly over a century ago, attitudes about UASs may evolve in coming years. Just as cameras and photography became an ingrained part of the human experience, UASs might, as well. And just as social norms and etiquette evolved to address those who would use cameras in inappropriate, privacy-invasive ways, the same could happen for UASs.

Toward that end, just as we did not preemptively foreclose photographic innovation in the late 1800s, we should not foreclose UAS innovation today with overly prescriptive privacy regulations. Let innovation continue, and address tangible harms as they develop, if they do.

APPLICATION TO THE PROPOSED PRIVACY REQUIREMENTS

In light of these arguments, section (1) of the proposed privacy rules is inappropriate for the current stage of experimentation with commercial UASs. The requirement that site operators develop privacy policies that are informed by Fair Information Practice Principles is quite onerous for commercial operators of UASs, and its cost will likely outweigh any hypothetical benefits.

Consider, for example, a real estate agent that uses an UAS to create a detailed, three-dimensional photograph of the exterior of a property that is for sale. In doing so, the UAS inadvertently captures images of passersby in the street adjacent the property. According to so-called Fair Information Practice Principles,²¹ must the UAS operator treat the passersby as potential victims of privacy violation? If so, then would the following requirements apply?

- To give all passersby notice of data collection before any photos are taken.
- To publicly identify the real estate agent before any photos are taken.
- To ensure that passersby understand that pictures of their faces and information about their whereabouts may be used on a real estate listing website.
- To give passersby a choice to opt-in or opt-out of such photography.
- To ensure that all inadvertently photographed passersby are given access to all photographs,

17. Adam Thierer, “Technopanics, Threat Inflation, and the Danger of an Information Technology Precautionary Principle,” *Minnesota Journal of Law, Science & Technology* 14, no. 1 (2013): 309–386.

18. Larry Downes, “A Rational Response to the Privacy ‘Crisis,’” *Cato Institute Policy Analysis* no. 716 (Jan. 7, 2013): 10.

19. Samuel D. Warren & Louis D. Brandeis, “The Right to Privacy,” *Harvard Law Review* 4 (1890): 193.

20. *Id.*, at 195.

21. White House, *Consumer Data Privacy in a Networked World: A Framework for Protecting Privacy and Promoting Innovation in the Global Digital Economy* (Washington, DC, February 2012), 1, <http://www.whitehouse.gov/sites/default/files/privacy-final.pdf>. (listing as FIPPs: Transparency, Individual Control, Respect for Context, Security, Access, Accuracy, Focused Collection, and Accountability.)

including ones that are not used on the real estate listing website.

- To take expensive security measures to protect photos that were taken in a public place.

If adhered to strictly, Fair Information Practice Principles could make it prohibitively costly to use commercial UASs in applications as benign as taking photographs near public spaces. It is not clear that they could comply, in this context or any other, with Executive Order 13563, which requires that any regulation promulgated by an executive agency be cost-beneficial. It should also be noted that Fair Information Practice Principles are law nowhere else in the federal government.

CONCLUSION

While the FAA makes clear in its Notice that the privacy requirements it proposes are only applicable to the test site operators and “are not intended to pre-determine the long-term policy and regulatory framework under which commercial UASs would operate,”²² it would be unreasonable to believe that the precedent set in this proceeding will not affect future deliberations. Indeed, the actions the FAA takes in this proceeding will begin to set the baseline for future UAS regulation.

The FAA further notes that the purpose of the privacy requirements are simply to “assure maximum transparency of privacy policies associated with UAS test site operations in order to engage all stakeholders in discussion about which privacy issues are raised by UAS operations and how law, public policy, and the industry practices should respond to those issues in the long run.”²³ Unfortunately, by mandating that test site operators issue privacy policies and that those policies be informed by Fair Information Practice Principles, the FAA would be excluding an important possible alternative from the discussion: some operators might choose not to issue a privacy policy or adopt a non-FIPPs-compliant policy. If the true purpose of the pilot programs is “to develop a body of data and operational experiences to inform integration and the safe operation of these aircraft in the National Airspace System,” then the FAA should seek not just geographic and climatic diversity, but policy diversity as well.

We therefore urge the FAA to strike section (1) of its proposed privacy regulations and rely exclusively on existing law and other mechanisms to protect individuals’ privacy rights. We believe that such an approach would have the virtue of protecting individual rights, fostering the use of airspace as a platform for innovation, and allowing the scope of any necessary future privacy laws to be narrowly tailored by actual cases and controversies that emerge. To the extent that it remains the subject of public concern, the FAA should recognize its lack of authority on the matter, leaving further deliberations about the privacy implications of UASs to Congress, where elected officials can consider these concerns while weighing the benefits and costs of potential regulation.

22. FAA Notice, 12260.

23. *Id.*, 12259.

latimes.com/news/nationworld/nation/la-na-drone-race-20130408,0,115048.story

This just in ...

latimes.com

States in a race to secure drone testing

Groups in 37 states are vying to become one of six federally designated sites for testing the remotely piloted crafts for use in the nation's airspace. They see a chance to generate jobs.

By Richard Simon, Los Angeles Times

3:30 AM PDT, April 8, 2013

WASHINGTON — Although the prospect of drones flying over U.S. cities is generating cries of spies in the skies, groups from California to Florida are fiercely competing to become one of six federally designated sites for testing how the remotely piloted aircraft can safely be incorporated into the nation's airspace.

North Dakota boasts of its "minimal air traffic congestion." North Carolina, whose license plates read "First in Flight," cites its aviation history. California pitches its diverse geography: desert, mountains and ocean.

Technically, the designation itself offers no money, but 50 groups in 37 states have entered the Federal Aviation Administration competition. States see the designation as an opportunity to generate jobs from a burgeoning industry.

"Clearly, we wouldn't be interested unless we thought there was money," said Bob Knauff, a retired general leading a New York-Massachusetts bid.

And so the pitches keep coming. Oklahoma notes its experience in testing drones for the military. Arizona boasts of its nearly year-round "perfect flying weather." Florida, on the other hand, sees its sometimes severe weather a plus for testing drones in all kinds of conditions.

And the leader of a joint effort by Alaska, Hawaii and Oregon says, "We think we bring something to the table that is going to be hard to match," citing the diversity of environments and "massive amounts" of "relatively unpopulated airspace," especially up in the Last Frontier.

Not everyone, however, is so enthusiastic.

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Even as the competition rages, lawmakers from city halls to Congress are writing legislation to restrict drone flights. The FAA also is getting an earful from a public anxious about drones invading their privacy.

"This is a highly visible step toward a Big Brother-like state," a Wisconsin resident complained to the FAA.

Those vying for test sites say that privacy concerns should be addressed separately from the testing. But they are aware of the concerns.

North Carolina has proposed testing in airspace over crops. "Corn doesn't care" about drones flying overhead, said Kyle Snyder, director of the NextGen Air Transportation Center at North Carolina State University. Still, the FAA has directed that existing privacy laws be obeyed during testing.

Those bidding for test sites — in many cases alliances of economic development groups, universities and aerospace companies — believe that if they land a test site, drone manufacturers will follow.

Aerospace research firm Teal Group Corp. estimated that worldwide drone spending will almost double over the next decade to \$11.4 billion. Thousands of drones are expected to be deployed over the U.S. within the next five years for all sorts of chores, including inspecting pipelines, scouting film locations, searching for lost hikers, helping police track criminal suspects.

"Simply put, unmanned aircraft systems are the next big thing in the aerospace industry," California Assemblyman Al Muratsuchi (D-Torrance), chairman of the California Assembly Select Committee on Aerospace, said at a recent Sacramento hearing.

Florida, which is investing \$1.4 million in its pitch, sees drones as a way to recover from the end of the space shuttle program. Nevada officials have said they see an opportunity to become the "Silicon Valley of unmanned aerial systems."

The FAA, which will select the six test sites by the end of the year, was directed by Congress to draw up rules by 2015 for drone flights in U.S. airspace. Among those pushing for the legislation was the 49-member Congressional Unmanned Systems Caucus, founded by Rep. Howard P. "Buck" McKeon (R-Santa Clarita), who has cited the potential for jobs and improvements to public safety and emergency response times from integrating drones into the nation's airspace.

The FAA has largely left it to the applicants to propose the parameters for the test sites.

North Carolina proposes a range just 14 miles long and four miles wide; other states propose ranges that take in hundreds of miles of restricted airspace, generally over lightly populated areas. Two California groups propose testing over the desert and ocean and at small airports.

In Maryland, a group led by the University System of Maryland has proposed testing over the Chesapeake Bay, among other places. New York and Massachusetts propose testing over the Adirondacks and Cape Cod.

Tests initially are expected to focus on small drones, typically 50 pounds or less, flying at altitudes of up to 5,000 to 10,000 feet, but eventually could include bigger drones like the ones used in combat — but unarmed.

Some states hoping to be named test sites have combined forces, seeing strength in numbers. Virginia and New Jersey are working together.

In California, groups based in Ventura and Kern counties, with partners from throughout the state, are bidding to become test sites, but state officials worry the intrastate competition could hurt California's chances.

Although states aren't saying much publicly about their bids for fear of helping their competitors, they are looking for any edge they can get.

North Dakota, to highlight its expertise on drones, noted that one of its universities was the first in the nation to offer a bachelor's degree in "unmanned aircraft systems operations." The governor has allocated \$1 million for the state's bid and pledged an additional \$4 million to support the testing if North Dakota is selected.

Ohio noted that it was home to development of the "world's first unmanned aerial system," a sort of flying bomb known as an "aerial torpedo" developed in 1918.

richard.simon@latimes.com

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① John Madden = DMVA director
Steve Haddler

DMVA director
thruoutland security

call from Mead Treadwell 5:20pm

Aerospace States Association

LT Gov is chair, nationwide

② Alaska UAS Interest Group
Dept of Interior

Harry_kielinger 211-3700
NBC.gov

Craig Campbell = Alaska aerospace

just made deal w/ AUUSI
w/ CSG to come up with
model legislation

@ AUUSI show/convention
in August

Arctic Policy

on task force
and to work w/
CSG, NCSL, ALEC

what already exist

laws on the books that protect
AG # privacy, due process,
and property rights.

harassment by noise airspace use
quiet enjoyment of their property

= what right do citizens have
in Natl. Air space -

100 yd from private dwelling

Ginger Blaisdell

From: Treadwell, Lt. Governor (GOV sponsored) <ULmead.treadwell@alaska.gov>
Sent: Wednesday, March 13, 2013 5:39 PM
To: Ginger Blaisdell
Cc: Propes, Barbara A (GOV)
Subject: FW: Use of UAVs and Model aircraft
Attachments: Madden Testimony - UAS in Alaska.pdf; UAS_Executive_Summary.pdf

From: Madden, John W (MVA)
Sent: Wednesday, March 06, 2013 7:15 AM
To: Treadwell, Lt. Governor (GOV sponsored)
Cc: Kemp, Pat J (DOT); Goertzen, Michaela J (GOV); Toohey, Michelle K (GOV)
Subject: RE: Use of UAVs and Model aircraft

Sir –

Forgive me for replying yesterday but all my files on UAS are here in the office. There are several UAS groups that I am associated with or that I have addressed on potential UAS missions.

First, I attach my 2006 testimony on UAS in Alaska that I gave before Senator Stevens' Senate Commerce, Science, and Transportation Committee. I designed a concept of operations that included some aspects of privacy. I emphasized that UAS should not be developed, deployed, or operated entirely independently but as part of an enterprise with unified logistics, airspace coordination, privacy, and other difficult challenges.

Second, I attach the executive summary of the Unmanned Aircraft Systems Consortium and their Center for Innovation located in Arlington Texas. I addressed them last November on the UAS potential for science, safety, and security. In the audience were several involved with the Texas Governor's office through Texas A&M on private sector R&D and use of UAS.

Third, the U.S. Army at Redstone Arsenal has an office for unmanned aircraft systems that has a network with other government agencies to help establish and grow UAS programs within those organizations and agencies. I talked with them about the conops by telcon last December.

Fourth, there is an Alaska UAS Interest Group that holds periodic workshops with mostly federal agencies but some state and university agencies as well. It is coordinated by the Alaska Center for UAS Integration in the Department of the Interior here in Anchorage.

Fifth, New Mexico State University has the TAAC (Technical Analysis and Applications Center) that focuses on UAS potential – mostly federal agencies. They hold several conferences each year that are mostly technical but also have elements of societal and privacy considerations.

I have contact information for each of these groups.

As always, please do not hesitate to contact me if you have questions or need further information.

JWM
907.782.8287 (NEW!)

From: Treadwell, Lt. Governor (GOV sponsored)

Sent: Tuesday, March 05, 2013 6:19 PM

To: Hatter, Steve D (DOT); Masters, Joseph A (DPS); Madden, John W (MVA); Katkus, Thomas H (MVA)

Cc: Kemp, Pat J (DOT); Goertzen, Michaela J (GOV); Toohey, Michelle K (GOV)

Subject: Use of UAVs and Model aircraft

Commissioners, I hope this finds you well. Quick question:

I chair the Aerospace States Assn., which is looking to develop model state legislation on privacy issues as they relate to model aircraft and UAV's. We are likely to partner with industry groups, the Council on State Governments, and privacy groups as we look at this. In your balliwicks – public safety commissioners or adjutant generals or emergency homeland security directors or transport/aviation authorities – are there national organizations we should have involved?

Virginia has a bill on the Governor's desk which restricts the use of UAVs in law enforcement, and almost two dozen other laws are pending across the country. ASA's presumption is we can work to protect privacy and civil rights and allow this tool to be used for its beneficial uses.

Thanks.

Mead Treadwell, Lieutenant Governor of Alaska

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**WRITTEN TESTIMONY OF
JOHN W. MADDEN
DEPUTY DIRECTOR FOR HOMELAND SECURITY
DIVISION OF HOMELAND SECURITY AND EMERGENCY MANAGEMENT
DEPARTMENT OF MILITARY AND VETERANS AFFAIRS
STATE OF ALASKA**

**HEARING ON
“UNMANNED AERIAL SYSTEMS IN ALASKA AND THE PACIFIC REGION:
A FRAMEWORK FOR THE NATION”**

**BEFORE THE
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE
July 13, 2006**

Introduction

Thank you, Mr. Chairman and Members of the Committee, for inviting me to present testimony on the potential use of unmanned aerial systems (UAS) in Alaska and the Pacific Region. I am the Deputy Director for Homeland Security for the State of Alaska and have held this position since September of 2005. Before beginning my service to the State of Alaska, I served 37 years in seven federal agencies, most recently three years with the Department of Homeland Security and Transportation Security Administration in Alaska. For eleven years before that, I worked with the Alaskan Region of Federal Aviation Administration (FAA). I also worked nine years with the Alaska Region of the National Weather Service and National Oceanic and Atmospheric Administration (NOAA).

Before transferring to Alaska from Washington, D.C. in 1982, I served with the headquarters of the Department of Energy working on fossil fuels research, the Joint Cruise Missile Project of the U.S. Navy and U.S. Air Force, several major defense programs, and on active duty with the U.S. Army in Vietnam and Washington, D.C.

With my experience in federal and state agencies with missions supporting science, safety, and security, I am in a position to analyze and describe the UAS initiative with a well rounded view.

Initial Concepts

In October 2005, I first learned of NOAA's interest in UAS in Alaska to conduct long-term climate research in the Arctic. I understood their objective to be regular and frequent flights over the Arctic Ocean taking atmospheric and other scientific measurements to improve the climate prediction models.

I immediately saw a possible dual mission for these flights. During the flights to and from the Arctic, the aircraft could monitor the critical infrastructure of the Trans Alaska Pipeline System (TAPS), the oil production fields of the North Slope, refineries, oil

storage facilities, and the Alaska Railroad. There was clearly a potential for one flight to accomplish two missions.

As I discussed this possibility with other state agencies and our federal partners, I realized that the range of potential missions was far broader than first evident. There was a clear need to examine the possibility of unmanned aerial systems achieving many missions on one flight – for science, safety, and security. Also, it was evident that while several organizations were interested in UAS, there was no forum for formal discussions and examination of the technology.

Workshop on Unmanned Aerial Systems in Alaska

On April 18, 2006, the State of Alaska hosted an open workshop on unmanned aerial systems. The 55 attendees represented 34 federal and state agencies, universities, private sector companies, and non-profit organizations. I have included a list of the attending agencies and organizations with my written testimony. At the workshop, we exchanged information on current UAS activities and technology around the world and identified potential uses of unmanned aircraft vehicles and systems in Alaska. There was a strong emphasis on the possibility of Alaska as a testbed for UAS technology and applications that may prove beneficial to the entire nation across a broad range of public service missions.

The attendees at the UAS workshop identified many potential mission areas broadly aligned along the themes of science, safety, and security. Some potential missions recurring during the workshop included Arctic climate and weather research, ecosystems and wildlife habitat, monitoring volcanoes and wildfires, emergency communications platform, monitoring of critical infrastructure, fisheries enforcement, emergency response management, and search and rescue. These are representative of the missions that, on first examination, seem incongruent and incompatible. However, we found these missions shared three common elements:

- UAS could improve the effectiveness of achieving the mission of each agency;
- an integrated UAS program would likely reduce the costs of many aspects of the individual missions; and
- UAS could reduce the risks to flight crews and aircraft often operating in very hazardous conditions.

Undoubtedly, there are several lists of potential mission areas prepared by other organizations. These lists should be seen as complementary rather than competitive. The civilian UAS industry is a new field and the ideas are emerging rapidly from many quarters. It is too soon to definitively include or exclude any single idea. Rather, that should be left for a later, more detailed review and planning process.

To describe each potential mission would require testimony of several hundred pages. As an expedient, I will describe a few areas that illustrate the range and diversity of missions. While I describe these missions from an Alaskan perspective, the conditions and challenges in Alaska will replicate those found in other states and regions throughout the country.

- Arctic Climate and Weather Research -- I leave it to my associates from NOAA to describe the scientific missions for UAS in Alaska. However, I emphasize that whatever conditions NOAA detects and whatever predictions arise from improved climate models, Alaska -- its people, economy, and culture -- will be affected first. This mission, as I understand it, requires a platform with intercontinental range, sensing packages, and delivery systems for sondes.
- Monitoring of Critical Infrastructure – A significantly large amount of critical infrastructure in Alaska is located in remote areas. This infrastructure is critical to the people and economy of Alaska and Nation. We Alaskans take this charge very seriously. We devote a significant amount of state, local and corporate resources to deter, detect, and defend against all hazards and threats. To protect just the energy sector – power generation and distribution, oil and gas production fields, pipeline, pump stations, refineries, rail transport, and storage facilities -- there are more than two dozen federal, state, and local agencies and private sector corporations providing some piece of the overall protection. Through the coordinated use of UAS, we could radically improve our ability to integrate all these protective activities and eliminate any gaps, seams, or overlaps in the security. To meet this mission, a variety of aircraft platforms would be needed.
- Fire Management and Response – In this area the diversity of UAS technology and missions is dramatically demonstrated. The rapidly changing nature of firefighting, constantly shifting and always threatening, is extremely challenging to the firefighters and those supporting them. In some future fire scenario, there will be an integrated use of specialized unmanned aerial systems. A high altitude platform continually captures the perimeter, damage, and direction of all fires within range and locates the hotspots within the fire. This information is transmitted real-time to the incident commander who develops and refines the strategy and tactics for the entire fire area. A medium altitude aircraft serves as an airborne radio communications base to ensure every element is in constant contact despite the terrain or ground based stations. A medium to low flying platform drops weather sondes around the fire for atmospheric readings critical to extremely accurate weather predictions down to the range of one kilometer. In the past two years, Alaska has lost more than 11 million acres to wildfires – as much as the rest of the nation combined. There will be no shortage of opportunities to test technology, tactics, and techniques in Alaska that will be immediately useful to other states with wildfires.
- Volcano monitoring – Alaska has about 40 volcanoes active in historical times. As recently as January of this year, Mt. Augustine threatened communities along Cook Inlet and the air routes over the Northern Pacific. In recent years, other eruptions from Mt. Spurr, Mt. Redoubt, and Mt. Augustine, disrupted commercial aircraft operations throughout the Pacific and half the country. While NOAA, the FAA, and the Alaska Volcano Observatory have greatly improved their ability to monitor and predict the movement of ash clouds, other information remains

difficult to obtain. During the UAS Workshop, there was speculation on the use of small, low-cost, sacrificial unmanned aerial vehicles to fly into volcanic ash clouds to gather and transmit information on the chemical composition and size of the particulate. Also, it would be of significant value to have an unmanned aircraft remain on station for hours or days to monitor and transmit visual and infrared information from the volcano. Again, a variety of unmanned aerial vehicles would supplement the ground and satellite based monitoring resources.

- River Ice and Flooding – Each spring as the ice on the Alaskan rivers begin to break up, dozens of river communities endure the uncertainty of if or when they may be flooded. During the Yukon River breakup in May 2006 – 150 miles of ice traveled downriver with the potential of blocking the river at any turn and flooding several communities. The river watch program of the National Weather Service and the State of Alaska flew small, piloted aircraft at slow speed and low elevation to monitor and assess the ice. This approach places pilot and crew at great personal risk and cannot stay on station for long. Similar conditions of seasonal flooding exist throughout the country. The process of gaining situational awareness of water conditions and rapidly identifying changes to predictions could immediately be exported to other states and regions.

Model for the Civilian UAS Testbed and Operations Center in Alaska

It was evident from discussions during and since the April workshop that no single type of UAS could meet all these missions. Rather, the ideal UAS test program would include several platform types – from the high altitude, long endurance aircraft requiring a long runway to very small aircraft capable of low and slow flight, launched pneumatically or by hand, and easily deployed. Also, the UAS initiative is more than the vehicles and technology. The unmanned aircraft are essentially tools to acquire data and information for the other elements of the system to analyze and distribute.

To accommodate this wide range of aircraft and missions, I envision an operations center at one of the hundreds of State owned airports. The center is operated by a federal government agency or contractor. The center has hangar and maintenance space for the aircraft along with a test area for assembly, test, fabrication, and modification of payload equipment and technology. Near the aircraft base is the center for communications, information processing, logistical, and administrative support for a range of clients – government, academia, and industry. The operations center is linked to the clients in Alaska and throughout the nation via high-speed, broadband fiber optic and satellite network. The center has sufficient computing power for processing, analysis, and archiving huge amounts of data and imagery. The center provides for the maximize productivity of each flight hour by aligning missions, equipment, sensing packages, and priorities from clients. Further, the center would safeguard the information from unauthorized access and use.

Depending on the missions, there may be UAS forward deployed to other locations during seasonal events such as flooding, fire, wildlife migration, fisheries seasons, and breakup of river ice. There would be accommodations for the actively participating

organizations as well as observers (real or virtual) from the private sector, other states, federal agencies, and even nations. These observers could learn first hand the UAS operations relevant to their needs and plans. Each could then make informed recommendations and decisions on the transfer of the UAS technology and procedures to their constituency or organization.

The center is governed by a charter that broadly prescribes how priorities are set, how conflicts are resolved, and how business is conducted. Through this governance, the participating agencies and organizations decide under what conditions to sacrifice a day of scientific observations to conduct a search and rescue operation or under what conditions to delay a wildlife census to monitor a threatening volcano.

Profile of One Flight with Many Missions

I will describe the flight and mission plan for one flight of an unmanned aerial vehicle should this initiative be realized. While it is unlikely that a single flight will ever perform all of these, this hypothetical flight contains several mission elements that, individually, would be extremely difficult, dangerous, or expensive with manned aircraft or through satellite observations.

1. A long-range unmanned aerial vehicle launches from a base in Southcentral Alaska with its primary mission to drop weather sondes over the Arctic Ocean. It is also equipped with optical and infrared sensors to accomplish several secondary missions along the way.
2. The aircraft quickly climbs above the general aviation operating altitudes and heads north on its programmed flight.
3. As scheduled, the aircraft flies over the Trans Alaska Pipeline System, the pump stations and river crossings. The imagery is relayed through a high speed, secure downlink to the pipeline security operations center.
4. The aircraft also flies over Ft. Greeley and the national missile defense base. The imagery is relayed to security forces.
5. The UAS Operations Center receives a report from Alaska State Troopers of a boat overdue from a trip on the Yukon River from Circle to Fort Yukon. The aircraft is directed to divert slightly to follow and monitor the Yukon River. The aircraft collects the imagery and transmits it to the UAS Control Center. The center quickly analyzes the imagery and relays to the Alaska State Troopers the locations of the most likely search areas. The search by manned aircraft is now more focused and effective.
6. Over the North Slope, the aircraft begins collecting imagery of a caribou herd for several federal and state agencies as well as universities researching the wildlife of that area. The imagery is retained onboard the aircraft for later forwarding to the client agencies and universities.
7. As the aircraft approaches the Arctic Ocean, it flies a scheduled path over the oil fields at Prudhoe Bay and takes optical and infrared images to detect hotspots indicative of leaks and the surrounding areas for unauthorized people and vehicles. The imagery is relayed real time to the pipeline operations center.

8. Over the next several hours, the aircraft conducts its primary mission of atmospheric observations over a large swath of the Arctic Ocean.
9. On its return to the mainland, the aircraft follows the flight plan along the pipeline from Prudhoe Bay to Fairbanks, again concentrating on pump stations, river crossings, and other critical elements. It relays imagery in real-time to the pipeline operations center.
10. The UAS Operations Center receives a report from the Alaska Rescue Coordination Center (RCC) in Anchorage of an emergency locator transmitter detected near Chandalar Lake in the Brooks Range above the Arctic Circle. The Control Center recalls a portion of the imagery already collected for pipeline security and reroutes it to the RCC for analysis and action.
11. The aircraft flies a planned route through the military special use airspace near Fairbanks to simulate a commercial aircraft deviating from flight plan. This provides a highly realistic test for the FAA and the North American Aerospace Defense Command to detect, identify, and intercept an aircraft under these conditions.
12. The flight plan includes a scheduled reconnaissance flight over an active fire area near Nenana. The infrared and optical imagery of the fires is relayed real time to the Alaska Fire Service in Fairbanks who matches it with information from other UAS on low-level flights.
13. The aircraft continues southward above the Alaska Railroad and monitors the remote rail bridges before the transport of a large shipment of highly hazardous materials. The imagery is sent real time to the railroad operations center.
14. The aircraft completes its one flight and its many missions and returns to base. The imagery, atmospheric observations, and other data are downloaded for archiving, distribution, and analysis.

Aviation Safety

I anticipate that the aviation community in Alaska may raise safety concerns about sharing airspace with unmanned aircraft. Alaska is the ideal venue to develop and test the standards for ensuring the safety of integrating UAS into the National Airspace System. While the per capita numbers of active pilots and registered aircraft in Alaska are the highest in the nation, there is still a great amount of airspace in Alaska. According to FAA records, there were about the same number of active pilot certificates in Alaska as in Maryland or Massachusetts, states with significantly larger populations but much smaller land area and airspace.

Also, Alaska has about the same number of registered aircraft – private, corporate, and commercial – as Ohio or Washington State, states with more population centers, fewer landing facilities, and more controlled airspace. I understand there are many other factors such as number of flights, distance and duration of flights, controlled and uncontrolled airspace, weather and radar coverage, and the limited road system. However, the risks of flying in Alaska are widely recognized and increasingly well documented.

It is often said, and I agree, that aviation is the lifeblood of Alaska – more so than any other state. Alaskans know and greatly appreciate the improvements in recent years in aviation safety and security. The collaboration between FAA, the aviation industry and associations, and the flying public is innovative, inclusive, and incredibly successful. The most notable programs in recent years are the Capstone program, the Medallion Foundation, the Circle of Safety, and the statewide system of weather cameras.

Aviation safety is and will remain vital to the state and worthy of the focus and resources afforded it. But there is strong need for the aviation community to collaborate on this initiative to confront other hazards that are just as threatening to our citizens. It is not enough to be safe while in flight as other imminent dangers – fires, floods, volcanoes, coastal and river erosion, terrorism – face our families and communities. The aviation community is a critical component of Alaskan life and it is critical to the thoughtful examination and implementation of UAS technology and operations in Alaska and across the Nation.

Benefits to the Nation from a UAS Testbed and Operations Center in Alaska

A civilian UAS operations center in Alaska will facilitate the methodical test and evaluation of existing and emerging technologies in challenging field conditions. It also is the perfect laboratory to find the best means and timetable for introducing unmanned aerial systems into the National Airspace System.

For the emerging UAS industry in the United States to establish itself in the world market, it must demonstrate reliable technology that meets business needs and government missions, and that operates in the widest range of environmental conditions, and with logistical support. Alaska is the right location for such a testbed because there is more of the world like Alaska than many parts of the United States.

Conclusion

My foremost duty is to provide for the safety and security for the people and economy of Alaska. The UAS initiative will significantly contribute to a safer and more secure Alaska. Just as importantly, I believe that a civilian testbed in Alaska also serves the best interests of other states and the Nation as a whole. Only in Alaska can we test the full range of potential missions of UAS without immediately confronting the complex airspace found in most of the National Airspace System. Only in Alaska can UAS be used to maximum efficiency through one flight conducting many missions – on each flight. Only in Alaska can the unmanned aerial system initiative be subjected to the most demanding climactic, environmental, logistical, and administrative challenges without dooming it to early and avoidable failure.

This concludes my prepared remarks. I stand ready to answer any questions you, or other Members of the Committee, may have.

**Unmanned Aircraft Systems in Alaska:
A Workshop on Safety, Science, and Security**

**Sponsored by the State of Alaska
Held at the Aviation Technology Center
University of Alaska Anchorage
Anchorage, Alaska**

April 18, 2006

Participating Agencies and Organizations

State of Alaska Agencies:

Alaska Department of Commerce, Community, and Economic Development
Alaska Department of Environmental Conservation
Alaska Department of Military and Veterans Affairs
 Alaska State Defense Force
 Alaska Air and Army National Guard
 Division of Homeland Security and Emergency Management
Alaska Department of Natural Resources
 Division of Forestry
Alaska Department of Public Safety
 Alaska State Troopers
Alaska Department of Transportation and Public Facilities
 Ted Stevens Anchorage International Airport
Alaska Railroad

Federal Agencies:

Department of Commerce/National Oceanic and Atmospheric Administration
 National Weather Service, Alaska Region
 Earth Systems Research Laboratory
Department of Defense
 Alaskan Command/Joint Task Force-Alaska
 Space and Naval Warfare Systems Command, San Diego
Department of Energy
 Sandia National Laboratory
Department of Homeland Security
 U.S. Coast Guard
Department of Interior
 Bureau of Land Management/Alaska Fire Service
 U.S. Geological Survey/Alaska Volcano Observatory
National Aeronautics and Space Administration
 Jet Propulsion Laboratory

Academic Organizations:

Alaska Geophysical Institute
New Mexico State University
University of Alaska Anchorage
 Aviation Technology Division
University of Alaska Fairbanks
 Geophysical Institute

Private Sector:

ACS Alaska
Aerospace Missions
Alyeska Pipeline Service Company
BP
Conoco Phillips
GCI
Northrup Grumman

Other Organizations:

Alaska Airman's Association
Alaska Sealife Center

CENTER FOR
innovationTM

**Unmanned Aircraft Systems Consortium
(UASC)**
Executive Summary



Introduction

The Center for Innovation's (CFI) Unmanned Aircraft Systems Consortium (UAS) is focused on the development of the Unmanned Aircraft Systems industry. It's primary purpose is to develop, implement and expand UAS technological and production capabilities.

CFI's Unmanned Aircraft Systems Consortium was established as a means of addressing one of the priority issues of three federal agencies CFI represents as a Federal Partnership Intermediary; the U.S. Departments of Agriculture, Defense, and Homeland Security.

A UAS is comprised of the unmanned aircraft, payload, human element, control element, weapons systems platform, display, communication architecture, life cycle logistics, and includes the supported soldiers or civilian ground crew. Unmanned aircraft are fixed or rotary winged aircraft or lighter-than-air vehicles, capable of flight without an onboard crew.

Background

In 2010, the Center for Innovation established TechComm at the invitation of the U.S. Department of Defense, as a "multi-agency" Federal Partnership Intermediary. As such, TechComm is responsible to support the formation of strategic "public-private" partnerships, facilitating and enabling the integration of industry, academic, and government research and discovery with venture capital and talent & know how. The ultimate goals; (1) enable the commercialization of patented technology discovered in federal labs; and (2) enable federal agencies to secure both technology and contract services from business and industry.

TechComm currently represents five federal agencies, including the U.S. Department of Defense (DoD), the U.S. Department of Agriculture (USDA), the U.S. Department of Homeland Security (DHS), the National Institutes of Health (NIH), and the U.S. Department of Energy. TechComm works with these agencies through their Offices of Technology Transfer and Transition, and the 272 labs they operate. These labs collectively spend \$100 billion annually on research, employ 100,000 federal researchers and scientists, with 20,000 patents available for license by business and industry for their own use, manufacture, or production.

Premise and Rationale

CFI's rationale for establishing a UAS consortium is based on our contracts to represent the U.S. Departments of Agriculture, Defense, and Homeland Security as a Federal Partnership Intermediary, as all three are keenly interested in UAS.

Currently, the Department of Defense buys approximately 70 % of all unmanned aircraft vehicles produced in the world. The U.S. Department of Agriculture is interested in UAS for their work in assessing land use, crop density and production. UAS is also of strong interest to the U.S. Department of Homeland Security (DHS), and in a broader sense,

the nations' first responder community. In addition, UAS is a current focus of the Federal Aviation Administration (FAA), as it works to respond to a Congressional mandate to integrate UAV's into commercial airspace by 2015.

Critical Issues

- FAA –Creation of a five-year UAS roadmap
- Commercial Airspace – Full integration of UAS into national airspace by 2015
- Test Sites – Federal selection of six test sites nationally
- Certification – Need to develop standards and air traffic requirements for UAS
- Training – Need to develop training programs for civil and public UAS

UAS Opportunities

In the next 10 years, the Department of Defense (DoD) plans to purchase about 730 new medium-sized and large unmanned aircraft systems, based on designs currently in operation, while also improving the unmanned aircraft already in service. By Congressional Budget Office (CBO's) estimates, completing the investments in systems for which there are detailed plans will require about \$36.9 billion through 2020. To do so will require \$4.6 billion in annual procurement, compared to the current DoD budget for 2011 of \$1.9 billion.

The Department of Defense's (DoD's) 2012 plan calls for purchasing more of the existing unmanned aircraft systems for current operations, improving the system already in service, and designing more-capable unmanned aircraft systems for the future.

Currently DoD is using their 6000 plus unmanned aircraft system to perform; reconnaissance missions; light attack; electronic warfare; search and rescue; mapping; bomb detection and destruction; firefighting; reconnaissance for nuclear; chemical; or biological weapons of mass destruction; support special operations; marine interdiction; emplacement of obstacles; such as mines; and psychological warfare. Because of these special technological needs for UAS by the DoD, the demand for the multiple of capabilities of each aircraft will increased over time.

UAS Consortium Strategic Objectives

The Center has established five strategic objectives for the UAS consortium:

Research, Development & Commercialization:

- Seek funding for research and product development to support the technology needs of the UAS industry;
- Enable efforts to commercialize new technologies;
- Expedite the transition of UAS technologies from federal agencies/labs into the commercial sector, as well as UAS technologies from the private and academic sectors.

Industry Sector Development:

- Provide support for prototype design and development;
- Create access to testing airspace for government, academic, and corporate research;
- Serve as a catalyst to develop the manufacturing capacity of unmanned aircraft solutions needed to meet emerging markets demand;
- Establish prototype supply chain, inclusive of suppliers and service providers.

Access to Capital

- Establish access to venture capital;
- Establish access to debt equity capital;
- Establish access to state and federal funding.

Education, Workforce Development & Training:

- Develop the curriculum necessary to support workforce development;
- Develop the training capacities and capabilities necessary to train the needed workforce in manufacture, repair and maintenance of UAS.

Policy & Standards Development:

- Actively seek and propose solutions for the safe and effective operation between manned and unmanned aircraft systems;
- Provide recommendations for public policy and standards development.

Consortium Partners (As of August, 2012)

Consortium partners include:

Industry Sector

- Adastral, LLC
- Aerial Specialties
- Bell Helicopter
- Legion Training & Simulation, LLC
- Lockheed Martin
- L-3 Unmanned Systems
- Process Data Control Corp
- Raytheon
- Sagan & Associates
- Unmanned Aviation Public Safety Association

Educational Sector

- Kaplan College
- Tarrant County College
- The University of Texas at Arlington

Federal Agency Advisors Include:

- Federal Aviation Administration (FAA)
- U.S. Department of Defense (DoD)
- U.S. Department of Homeland Security (DHS)
- U.S. Department of Agriculture (USDA)

Government Sector

- City of Arlington Police Department
- City of Mineral Wells
- DFW Airport
- Enid Regional Development Alliance
- North Central Texas Council of Governments
- North Texas Regional Airport
- Texas Emerging Technology Fund
- Texas Workforce Commission
- Wills Point Economic Development Corporation



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Notification of Proprietary Information

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Resolution in Support of Safe and Effective Usage of Unmanned Aircraft Systems (UAS) in the State of Alaska.

WHEREAS, the advance of technologies for Unmanned Aircraft Systems has made it possible for Alaskans to use these tools to replace manned aircraft in a number of “dull, dirty and dangerous” tasks necessary to monitor the environment, respond to natural disasters, conduct research, advance public safety, and support natural resource development; and

WHEREAS, the State of Alaska, the University of Alaska, Alaska Aerospace Development Corporation, the Alaska Aviation Safety Project and other public and private institutions have developed cooperation with NASA, the FAA, the Department of Interior, the Department of Defense and others to further advance the research, development and use of technology to benefit and support Alaskans and Americans with the safe use of Unmanned Aircraft Systems; and

WHEREAS, The State of Alaska has embraced the use of Science Technology Engineering and Math programs (STEM) in schools and in extracurricular activity with our states’ youth to help our next generation of leaders compete with greater literacy of math, science and engineering; and .

WHEREAS, many Alaskan hobbyists, aviators, and educators have had a long standing relationship with the Academy of Model Aeronautics, a national organization which has, for more than 75 years, promoted safe and effective operation of model aircraft through self-regulation, self-insurance, and development of its own safety and operations procedure; and

WHEREAS, through model aviation AMA has touched and inspired the lives of many young Alaskans and Americans to become scientists, engineers , astronauts and professional aviators; and AMA’s has made a continuing contribution to Alaska’s youth through Model Aviation School Clubs (MASC) around our state; and

WHEREAS, Alaskan officials play active and leading roles in the Aerospace States Association, the Council of State Governments, the National Emergency Management Association, and other interstate groups which promote the protection of privacy, the advancement of aviation and UAS technologies, and the provision of STEM education programs such as ASA’s Real World Design Challenge; and

WHEREAS, the State of Alaska, under Governor Parnell in 2010, entered into a cooperative Space Act agreement with NASA AMES Research Center to address many needs statewide that can benefit from applications of NASA research, use of NASA education programs, or cooperation to advance our aerospace and aviation industries, including development of small “cubesat” affordable satellites, aviation technology information and communication systems to improve inflight systems and knowledge; aviation air traffic management research to improve the routing and scheduling systems for air cargo planes at Alaska’s international airports, access and delivery of NASA STEM programs to Alaska schools, and help for rural Alaskans with onsite training, education, and technology transfer for clean water and sanitation; and

WHEREAS, Alaska's state government and Alaska's business and research community continue to work with the Federal Aviation Administration to promote the establishment of safe UAS ranges onshore on offshore Alaska, which will help set procedures for the safe UAS use in the National Airspace System.

WHEREAS, Alaska has the highest per capita use of general aviation activity in our nation, and Alaskan aviation organizations have helped the FAA develop the next generation of air traffic control for the nation and the world, while making major gains for Alaska's aviation safety in the process; and

WHEREAS, Alaska's "highways in the skies" are the lifeblood to many rural communities., and improving aviation safety in Alaska has been at the forefront of transportation planning efforts and coordination between Alaska user groups.

NOW THEREFORE LET IT BE RESOLVED, that the Alaska State Legislature is bound by the Constitution of the State of Alaska to defend the privacy rights of Alaska's citizens, and, accordingly, urges the Governor and State law enforcement officials to uphold the privacy of Alaskans under existing laws, and not to allow for the unauthorized use of UAS technology for unlawful activities that will compromise basic privacy or safety or civil rights; and

BE IT FURTHER RESOLVED, that the Alaska State Legislature encourages the aviation, UAS and Research Communities, University of Alaska, the Federal Aviation Administration, NASA AMES and Academy of Model Aeronautics and the Aerospace States Associations to cooperatively develop Model Rules and Operational Procedures for the integration of Unmanned Aircraft Systems (including model aviation) within the National Airspace System that this legislature and others can consider to adopt that will further protect the privacy, safety, and civil rights of Americans while promoting the advancement of this technology.

COPIES OF THIS RESOLUTION SHALL BE SENT TO the Honorable Sean Parnell, Governor of Alaska, the Honorable Mead Treadwell, Lt. Governor of Alaska and Chair of the Aerospace States Association; Sen. Gary Stevens, chair of the Council of State Governments; Government Affairs Division of AMA, ...

Ginger Blaisdell

From: Steve Colligan <scolligan@e-terra.com>
Sent: Friday, March 08, 2013 10:51 AM
To: Ginger Blaisdell
Cc: Eric Feige
Subject: UAS Legislation - Resolution
Attachments: UAS Alaska Resolution v0.9.docx

Ginger, Attached is a rough draft of resolution we are looking at to be passed .vs legislation that is too preliminary

I am waiting for comments back from UAF and Greg Walker, but I wanted to let you know where we are at and where we are headed. I think, Greg is working on a stronger closing resolve that may benefit them in their application for UAS airspace project with the FAA.

This has been vetted by the Academy of Model Aeronautics, NASA and should have UAF comments back later today.

-Steve Colligan 907.230.3422

Resolution in Support of Safe and Effective Usage of Unmanned Aerial Systems (UAS) in the State of Alaska.

WHEREAS, The State of Alaska, the University of Alaska and Alaska education system has enacted several agreements with science based organizations and community based organization focused on the research, development and use of technology that will great benefit and support Alaskans and Americans including the use of Unmanned Aerial Systems.

WHEREAS, The State of Alaska has embraced the use of Science Technology Engineering and Math programs (STEM) in the classrooms to increase the interest and literacy of math and science in Alaska Schools.

WHEREAS, The Alaska community has had a long standing relationship with the Academy of Model Aeronautics which is a community based organization of more than 75 years, providing for safe and effective model aviation operation through its self-regulating, self-insured and development of its own safety and operations procedure. Through model aviation AMA has touched and inspired the lives of many young Americans to become scientists, engineers and professional aviators. Many Alaskans and American have become notable scientists, aviators and astronauts through their original interest in model aviation. AMA has been working as a community based organization with the Alaska Education system to deliver its STEM education programs and Model Aviation School Club (MASC) program for the benefit of Alaska's next generation of innovators.

WHEREAS, The State of Alaska has been involved with NASA for many years to solve scientific issues and cooperate on research missions. The State of Alaska, through Governor Parnell entered into a cooperative Space Act agreement with NASA AMES research center to address many needs in matters of science research and education to benefit Alaskans and our nation. NASA AMES has been working with Alaska science community to develop Small Cube Sat's the next generation of small affordable satellites; aviation technology information and communication systems to improve inflight systems and knowledge; Aviation Air traffic management research to improve the routing and scheduling systems for air cargo planes at Ted Stevens international Airport, access and delivery of NASA STEM program to Alaska schools, exciting the next generations of scientist about technology innovation, SPACE operations and exploration. NASA AMES has specifically included rural Alaskans by providing onsite training and curriculum and science camp and internship opportunities to rural Alaskans. NASA AMES has been the leader in safe use of unmanned aerial systems working with Alaska Science community on the operations of UAS for many research missions from volcano monitoring, wildlife and habitat research, to Arctic missions on Alaska's northern coast.

WHEREAS, Alaska legislature and State Government has invested in the Research and Development of UAS technology for support of many science based missions coordinated through the University of Alaska Fairbanks's, Geophysical Institute in areas of, search and rescue, environmental and resource monitoring, and exploration of the artic. These efforts continue to demonstrate the positive benefits of UAS operations, while reinforcing the use of UAS technology as a viable and cost effective tool. The

Alaska research community continues to work with the FAA, NASA AMES and aviation community on regulations and procedures for the safe UAS use in the National Airspace System.

WHEREAS, Alaska has the highest per capita use of general aviation activity in our nation. Alaskan aviation organizations in cooperation with the FAA have developed leading technology and innovations for navigation and aviation safety using Alaska as an effective testing and development grounds for the benefit the rest of the nation and the world.

WHEREAS, Aviation in Alaska and the "highways in the skies" are the lifeblood to many rural communities. Improving aviation safety in Alaska has been at the forefront of transportation planning efforts and coordination between Alaska user groups. To address these needs Alaska state government in cooperation with the FAA, NASA and other agencies are addressing aviation safety through a variety of means including but not limited to: Education and Training, Technology and Research, Improving of infrastructure and the development of terrain data and information with accuracy to support modern navigation systems.

RESOLVED, that the Alaska State Legislature supports the privacy rights of American citizens as provided for by the US constitution and will uphold the rights of Alaskans by enforcing existing laws and not allow for the unauthorized use of UAS technology for unlawful activities that will compromise basic privacy or safety.

RESOLVED, that the Alaska State Legislature encourages the aviation, UAS and Research Communities, the Federal Aviation Administration, NASA AMES and Academy of Model Aeronautics to cooperatively develop Model Rules and Operational Procedures for the integration of Unmanned Aerial Systems (including model aviation) within the NAS while maintaining the priority for manned aircraft systems.