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Grounding Drones: Big Brother's Tool Box Needs Regulation Not Elimination

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I. INTRODUCTION

[1] The Ford Model A was advertised as “the latest and best” in the world¹ in 1903 and sparked global interest to design and create better, faster, and more complex machines than had ever traveled on land. Fast forward to the 21st century and creating machines that can travel around the world’s airspace appears to be the latest fascination. Until relatively recently, only airplanes and helicopters dominated the friendly skies. But now, the public is catching on to the idea that building an aircraft is easier than one might expect. In fact, a pilot is no longer necessary. Drones, also referred to as unmanned aerial vehicles (UAVs) or remotely piloted aircraft (RPA), can fly without a human operator.² Chris Anderson, a self-declared “drone evangelist,” confirmed that:

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¹ FORD MOTOR COMPANY, *Vehicle History: The First Model A Laid a Foundation for the Future*, <http://corporate.ford.com/our-company/heritage/vehicle-history-news-detail/670-model-a-1903> (last visited Mar.4, 2014).

² DAVID GOLDBERG ET AL., UNIV. OF OXFORD REUTERS INSTI. FOR THE STUDY OF JOURNALISM, REMOTELY PILOTED AIRCRAFT SYSTEMS & JOURNALISM: OPPORTUNITIES AND CHALLENGES OF DRONES IN NEWS GATHERING 4 (2013).

“Thanks to Smartphones, and Wii controllers and other consumer electronics, we have all the necessary elements to create a Drone. Sensors, wireless, GPS, processors, cameras, everything that’s the Smartphone revolution has basically made the technologies cheap and available and this has just happened over the past four or five years.”³

Domestic drones designed for private use are the new phenomenon—a 14 billion dollar industry with trade shows popping up every month and more and more manufacturers getting on board as they await the green light from the Federal Aviation Administration (FAA) to begin full scale drone flights throughout the United States.⁴ As one UAV manufacturer put it, “If the job is too dull, dirty, or dangerous—get a UAV to do it.”⁵

³ *Id.* at 2-3. Chris Anderson is the former editor of *Wired* magazine and founded 3D Robotics, a company that sells drones that can fly for 15 to 20 minutes with HD cameras attached. See Michael S. Rosenwald, *A Drone of Your Very Own: These Aren’t Your Average Remote-Controlled Aircraft*, WASH. POST (Aug. 17, 2013) http://www.washingtonpost.com/local/personal-drones-delivering-wedding-rings-instead-of-missiles/2013/08/17/75ed2092-ff7e-11e2-9711-3708310f6f4d_story.html.

⁴ See Alistair Barr & Elizabeth Weise, *Underground Drone Economy Takes Flight*, USA TODAY (Dec. 2, 2013, 9:37 PM), <http://www.usatoday.com/story/tech/2013/12/02/underground-drone-economy/3805387>.

⁵ GOLDBERG ET AL., *supra* note 2, at 1. Drones perform missions that previously

fell into three distinct categories: dull, dirty, and dangerous. *Dull* meant long flights during which pilots faced fatigue flying to remote areas of the globe. *Dirty* included situations where nuclear weapons or biological weapons might be involved. *Dangerous* meant missions over denied territories such as the Soviet Union, North Korea, and China, where shoot-downs were a political risk.

ANNIE JACOBSEN, *AREA 51: AN UNCENSORED HISTORY OF AMERICA’S TOP SECRET MILITARY BASE 218* (2011).

[2] Domestic drones have also caught the eye of local, state, and federal law enforcement. Surveillance, an investigative tool that can oftentimes prove to be a “dull, dirty, or dangerous” job, could be easily supplemented with drones in the sky.⁶ Drones could assist law enforcement as cost-effective eyes in the sky during undercover or informant operations, during search warrant executions, while monitoring potentially violent suspects, or while viewing suspected marijuana grows. However, state and federal legislators are seemingly shutting down this possibility before it gets off the ground.

[3] Unlike other technological advances that, in the past, have seemed to sneak up on legislators after courts have ruled on their constitutionality, drone legislation has become the new craze. Twelve states have already passed legislation that significantly limits government drone flights, and twenty-one states have legislation pending on the matter.⁷ Perhaps legislators have scenes of deadly drone strikes in Yemen or Afghanistan in their minds, or they recently watched the latest science fiction movie in which a drone-like machine relentlessly pursues the movie’s hero throughout the city streets and scanned his retina to identify him.⁸ Or

⁶ See JACOBSEN, *supra* note 5, at 218.

⁷ See *infra* Tables 1-5; see also Allie Bohm, *Status of 2014 Domestic Drone Legislation in the States*, AM. CIVIL LIBERTIES UNION, <https://www.aclu.org/blog/technology-and-liberty/status-2014-domestic-drone-legislation-states> (last updated June 6, 2014) [hereinafter *2014 Status of Domestic Drone Legislation*]; Allie Bohm, *Status of Domestic Drone Legislation in the States*, AM. CIVIL LIBERTIES UNION, <https://www.aclu.org/print/blog/technology-and-liberty/status-domestic-drone-legislation-states> (last updated Jan. 22, 2014) [hereinafter *2013 Status of Domestic Drone Legislation*]. An additional twelve states have drone legislation regarding law enforcement use that is either dead, tabled, or recommended for further study. *Id.* Three states, Alaska, Indiana, and Nevada, passed laws relating to drones that does not relate to law enforcement use. *Id.*

⁸ See MINORITY REPORT (Twentieth Century Fox 2002). See generally THE BOURNE LEGACY (Universal Pictures 2012) (in THE BOURNE LEGACY, armed drones were used to assassinate government operators and destroy buildings).

perhaps they are concerned that these drones will become self-aware and turn into HAL in the movie *2001: A Space Odyssey*.⁹ Whatever the case may be, drones and their potential uses have captured the public's attention in a way few other technologically advanced tools have.

[4] With the expected rise in drone use in the next several years, Congress appears to have two concerns: safety and privacy. Congress passed its safety concerns onto the FAA with the passage of the FAA Modernization and Reform Act of 2012.¹⁰ The FAA has been assigned the task to create regulations for government and civilian drone use by September 2015.¹¹ These regulations, Congress hopes, will alleviate any safety concerns surrounding drone flights. As to privacy, the federal government has yet to pass legislation arising from privacy concerns with the increase in drone use by civilians and government actors alike; however, several bills are being considered. The Preserving American Privacy Act of 2013 would effectively require a warrant before a drone could be used.¹² As mentioned, several states have already tackled the privacy implications of government drone use head-on.

[5] These safety and privacy concerns will lead to regulations for two types of drone users: government actors or law enforcement, and civilians. The Supreme Court has yet to rule on the use of drones by government

⁹ See *2001: A SPACE ODYSSEY* (Metro-Goldwyn Mayer 1968). As drone researchers have stated, "if only we could be so lucky." Motherboard, *Drone On: the Future of UAV Over the U.S.*, YOUTUBE (Dec. 5, 2012), <http://www.youtube.com/watch?v=kwx84wXNo>.

¹⁰ Pub. L. 112-95, 126 Stat. 11 (codified as amended in scattered sections of 49 U.S.C.).

¹¹ See Bart Jansen, *FAA Has Plan for Drones, but Is Behind Schedule*, USA TODAY (Dec. 2, 2013, 11:03 PM), <http://www.usatoday.com/story/travel/flights/2013/12/02/faa-drones/3805447>.

¹² See Preserving American Privacy Act of 2013, H.R. 637, 113th Cong. § 3119(c) (2013).

actors or private civilians and whether it would constitute a “search” under the Fourth Amendment with respect to law enforcement use, or a trespass or invasion of privacy with respect to private actors.¹³ With the influx of state regulations and increased usage by both government and civilian actors, the Supreme Court will undoubtedly face this issue in the near future.

[6] This article explores the constitutionality of drone use by law enforcement, and questions legislative findings that law enforcement’s use of drones is a “search” under the Fourth Amendment. State legislators appear to be concerned that drone flights constitute a trespass or violate one’s reasonable expectation of privacy. Part II of this article examines current and future drone usage and the technological abilities it may have in the future. Part III discusses safety concerns associated with drones and what the FAA plans to do to keep the airspace of the United States safe. Part IV examines privacy concerns related to increased drone usage, and the mechanisms being put in place to regulate civilian and government operators and prevent significant intrusion into privacy and governmental abuse. In Part V, I argue that not only are legislators mistaken in believing drone use falls under Fourth Amendment protections and should require a warrant, but that the current analysis used to identify what types of government investigatory tools constitute a “search” is no longer effective as the global community is experiencing a diminished expectation of privacy of its own doing. Less emphasis should be placed on whether a suspect has a reasonable expectation of privacy and more emphasis should be placed on whether it would be reasonable for law enforcement to utilize a particular investigatory tool without a warrant. The greater the intrusion into a suspect’s private life, house, papers, and effects, the greater the chance the Fourth Amendment is triggered and the requisite probable cause and warrant necessary. Lastly, in Part VI, I argue that instead of requiring probable cause and the requisite warrant, law enforcement should seek a court order similar to the pen register statute under 18 U.S.C. § 2703. Law enforcement would be permitted to use drones if the

¹³ U.S. CONST. amend. IV.

data to be collected is relevant to an ongoing investigation, they demonstrate a particularized need to collect the information via drone, and if the irrelevant data collected after the flight is subsequently destroyed and not stored for future use.

II. CURRENT AND FUTURE DRONE USE

[7] One of the reasons why domestic drones have become so popular is because they serve a variety of purposes for a variety of people. Drones are being used to inspect pipelines, survey and monitor crops,¹⁴ monitor storm damage and flooding,¹⁵ monitor wildlife populations and track poachers,¹⁶ count sea lions in Alaska, monitor drug trafficking between the United States and Mexico borders, monitor high crime neighborhoods during drug investigations, monitor traffic, monitor farms for cruelty to animals, assist realtors in marketing real estate, and conduct weather and environmental research.¹⁷ Drones not only assist Hollywood film makers find cost effective ways to film scenes¹⁸ but also assist first responders in

¹⁴ A \$300 UAV could replace a \$1,000 per hour manned aircraft to check for disease and irrigation levels. Lucas Eaves, *6 Arguments in Favor of the Commercial Use of Drones*, IVN (May 6, 2013), <http://ivn.us/2013/05/06/6-arguments-in-favor-of-the-commercial-use-of-drones>.

¹⁵ See *Airborne Drones Can Assess Storm Damage on Distribution Systems*, CE UNBOUND (May 9, 2012), <http://ceunbound.com/index/webapp-stories-action/id.914/title.airborne-drones-can-assess-storm-damage-on-distribution-systems>.

¹⁶ See David Draper, *Kenyan Wildlife Officials to Use Drones in War on Poaching*, FIELD NOTES (Jan. 24, 2014), <http://www.fieldandstream.com/blogs/field-notes/2014/01/wildlife-officials-use-drones-combat-rhino-poaching-kenya>.

¹⁷ See, e.g., Mark Corcoran, *Ex-military Spy Drone to Conduct NASA Climate Tests in Australian Airspace*, ABC NEWS (Jan. 24, 2014), <http://www.abc.net.au/news/2014-01-23/us-drone-over-australia/5215598>.

¹⁸ See Gary Susman, *Drones and the Future of Movies*, ROLLING STONE (Oct. 28, 2013, 2:50 PM), <http://www.rollingstone.com/movies/news/drones-and-the-future-of-movies-20131028>.

search and rescue missions and during or after natural or man-made disasters.¹⁹ Drones also assist oil and gas companies to inspect rigs and pipelines.²⁰ The Darwin Aerospace laboratory in San Francisco has even designed the Burrito Bomber, the world's first airborne Mexican food delivery drone, which would allow customers to have food parachuted to their doorsteps.²¹

[8] Drones come in all shapes and sizes. The largest drone, to date, is the \$200 million U.S. Air Force Northrop Grumman RQ-4 Global Hawk, which has the wingspan of an airliner.²² A forty-five member ground crew services and maintains this drone which can soar to 65,000 feet and make non-stop thirty-five hour missions.²³ On the other end of the spectrum, small, unsophisticated drones can be purchased at the local hobby shop or online for the price of a smartphone.²⁴ Cameras can be attached to a drone and stream video back to a tablet or smartphone, which is operated via a Wi-Fi network generated by the drone.²⁵ One of the smallest drones is the Norwegian-developed Black Hornet, which weighs sixteen grams and “has an operational radius of more than one kilometre

¹⁹ See GOLDBERG ET AL., *supra* note 2, at 5.

²⁰ See Ed Crooks, *Conoco in Landmark Alaska Drone Flight*, CNBC (Sept. 25, 2013, 2:09 AM), <http://www.cnbc.com/id/101060663>.

²¹ See Rachel Janik & Mitchell Armentrout, *Industry Looks to Use Drones for Commercial Purposes*, MCCLATCHY DC (April 29, 2013), <http://www.mcclatchydc.com/2013/04/29/189893/industry-looks-to-use-drones-for.html>.

²² GOLDBERG ET AL., *supra* note 2, at 5.

²³ *Id.* The Global Hawk provided imagery over the California wildfires in 2008, the Haitian earthquake in 2010, and the Japanese post-tsunami disaster in 2011. *Id.*

²⁴ *See id.*

²⁵ *See id.* at 6.

and twenty-five minute endurance.”²⁶ A popular drone is the fixed-wing Raven, which has “a duration of 90 minutes, a 10 kilometre operational radius, and a maximum ceiling of 14,000 feet.”²⁷ The Raven can be equipped with a sophisticated camera system and nighttime infrared capabilities; it costs approximately \$35,000 dollars.²⁸ The Draganflyer drone has a flight time of twenty minutes without payload, which is a maximum of eighteen ounces.²⁹ The Predator drone, on the other hand, can carry 3,000 pounds and has an operational flight time of twenty-seven hours.³⁰

[9] Law enforcement, in particular, has caught on to the drone craze. The Miami Police Department in Florida has drones—two Honeywell aircraft to fly no higher than 400 feet over the everglades.³¹ The U.S. Customs and Border Patrol (CBP) currently operates ten Predator drones³²

²⁶ *Id.* at 7.

²⁷ GOLDBERG ET AL., *supra* note 2, at 10 (citing *UAS: RQ-11B Raven*, AEROVIRONMENT, INC., http://www.avinc.com/uas/small_uas/raven (last visited Mar. 5, 2014)).

²⁸ *See id.*

²⁹ *See Questions Many People Ask of Us*, DRAGANFLY INNOVATIONS, INC., <http://www.draganfly.com/question-answers> (last visited Mar. 5, 2014); *X6 Technical Overview*, DRAGANFLY INNOVATIONS, INC., <http://www.draganfly.com/uav-helicopter/draganflyer-x6a/specifications> (Mar. 5, 2014).

³⁰ *Predator® B UAS*, GENERAL ATOMICS AERONAUTICAL, http://www.gasi.com/products/aircraft/predator_b.php (last visited Mar. 24, 2014).

³¹ JAY STANLEY & CATHERINE CRUMP, AM. CIVIL LIBERTIES UNION, PROTECTING PRIVACY FROM AERIAL SURVEILLANCE: RECOMMENDATIONS FOR GOVERNMENT USE OF DRONE AIRCRAFT 7 (2011) (citing Yochi J. Dreazen, *From Pakistan, with Love: The Technology Used to Monitor the Skies over Waziristan Is Coming to Your Hometown*, NAT’L J. (Mar. 13, 2011), <http://www.nationaljournal.com/magazine/drones-may-becoming-to-your-hometown-20110313>).

³² *See* Craig Whitlock & Craig Timberg, *Border-Patrol Drones Being Borrowed by Other Agencies More Often than Previously Known*, WASH. POST (Jan. 14, 2014),

and hopes to expand their number of drones to twenty-four by 2016.³³ CBP drones patrol the southern border, and the Department of Defense has sent drones into Mexico to gather information about major drug traffickers.³⁴

[10] Two “nanodrones” are currently in production and garnering interest. The hummingbird drone “navigates by changing the angle and shape of its paper-thin wings—which beat twenty to forty times per second—and can hover in place for up to 11 minutes.”³⁵ “It is also small enough to fly through windows or other small openings, strong enough to carry a microphone or camera, and stable enough to maintain a highly controlled hover, even in gusts of wind.”³⁶ The mosquito drone can be remotely controlled and is equipped with a camera and a microphone.³⁷

http://www.washingtonpost.com/world/national-security/border-patrol-drones-being-borrowed-by-other-agencies-more-often-than-previously-known/2014/01/14/5f987af0-7d49-11e3-9556-4a4bf7bcd84_story.html.

³³ See STANLEY & CRUMP, *supra* note 31, at 6 (citing U.S. GEN. ACCOUNTABILITY OFFICE, OBSERVATIONS ON THE COSTS AND BENEFITS OF AN INCREASED DEPARTMENT OF DEFENSE ROLE IN HELPING TO SECURE THE SOUTHWEST LAND BORDER, GAO-11-856R (Sept. 12, 2011), available at <http://www.gao.gov/products/GAO-11-856R>).

³⁴ See *id.* at 7 (citing Ginger Thompson & Mark Mazzetti, *U.S. Drones Fight Mexican Drug Trade*, N. Y. TIMES, (Mar. 15, 2011), <http://www.nytimes.com/2011/03/16/world/americas/16drug.html>).

³⁵ *Aerovironment Nano Hummingbird UAV*, POPULAR SCIENCE, <http://www.popsci.com/bown/2011/product/aerovironment-nano-hummingbird-uav> (last visited Mar. 6, 2014).

³⁶ *Id.*

³⁷ Robert Johnson, *The Future of Micro Drones Could Get Downright Scary*, BUS. INSIDER (June 20, 2012, 11:49 AM), <http://www.businessinsider.com/the-future-of-micro-drones-is-getting-pretty-scary-according-to-alan-lovejoy-2012-6>.

Once it lands, it can take a DNA sample or leave an RFID³⁸ tracking device under the skin.³⁹

[11] Both the Federal Bureau of Investigation (FBI) and Drug Enforcement Administration (DEA) have used Predator drones inside the United States.⁴⁰ FBI Director Robert Mueller commented to Congress that drones were “very seldom used” by his agents but that he was aware of at least three drones in FBI possession as of 2011.⁴¹ The police department in Mesa County, Colorado operates its Draganflyer drones in their county.⁴² Police in Arlington, Texas used drones to assist with security during the Super Bowl in February 2011 and also for “‘training and evaluation’ purposes in unpopulated areas.”⁴³ The Texas Department

38

Radio frequency identification, or RFID, is a generic term for technologies that use radio waves to automatically identify people or objects. There are several methods of identification, but the most common is to store a serial number that identifies a person or object, and perhaps other information, on a microchip that is attached to an antenna (the chip and the antenna together are called an RFID transponder or an RFID tag). The antenna enables the chip to transmit the identification information to a reader. The reader converts the radio waves reflected back from the RFID tag into digital information that can then be passed on to computers that can make use of it.

Frequently Asked Questions, RFID J., <http://www.rfidjournal.com/site/faqs#Anchor-What-363> (last visited Mar. 6, 2014).

³⁹ See Johnson, *supra* note 37.

⁴⁰ See STANLEY & CRUMP, *supra* note 31, at 7.

⁴¹ Somini Sengupta, *U.S. Border Agency Allows Others to Use Its Drones*, N.Y. TIMES (July 3, 2013), http://www.nytimes.com/2013/07/04/business/us-border-agency-is-a-frequent-lender-of-its-drones.html?pagewanted=all&_r=0.

⁴² See STANLEY & CRUMP, *supra* note 31, at 7.

⁴³ *Id.* at 8.

of Public Safety used a bird-sized “Wasp” aircraft to conduct aerial surveillance during the execution of a search warrant.⁴⁴ The city of Ogden, Utah, sought FAA permission in 2011 to deploy an unmanned blimp for surveillance and crime prevention.⁴⁵ National Guard units around the country operate drones to train for their use overseas⁴⁶ and the United States Forest Service has been known to use drones to fly over national parks.⁴⁷

[12] More than 300 drones have been licensed by the FAA to fly over U.S. soil.⁴⁸ The FAA expects that number to increase to 30,000 by 2020.⁴⁹ An aerospace consulting firm estimates that the commercial drone industry is currently worth \$14 billion per year and that drones will soon become a \$90 billion industry that creates thousands of jobs in the next decade.⁵⁰ The Association of Unmanned Vehicle Systems International

⁴⁴ *See id.*

⁴⁵ *Id.*

⁴⁶ *See id.*

⁴⁷ *See* Brian Skoloff & Tracie Cone, *Calif. Launches Drone to Aid Wildfire Battle*, YAHOO! NEWS (Aug. 28, 2013, 10:04 PM), <http://news.yahoo.com/calif-launches-drone-aid-wildfire-battle-211622327.html> (discussing the U.S. Forest Service's use of the Predator drone to fight the Rim Fire in Yosemite National Park).

⁴⁸ *See Domestic Unmanned Aerial Vehicles (UAVs) and Drones*, EPIC.ORG, <http://epic.org/privacy/drones> (last visited Mar. 6, 2014).

⁴⁹ *See* Shaun Waterman, *Drones Over U.S. Get OK by Congress*, WASH. TIMES (Feb. 7, 2012), <http://www.washingtontimes.com/news/2012/feb/7/coming-to-a-sky-near-you/?page=all>.

⁵⁰ *See* Clay Dillow, *What Is the Drone Industry Really Worth?*, CNN MONEY (Mar. 12, 2013 2:09 PM), <http://tech.fortune.cnn.com/2013/03/12/what-is-the-drone-industry-really-worth>; Josh Solomon, *Uncertainties Remain as FAA Integrates Drones Into American Skies*, MCCLATCHY DC (April 29, 2013), <http://www.mcclatchydc.com/2013/04/29/189894/uncertainties-remain-as-faa-integrates.html>. For three days in August of 2013, “8,000 attendees from over 40

(AUVSI) lobbies on behalf of the drone industry and sponsors conferences advertising the technological advances made in drones and their variety of uses.⁵¹ At one of the latest drone conferences, an insurance company advertised themselves as providing "the most comprehensive Drone Operator Coverage and Drone Manufacturing Coverage available in the market."⁵²

[13] The Pentagon cut spending on military drones from \$4.8 billion in 2012 to \$3.8 billion in 2013 with further reductions anticipated.⁵³ Initially, drones were used by the military as a reconnaissance tool, with the D-21 drone making its first reconnaissance mission over China in 1969.⁵⁴ In 1995, the Central Intelligence Agency (CIA) sent drones on more than 600 reconnaissance missions in the Bosnian conflict, and the drones also provided intelligence for NATO forces in the 1999 Kosovo air

countries . . . converge[d] on Washington, D.C. for the largest international unmanned systems conference where over 600 exhibitors consume[d] more than 350,000 square feet of exhibit space." *Why Exhibit?*, AUVSI'S UNMANNED SYSTEMS 2013, <http://www.auvsishow.org/auvsi13/public/Content.aspx?ID=1202> (last visited Mar. 10, 2014).

⁵¹ See *Advocacy*, AUVSI, <http://www.auvsi.org/advocacy> (last visited March 10, 2014).

⁵² Arin Greenwood, *Drone Conference 2013: Unmanned Vehicle Industry Worries Word 'Drone' Has Negative Connotations*, HUFFINGTON POST (Aug. 14, 2013, 10:27 PM), http://www.huffingtonpost.com/2013/08/14/drone-convention-2013_n_3756641.html.

⁵³ See GOLDBERG ET AL., *supra* note 2, at 2. Drones have been operational since 1946 when drones were sent through mushroom clouds at Bikini Atoll during nuclear testing in order for the government to be able to sample nuclear fallout. See JACOBSEN, *supra* note 5, at 223. The drone operators flew the drones by remote control from an airborne mother ship flying nearby. See *id.*

⁵⁴ See JACOBSEN, *supra* note 5, at 221. The drone flew into China and over the Lop Nur nuclear facility but then strayed off course into Soviet Siberia, ran out of fuel, and crashed. *Id.* The drone was later given back to the CIA by a KGB agent in Moscow as a gift. *Id.*

campaign by “searching for targets” and “keeping an eye on Kosovar-Albanian refugee camps.”⁵⁵ In January 2001, the CIA considered assassinating Osama bin Laden with the Predator drone, but the Predator had only been used for reconnaissance missions.⁵⁶ This was the first occasion that the military considered using drones as a weapon rather than as a reconnaissance tool.⁵⁷ Today, with significant military budget cuts looming, drone manufacturers need to find a new market for their creations.

[14] Therefore, aerospace manufacturers are looking to create a lucrative civilian market. The chief operating officer of a Los Angeles-based company that makes operating systems for drones, Denis Clements, remarked that the drone industry is transitioning “from all-military on a relatively small scale to international and commercial on a large scale.”⁵⁸ The AUVSI estimates that the industry will be worth \$82 billion and employ 100,000 people by 2025.⁵⁹

[15] Law enforcement, in particular, is interested in using drones as they are typically smaller than traditional aircraft, less likely to be detected, create less noise and vibrations, and less expensive than aircraft and helicopters so they can afford to purchase and use more of them.⁶⁰ Of

⁵⁵ *Id.* at 352.

⁵⁶ *See id.* at 350.

⁵⁷ *See id.* The new weaponized drone technology was tested at Area 51. *See id.* at 351. The Predator can carry 200 pounds of weapons. *See id.* at 355.

⁵⁸ Greenwood, *supra* note 52.

⁵⁹ *See id.*

⁶⁰ The Falcon UAV can fly at up to 1,500 feet and has a sixty to ninety minute operational flight time. *Information*, FALCON UAV, <http://www.falcon-uav.com/falcon-uav-info> (last visited Mar. 10, 2014). The Falcon UAV can cost as little as \$3.36 per hour to operate compared to \$250-\$600 per hour to operate traditional aircraft. *See*

course, the cost depends upon the size and sophistication of the drone, and law enforcement need also worry about collisions and tort liability if one of their drones collides with other aircraft or destroys personal property on the ground.

III. ASSOCIATED SAFETY CONCERNS

[16] Who owns the airspace and who can regulate drone flights? In early English and American common law, courts followed the rule that whoever owned the land possessed all the space above the land extending upwards into the heavens.⁶¹ Much later, Congress changed that tradition by passing the Air Commerce Act of 1926⁶² and the Civil Aeronautics Act of 1938,⁶³ which granted the United States complete sovereignty over its own airspace. Then, in 1958, the passage of the Federal Aviation Act⁶⁴ gave the new Federal Aviation Administration (FAA) the responsibility to set uniform rules for the operation of aircraft in United States airspace.⁶⁵

Darrell Preston, *Drones Take to American Skies on Police, Search Missions*, BLOOMBERG (May 31, 2012), <http://www.bloomberg.com/news/2012-05-31/drones-take-to-american-skies-on-police-search-missions.html>.

⁶¹ See, e.g., Colin Cahoon, *Low Altitude Airspace: A Property Rights No-Man's Land*, 56 J. AIR L. & COM. 157, 163 (1990). The ancient Latin law saying was "*cujus est solum, ejus est usque ad coelum*." *Id.* at 162. "It is ancient doctrine that at common law ownership of the land extended to the periphery of the universe—*cujus est solum ejus est usque ad coelum*. But that doctrine has no place in the modern world." *United States v. Causby*, 328 U.S. 256, 260-61 (1946) (citation omitted).

⁶² Air Commerce Act of 1926, Pub. L. No. 69-251, 44 Stat. 568.

⁶³ See Civil Aeronautics Act of 1938, Pub. L. No. 75-706, 52 Stat. 973.

⁶⁴ Federal Aviation Act of 1958, Pub. L. No. 85-726; 72 Stat. 731.

⁶⁵ H.R. REP. NO. 85-2360, at 1 (1958), *reprinted in* 1958 U.S.C.C.A.N. 3741, 3741.

[17] According to FAA regulations, fixed-wing aircraft must operate at least “1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft” in congested areas and “500 feet above the surface” in non-congested areas.⁶⁶ A helicopter may fly below the minimum safe altitudes prescribed for fixed-wing aircraft if it is operated “without hazard to persons or property on the surface.”⁶⁷ According to a 1981 FAA advisory circular, recreational users of model aircraft may fly a sufficient distance from populated areas and may not fly in the vicinity of full scale aircraft, into noise-sensitive areas such as parks, schools, hospitals, or churches, or more than 400 feet above the surface.⁶⁸

[18] Regulations mandating safe minimum operating altitudes have not been set forth specifically for drones, and it is unclear whether some smaller drones may fall under the 1981 advisory circular for model aircraft. By contrast, the United Kingdom

permits private use of RPAS [remotely piloted aircraft] under [twenty kilograms] to be flown within line of sight to avoid collisions and the operator must maintain constant visual contact with the aircraft. Flights less than 100 feet above the ground are nearly free of regulation and those between 100 and 400 feet are somewhat free for non-commercial uses, although all must comply with the basic rules of air. Traditional flight regulations apply to all aircraft over [twenty kilograms].⁶⁹

⁶⁶ 14 C.F.R. § 91.119(b), (c) (2013).

⁶⁷ 14 C.F.R. § 91.119(d) (2013).

⁶⁸ FED. AVIATION ADMIN., ADVISORY CIRCULAR 91-57 (1981), *available at* http://www.faa.gov/documentLibrary/media/Advisory_Circular/91-57.pdf; *see* 72 Fed. Reg. 6,689, 6,690 (Feb. 13, 2007). The guidelines are voluntary compared to FAA regulations. *See* FED. AVIATION ADMIN., *supra*.

⁶⁹ GOLDBERG ET AL., *supra* note 2, at 14.

[19] With an increase in drone usage, the biggest safety concern is the probability of mid-air collisions. Another concern is drone malfunctions and subsequent crashes due to third parties interfering with signals sent to the drone, causing the operator to lose control of the aircraft. Drones require satellites (and satellite links) to relay information to and from the pilots who operate the drones via remote control; a drone need only be in line of sight with its ground control station when it lands, the rest is done via satellite link.⁷⁰ A third party could jam communications or target the drone's GPS link and manipulate its flight position.⁷¹ In December 2011, Iran alleged that it was able to hack into a U.S. government drone's GPS navigational controls as it was flying back to its base in Afghanistan and had it safely land in Iran where Iranian engineers were then able to design their own drones based off the U.S. model.⁷²

[20] A number of domestic drone accidents have already been reported. Drones experience an accident rate over seven times higher than general aviation and 353 times higher than in commercial aviation.⁷³

[21] Private property owners have the ability to sue the government for any damage done to their property by government-operated drones via the Fifth Amendment Takings Clause, which states that private property may not "be taken for public use, without just compensation."⁷⁴ The property

⁷⁰ See JACOBSEN, *supra* note 5, at 358.

⁷¹ See Solomon, *supra* note 50.

⁷² See Marcus George, *Iran Military Says Copying U.S. Drone*, REUTERS (Apr. 22, 2012), <http://www.reuters.com/article/2012/04/22/us-iran-military-drone-idUSBRE83L02I20120422>; Adam Rawnsley, *Iran's Alleged Drone Hack: Tough, but Possible*, WIRED (Dec. 16, 2011, 6:01 PM), <http://www.wired.com/dangerroom/2011/12/iran-drone-hack-gps>.

⁷³ See STANLEY & CRUMP, *supra* note 31, at 10 (citations omitted).

⁷⁴ U.S. CONST. amend. V.

owners must allege that the drone flight directly and immediately interfered with their use and enjoyment of their surface land.⁷⁵ To allege an actionable trespass against non-government actors (who are immune from the Fifth Amendment Takings Clause), a landowner has various causes of actions in tort to consider, such as trespass and nuisance, and may argue that the interference by the drone occurred within the immediate reaches of the land or with the actual use of his land.⁷⁶

[22] To address the public's security concerns, Congress passed the FAA Modernization and Reform Act of 2012⁷⁷ which requires the FAA to "develop a comprehensive plan to safely accelerate the integration of civil unmanned aircraft systems into the national airspace system"⁷⁸ by September 30, 2015.⁷⁹ Lawmakers were concerned about drone safety and uniformity throughout the national airspace. Specific provisions in the "Drone Act" authorize law enforcement and other government agencies to use drones while the FAA is crafting its regulations for commercial use and also mandates that the drones must weigh twenty-five pounds or less, cannot be operated higher than 400 feet above the ground

⁷⁵ *Id.*; see *United States v. Causby*, 328 U.S. 256, 262 (1946).

⁷⁶ See, e.g., RESTATEMENT (SECOND) OF TORTS § 159(2) (1965) ("Flight by aircraft in the air space above the land of another is a trespass if, but only if, (a) it enters into the immediate reaches of the air space next to the land, and (b) it interferes substantially with the other's use and enjoyment of his land").

⁷⁷ FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95 § 332(a)(1), 126 Stat. 11, 73 (2012) (codified as amended in scattered sections of 49 U.S.C.).

⁷⁸ *Id.* The FAA's plan must include recommendations or projections on how the rulemaking will address the certification process for drones; drone sense and avoid capabilities; and establishing operator or pilot standards, including a licensing and registration system. See § 332(a)(2)(1)(A).

⁷⁹ § 332(a)(3). The law was signed by the President on February 14, 2012.

or near airports and must remain within the naked eyesight of the operator.⁸⁰

[23] Currently, any federal, state, or local agency wanting to operate a drone in national airspace needs a certificate of authorization from the FAA.⁸¹ The FAA conducts an operational and technical review of the drone in order to ensure citizens' safety when the drone is in use in national airspace.⁸² Private commercial operators must receive a special airworthiness certificate in order to operate a drone.⁸³

[24] While drafting new regulations, the FAA is also creating a series of test ranges and designating specific airspace throughout the country to be used to operate drone flights in order to develop better certification and air traffic standards.⁸⁴ These test flights will assist the FAA in learning more about the safe operation of drones while traveling in navigable U.S. airspace.⁸⁵ Twenty-five applicants from twenty-four states applied to be test sites and of those twenty-five applicants, the FAA chose Alaska, Nevada, New York, North Dakota, Texas, and Virginia to host drone test sites.⁸⁶

⁸⁰ See Solomon, *supra* note 50.

⁸¹ See Unmanned Aircraft Operations in the National Airspace System, 72 Fed. Reg. 6689-01 (Feb. 13, 2007) (codified at 14 C.F.R pt. 91).

⁸² See *Unmanned Aircraft Systems: Certificates and Authorizations*, FAA, <http://www.faa.gov/about/initiatives/uas/cert> (last modified Mar. 19, 2013, 10:56 AM).

⁸³ See 14 C.F.R. §§ 21.191, 21.193 (2013); Unmanned Aircraft Operations in the National Airspace System, 72 Fed. Reg. at 6689-90.

⁸⁴ FAA Modernization and Reform Act § 332(c).

⁸⁵ *FAA Selects Unmanned Aircraft Systems Research and Test Sites*, FAA (Dec. 30, 2013), http://www.faa.gov/news/press_releases/news_story.cfm?newsid=15576.

⁸⁶ Those states that applied to be test sites include: New York, Michigan, Ohio, Maryland, Virginia, North Carolina, Georgia, Alabama, Florida, Mississippi, Minnesota,

IV. ASSOCIATED PRIVACY CONCERNS

A. State Legislation

[25] Forty-five states have introduced legislation to protect privacy and limit drone use.⁸⁷ These states seem to be singularly focused on law enforcement's use of drones and are not overly concerned about the privacy ramifications as drone use increases for private, commercial and recreational purposes. Most of the proposed state legislation allows private citizens to bring a civil action against a government agency which uses a drone against them but does not place any restrictions on other private citizens who might use a drone for similar surveillance purposes.⁸⁸ Many of the bills are currently pending; twelve bills have died, been vetoed, or are pending for further study; twelve bills have passed and become law.⁸⁹ Additionally, Indiana has passed a resolution calling for the creation of a committee to study the use of drones,⁹⁰ and Alaska has

North Dakota, Oklahoma, Texas, Colorado, Utah, Arizona, Nevada, California, Idaho, Wyoming, Washington, and Alaska. *See Map Showing State Distribution of UAS Test Site Proposals Across the Nation*, FAA, http://www.faa.gov/about/initiatives/uas/media/UAS_testsite_map.pdf (last visited Mar. 10, 2014); *see also FAA Selects Six Sites for Unmanned Aircraft Research*, FAA, <http://www.faa.gov/news/updates/?newsId=75399> (last modified Dec. 30, 2013).

⁸⁷ *See infra* Tables 1-5; *2014 Status of Domestic Drone Legislation*, *supra* note 7; *2013 Status of Domestic Drone Legislation*, *supra* note 7.

⁸⁸ *See infra* Tables 1-5. Only Idaho, Rhode Island, and Texas create a civil cause of action against private citizens, and only Michigan, New Hampshire, New York, and Texas have created criminal penalties for the authorized use of drone for surveillance. *Id.*

⁸⁹ *See infra* Tables 1-5; *2014 Status of Domestic Drone Legislation*, *supra* note 7; *2013 Status of Domestic Drone Legislation*, *supra* note 7. States that have passed legislation include: Florida, Idaho, Illinois, Indiana, Iowa, Montana, Oregon, Tennessee, Texas, Utah, Virginia, and Wisconsin.

⁹⁰ S. Res. 27, 118th Gen. Assemb. 1st Reg. Sess. (Ind. 2013).

passed a resolution to create a task force to assist the FAA in creating a safe place for the testing of drones and the development of adequate safety procedures for future drone use.⁹¹

[26] Perhaps states are relying upon the common law torts of trespass, nuisance, invasion of privacy, stalking, and harassment to keep personal abuse in check. An individual who alleges another private individual has invaded his privacy through the use of a drone must prove that the defendant intruded, physically or otherwise, upon the plaintiff's solitude or seclusion or his private affairs or concerns and "the intrusion would be highly offensive to a reasonable person."⁹² A plaintiff's nuisance claim would be based upon the right to use and enjoy land—it is not necessary to show that the interference by the drone actually occupied the owner's land (it could fly over adjoining lands only) so long as the flight substantially and unreasonably interfered with the use and enjoyment of the land.⁹³

[27] While personal drone operators are left to their own devices, legislatures have given law enforcement strict guidelines.⁹⁴ The overall trend of the state laws is to make the use of drones more restrictive than what the Supreme Court currently requires for aerial surveillance. States deem themselves proactive by adopting legislation to limit drone flights and make the use of drones by law enforcement fall under requirements as if the Fourth Amendment applied to their actions. Most of the current or pending state laws do not allow the use of drones without some type of reasonable suspicion or probable cause.⁹⁵

⁹¹ H.R. Con. Res. 6, 28th Leg., 1st Reg. Sess. (Alaska 2013).

⁹² RESTATEMENT (SECOND) OF TORTS § 652B (1977).

⁹³ See RESTATEMENT (SECOND) OF TORTS § 159(2) (1965).

⁹⁴ See, e.g., TENN. CODE ANN. § 39-13-609 (2013) (requiring that law enforcement first obtain a warrant prior to using a drone or use a drone pursuant to narrowly defined exceptions to the statutory warrant requirement).

⁹⁵ See generally *infra* Tables 1-5.

[28] For example, Florida signed into law the Freedom from Unwarranted Surveillance Act, effective July 1, 2013.⁹⁶ The new Florida law bans local law enforcement from using drones unless they have a warrant or there is a credible threat of a terrorist attack or if reasonable suspicion exists to indicate “swift action is needed to prevent imminent danger to life or serious damage to property” or “to forestall the imminent escape of a suspect or the destruction of evidence, or to achieve purposes including, but not limited to, facilitating the search for a missing person.”⁹⁷ The Florida law prohibits the use of information collected by drones in violation of the act being used as evidence in courts.⁹⁸

[29] Idaho requires law enforcement to seek a warrant to use a drone to gather evidence unless exigent circumstances exist or the agent possesses reasonable suspicion that, under particular circumstances, swift action to prevent danger to life is necessary.⁹⁹

[30] Illinois requires law enforcement to seek a warrant except if the drone will be used to prevent a terrorist attack, prevent death or serious bodily injury, prevent escape of a suspect, or to protect evidence.¹⁰⁰ Law enforcement must destroy all information obtained by the drone within thirty days unless there is a pending investigation or trial, and agencies are required to report to legislators annually on drone usage.¹⁰¹

⁹⁶ FLA. STAT. § 934.50 (2013).

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ *See* IDAHO CODE ANN. § 21-213 (2013).

¹⁰⁰ Freedom from Drone Surveillance Act, 2013 Ill. Legis. Serv. 98-569 § 15 (West) (codified at 725 ILL. COMP. STAT. 167/§15).

¹⁰¹ *Id.* at §§ 20, 35.

[31] Montana also requires a warrant or a recognized exception to the warrant requirement in order for law enforcement to use a drone.¹⁰² Information obtained from a drone outside the warrant process may not be used in an affidavit for probable cause in an effort to obtain a search or arrest warrant unless the information was obtained through monitoring public lands or international borders.¹⁰³

[32] Oregon requires a warrant for drones unless there is a reasonable belief that there is a threat of bodily harm or death and an affidavit is filed within forty-eight hours of the drone use.¹⁰⁴ A warrant is not required if the drone is used to reconstruct a crime scene, for search and rescue operations, or during a declared state of emergency for public safety purposes only.¹⁰⁵ Drones may not be weaponized.¹⁰⁶

[33] Tennessee requires that “no law enforcement agency shall use a drone to gather evidence or other information” except in the event of a terrorist risk or attack, the existence of a warrant, reasonable suspicion to prevent an imminent danger to life, or if law enforcement is searching for a fugitive or monitoring a hostage, or missing person.¹⁰⁷ No data collected from the drone may be used, copied, or disclosed.¹⁰⁸ Any data must be deleted within twenty-four hours after collection.¹⁰⁹

¹⁰² MONT. CODE ANN. § 46-5-109 (2014 Supp.).

¹⁰³ *Id.*

¹⁰⁴ OR. REV. STAT. § 837.335 (2013 Supp.).

¹⁰⁵ § 837.340.

¹⁰⁶ *See* § 837.365.

¹⁰⁷ TENN. CODE ANN. § 39-13-609 (Supp. 2013).

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

[34] Texas outlaws drone use unless it falls under one of several exceptions.¹¹⁰ Law enforcement in particular may use drones “pursuant to a valid search or arrest warrant;” if law enforcement is “in immediate pursuit of a person law enforcement officers have reasonable suspicion or probable cause to suspect has committed an offense;” “for the purpose of documenting a crime scene;” “for the purpose of investigating the scene of [] a human fatality; [] a motor vehicle accident causing death or serious bodily injury to a person;” “in connection with the search for a missing person;” or “for the purpose of conducting a high-risk tactical operation that poses a threat to human life.”¹¹¹

[35] Virginia is the most restrictive state and does not allow for a warrant to grant the use of drones.¹¹² However, drones can be used for Amber Alerts, Senior Alerts,¹¹³ Blue Alerts,¹¹⁴ search or rescue operations, or training exercises.¹¹⁵

[36] Idaho and Texas are unique in that they have passed bills that regulate drone surveillance by public and private parties. The Texas legislation provides at least nineteen circumstances when drone use is permitted, for example, by real estate brokers “in connection with the marketing, sale or financing of real property,” oil and gas companies for “inspecting, maintaining, or repairing pipelines,” and utility companies for

¹¹⁰ See TEX. GOV’T CODE ANN. § 423.002 (West 2013 Supp.).

¹¹¹ *Id.*

¹¹² H.R. 2012, 2013 Sess. (Va. 2013).

¹¹³ A Senior Alert is a message sent to the public when a senior adult is reported missing. See VA. CODE ANN. § 52-34.6 (2013 Supp.).

¹¹⁴ Blue Alert is a message sent to the public in the event that either a dangerous suspect or convict has escaped police custody or that a law enforcement officer is missing under circumstances that raise concern for the officer’s safety. See § 52-34.9.

¹¹⁵ H.R. 2012.

“assessing vegetation growth for the purpose of maintaining clearances on utility easements.”¹¹⁶

[37] Legislation is currently pending in: Alabama, Alaska, Arizona, California, Connecticut, Georgia, Hawaii, Kansas, Kentucky, Louisiana, Massachusetts, Michigan, Missouri, Nevada, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Vermont, and West Virginia.¹¹⁷

[38] The following states’ bills are very similar to the legislation already passed in the states previously mentioned. Alabama’s bill, S.B. 317, the Freedom from Drone Surveillance Act, is indefinitely postponed in the Senate.¹¹⁸ Arizona’s bill, H.B. 2574, passed the house committee, but is not law.¹¹⁹ Arizona’s bill would require a search warrant before law enforcement could use a drone to “gather, store or collect evidence of any type, including audio or video recordings,” and the search warrant must include the citizen’s name.¹²⁰ The bill makes an exception if the drone was used to enforce state drug or smuggling laws on public land or on private land with the consent of the landowner.¹²¹ A citizen could lawfully own and operate a drone but could not use it to “monitor other

¹¹⁶ TEX. GOV’T CODE ANN. § 423.002 (West 2013); *see also* Timothy B. Lee, *Can State Laws Protect You from Being Watched by Drones?*, WASH. POST, <http://www.washingtonpost.com/blogs/wonkblog/wp/2013/06/18/can-state-laws-protect-you-from-being-watched-by-drones> (last updated June 18, 2013).

¹¹⁷ *See infra* Tables 1-5.

¹¹⁸ *See* History for SB317, <http://alisondb.legislature.state.al.us/acas/ACTIONHistoryResultsMac.asp?OID=80688&LABEL=SB317> (last visited Mar. 24, 2014) (Alison, Alabama Legislative Information System Online).

¹¹⁹ H.B. 2574, 51st Leg., 1st Reg. Sess. (Ariz. 2013).

¹²⁰ *Id.*

¹²¹ *See id.*

persons inside their homes or places of worship or within the closed confines of their property or other locations where a person would have an expectation of privacy.”¹²²

[39] Arkansas House Bill 1904 would make it unlawful for law enforcement to operate a drone unless they have consent, a search warrant, an emergency situation (immediate danger or serious bodily injury), or conspiratorial activities threatening national security or organized crime.¹²³

[40] California’s bill, S.B. 15, is currently in committee and requires a search warrant unless there is an exception to the search warrant such as exigent circumstances.¹²⁴ Georgia S.B. 200 would require a warrant for government drone use unless exigent circumstances exist.¹²⁵

[41] Maine’s bill passed both chambers but was vetoed by the Governor, and the veto was sustained.¹²⁶ The legislation would have required either a warrant or an emergency situation, with a sworn statement explaining the emergency filed with the court no later than forty-eight hours after the drone flight.¹²⁷ The information collected by

¹²² *Id.*

¹²³ H.B. 1904, 89th Gen. Assemb., 2013 Reg. Sess. (Ark. 2013).

¹²⁴ S.B. 15, 2013-2014 Reg. Sess. (Cal. 2013).

¹²⁵ S.B. 200, 152nd Gen. Ass., 2013-2014 Reg. Sess. (Ga. 2013).

¹²⁶ See *Summary of LD 236*, ST. ME LEGIS., www.mainelegislature.org/LAWMAKERWEB/summary.asp?ID=280046602 (last visited Mar. 24, 2014).

¹²⁷ *Id.*

the drone needed to be destroyed after forty-eight hours unless an investigation or trial was pending.¹²⁸

[42] The American Civil Liberties Union (ACLU) was quick to weigh in on the privacy discussion and recommended that drones deploy only with a warrant, in an emergency, or when specific and articulable grounds to believe that the drone will collect evidence relating to a specific criminal act exist.¹²⁹ Law enforcement should only retain images when there is reasonable suspicion that they contain evidence of a crime or are relevant to an ongoing investigation or trial.¹³⁰ The ACLU argues that the usage policy of drones should be decided democratically rather than by police departments, and that policies are clear, written, and open to the public.¹³¹ Moreover, they insist that the use of drones be subject to open audits and proper oversight to prevent misuse.¹³²

B. Federal Legislation

[43] On the federal level, Rep. Ted Poe (R-Tex.) of the Subcommittee on Crime, Terrorism and Homeland Security introduced the Preserving American Privacy Act of 2013,¹³³ which would prohibit drone use by law

¹²⁸ *Id.* The bill would have permitted courts to extend the order up to thirty days where a court determined it was necessary to achieve the purposes for which the order was granted. *Id.*

¹²⁹ *See* STANLEY & CRUMP, *supra* note 31, at 15.

¹³⁰ *See id.* at 16.

¹³¹ *See id.*

¹³² *See id.*

¹³³ *See* Preserving American Privacy Act of 2013, H.R. 637, 113th Cong. (2013); *see also* Marshall Cohen, *Push in Congress to Protect Privacy Amid Growth in Drone Use*, McCLATCHYDC (Apr. 29, 2013) <http://www.mcclatchydc.com/2013/04/29/189895/push->

enforcement outside the parameters of the legislation and protects private citizens against certain “covered information” collected by drones.¹³⁴ The Act defines “covered information” as “information that is reasonably likely to enable identification of an individual; or [] information about an individual’s property that is not in plain view.”¹³⁵ Law enforcement may operate a drone and collect “covered information” pursuant to a warrant based upon probable cause.¹³⁶ No later than ten days after the execution of the warrant, the governmental entity that sought the warrant must “serve a copy of the warrant on each person on whom covered information was collected, except, if providing such notice would seriously jeopardize an ongoing criminal or national security investigation, the court may delay such notice on request of the governmental entity.”¹³⁷

[44] Under the Act, if law enforcement wishes to operate a drone in a “stipulated public area,” they may seek a court order based upon a showing of “a reasonable suspicion of criminal activity and a reasonable probability that the operation of a public unmanned aircraft system will

[in-congress-to-protect-privacy.html](#) (noting that the AUVSI drone lobby spent \$60,000 lobbying against the bill in 2012).

¹³⁴ H.R. 637 §§ 3119a(2)(a)(b), 3119b(a); *see also Protecting the 4th Amendment*, TED POE: U.S. CONGRESSMAN 2ND DISTRICT OF TEXAS (Jan. 3, 2014, 12:12 PM) <http://poe.house.gov/key-issue-rationale/protecting-the-4th-amendment/> (noting that on April 8, 2013, the Act “was referred to the House Subcommittee on Crime, Terrorism, Homeland Security, and Investigations” and that “[a] subject matter hearing was also held in this subcommittee.”).

¹³⁵ H.R. 637, § 3119a(2)(A), (B). It is unclear whether the legislators mean plain view from the air or within plain view at ground level. The definition of “covered information” appears to cover anything seen during aerial surveillance.

¹³⁶ *See id.* at § 3119c(c)(1)(A).

¹³⁷ *Id.* at § 3119c(c)(1)(B).

provide evidence of such criminal activity.”¹³⁸ The court order may only authorize the operation of the drone “in a stipulated public area for a period of not more than [forty-eight] hours”¹³⁹ “which may be renewed at the court’s discretion for a total period of operation of not longer than [thirty] days.”¹⁴⁰ Ten days after the termination of the court order, law enforcement must “serve a copy on each person on whom covered information was collected”¹⁴¹ or not less than forty-eight hours prior to such operation, law enforcement must notify the public in the stipulated public area, of such operation “in a major publication (with circulation of more than 1,000 in that area); [] on a public Internet Web site of the governmental entity, for the duration of the operation; or [] on public signage in the area, for the duration of the operation.”¹⁴²

[45] There are limited exceptions to the warrant requirement. Law enforcement may use drones outside the warrant requirement if “[t]he operation is within a distance of [twenty-five] miles from any external land boundary of the United States and is for the purpose of patrolling or

¹³⁸ *Id.* at § 3119c(c)(2)(A). The ACLU has interpreted the Act to mean that police are required “to get a warrant based on probable cause before launching a drone to search a non-public area” and reasonable suspicion to search a public area. *See* Sandra Fulton, *Experts Discuss Surveillance at Domestic Drones Hearing*, AM. CIV. LIBERTIES UNION (May. 17, 2013), <https://www.aclu.org/blog/technology-and-liberty-national-security/experts-discuss-surveillance-society-domestic-drones>.

¹³⁹ H.R. 637, § 3119c(c)(2)(B). A “stipulated public area” is not defined in the bill. It is unclear whether curtilage would be considered a private or public area.

¹⁴⁰ *Id.* at § 3119c(c)(2)(C).

¹⁴¹ *Id.* at § 3119c(c)(2)(D)(i). Requiring notice to each person on whom “covered information” was collected could become a daunting task for law enforcement. A drone may very likely collect information that is “reasonably likely to enable identification of an individual” and many people may need to be notified. Is the notice requirement necessary if the data collected must be discarded within a specific period of time and will not be used against the individual in future criminal proceedings?

¹⁴² *Id.* at § 3119c(c)(2)(D)(ii)(I)-(III).

securing the border;”¹⁴³ if “[t]he covered information that is collected or disclosed pertains to an individual who provides prior written consent to such collection or disclosure;”¹⁴⁴ or if an emergency exists which involves “immediate danger of death or serious physical injury to any person; [] conspiratorial activities threatening the national security interest; or [] conspiratorial activities characteristic of organized crime.”¹⁴⁵ In the case of an emergency, the agent must apply for a warrant or order no later than forty-eight hours after the drone operation begins.¹⁴⁶

[46] As for the private use of drones, the Act includes a paparazzi provision making it unlawful to intentionally operate a drone in a “manner that is highly offensive to a reasonable person” or to monitor persons engaging in personal or familial activities, when a reasonable expectation of privacy exists, and regardless of whether a physical trespass exists.¹⁴⁷ The Act also bans the weaponization of drones whether by law enforcement or private persons.¹⁴⁸

[47] Other pending federal legislation includes the Preserving Freedom from Unwarranted Surveillance Act of 2013,¹⁴⁹ which prohibits the use of a drone to gather evidence of criminal conduct except as to the extent authorized by a warrant.¹⁵⁰ Exceptions to the warrant requirement would

¹⁴³ *Id.* at § 3119c(c)(3).

¹⁴⁴ H.R. 637, § 3119c(c)(4).

¹⁴⁵ *Id.* at § 3119c(c)(5)(A)(i)(I)-(III).

¹⁴⁶ *Id.* at § 3119c(c)(5)(B).

¹⁴⁷ *Id.* at § 3119f.

¹⁴⁸ *Id.* at § 3119h.

¹⁴⁹ Preserving Freedom from Unwarranted Surveillance Act of 2013, H.R. 972, 113th Cong. (2013).

include: patrolling United States borders, exigent circumstances, and situations entailing a high risk of a terrorist attack.¹⁵¹ The Act restricts the use of drones more than Fourth Amendment jurisprudence currently requires for a fixed-wing aircraft or helicopter. The Drone Aircraft Privacy and Transparency Act of 2013¹⁵² and Safeguarding Privacy and Fostering Aerospace Innovation Act of 2013¹⁵³ are two additional bills up for consideration before Congress.

V. INVESTIGATORY METHODS AND FOURTH AMENDMENT PROTECTIONS

[48] It is clear from the recently passed and currently pending state and federal legislation on drones that the biggest concern lies in law enforcement's use of drones for criminal investigative activities. Legislators fear we are one step closer to a 24-hour surveillance state and have chosen to pass laws restricting law enforcement's use without much thought as to the Fourth Amendment and what exactly it protects against. In the past, legislators have waited for a Supreme Court decision before acting. For example, the Supreme Court held that law enforcement needed a warrant before electronically eavesdropping on someone's conversation in 1967;¹⁵⁴ Congress then passed the federal wiretap statute, 18 U.S.C. § 2511.¹⁵⁵ In another instance, the Court held that law enforcement's requests of the telephone company for real-time collection

¹⁵⁰ *Id.* at § 2.

¹⁵¹ *Id.* at § 3.

¹⁵² Drone Aircraft Privacy and Transparency Act of 2013, H.R. 1262, 113th Cong. (2013).

¹⁵³ Safeguarding Privacy and Fostering Aerospace Innovation Act, S. 1057, 113th Cong. (2013).

¹⁵⁴ *See* *Katz v. United States*, 389 U.S. 347, 358 (1967).

¹⁵⁵ *See* 18 U.S.C. § 2511 (2012).

of a target's telephone numbers received and dialed did not trigger the Fourth Amendment;¹⁵⁶ Congress subsequently passed the pen register statute, 18 U.S.C. § 3121, and required a court order.¹⁵⁷ Lastly, the Court held that an arrestee must be advised of his or her rights against self-incrimination under the Fifth Amendment before interrogation;¹⁵⁸ Congress subsequently passed 18 U.S.C. § 3501, essentially attempting to overturn the *Miranda* decision.¹⁵⁹

[49] This proactive stance by state and federal legislatures and their aversion to drone use is a bit troubling, and appears to be a knee-jerk reaction to the idea of a “drone surveillance state.” Legislators have not fully explored which law enforcement investigatory tools trigger Fourth Amendment protections and which ones do not, and have not considered the ramifications of their hastily drafted laws.

[50] Law enforcement has a select group of investigatory tools it can use without triggering Fourth Amendment protections. Surveillance of suspects is one of the oldest tools that law enforcement has used to collect information and determine whether criminal activity is occurring.¹⁶⁰ It is one of the first steps of any criminal investigation. The idea that a warrant would be needed to surveil a suspect would effectively cripple any investigation before it even got off the ground.

¹⁵⁶ See *Smith v. Maryland*, 442 U.S. 735, 745-46 (1979).

¹⁵⁷ See 18 U.S.C. § 3121(a) (2012).

¹⁵⁸ See *Miranda v. Arizona*, 384 U.S. 436, 467 (1966).

¹⁵⁹ See 18 U.S.C. § 3501 (2012).

¹⁶⁰ See, e.g., *United States v. Knotts*, 460 U.S. 276, 281 (1983) (holding that police surveillance in areas generally observable by the public did not trigger Fourth Amendment protection).

[51] Only a certain number of investigatory tools are given Fourth Amendment protection. If all investigatory tools were outside the Fourth Amendment, then it would be virtually impossible for law enforcement to ever gain probable cause to seek a warrant. Therefore, law enforcement requires methods and tools that are permissible under Fourth Amendment protections in order to allow for the collection of sufficient information to use as probable cause for an arrest, search, or warrant for other, more intrusive investigatory tools.

[52] During the investigative stage, law enforcement can request voice exemplars¹⁶¹ and handwriting samples¹⁶² from suspects, request information from third parties via subpoena,¹⁶³ utilize informants to gather information on the suspect,¹⁶⁴ sort through the suspect's trash that has been discarded and abandoned,¹⁶⁵ walk in open fields¹⁶⁶ to inspect a marijuana grow operation or a barn converted into a methamphetamine lab, surveil suspects in public places via CCTV¹⁶⁷ video cameras, monitor suspects while observing from a motor vehicle, aircraft or helicopter,¹⁶⁸ or have a K-9 sniff the suspect's luggage¹⁶⁹ or car¹⁷⁰ in order to detect the

¹⁶¹ See *United States v. Dionisio*, 410 U.S. 1, 14-15 (1973).

¹⁶² See *Gilbert v. California*, 388 U.S. 263, 266-67 (1967).

¹⁶³ See *SEC v. Jerry T. O'Brien, Inc.*, 467 U.S. 735, 742 (1984).

¹⁶⁴ See *Hoffa v. United States*, 385 U.S. 293, 311 (1966).

¹⁶⁵ See *California v. Greenwood*, 486 U.S. 35, 40-43 (1988).

¹⁶⁶ See *Oliver v. United States*, 466 U.S. 170, 176 (1984) (quoting *Hester v. United States*, 265 U.S. 57, 59 (1924)).

¹⁶⁷ Closed-circuit television.

¹⁶⁸ See *Florida v. Riley*, 488 U.S. 445, 448 (1989); *California v. Ciraolo*, 476 U.S. 207, 213-14 (1986).

¹⁶⁹ See *United States v. Place*, 462 U.S. 696, 707 (1983).

presence of contraband—all outside any constitutional protection the suspect might have. However, in the past few years, the Court has begun to place additional limits on several of these heretofore lawful, investigatory tools which have been reevaluated from a Fourth Amendment perspective during the appeals process.

[53] In *United States v. Jones*, the Court determined that law enforcement needed a warrant to place a GPS device on the suspect's motor vehicle regardless of whether they intended to monitor the vehicle in public or private areas.¹⁷¹ Also in *Jones*, Justice Sotomayor, in her concurring opinion, challenged the legality of the third party doctrine (the use of gathering information of the suspect that is in the hands of third parties via subpoena) and argued the Court should revisit this doctrine—namely positing that law enforcement should need more than a subpoena to request bank records, e-mail subscriber information, or phone numbers dialed.¹⁷² In *Florida v. Jardines*, the Court held that law enforcement could not use K-9s to sniff the exterior of one's home to detect the presence of narcotics.¹⁷³ While a dog sniff of a car and a dog sniff of a suitcase or person in an airport were deemed acceptable, a dog sniff around the home became too intrusive and required a warrant.¹⁷⁴ Aerial surveillance is similarly being scrutinized once again and is at risk of being moved from the outside the Fourth Amendment category to within Fourth Amendment protections as drone use is evaluated. The question becomes: has the progression from using planes to helicopters to drones

¹⁷⁰ See *Illinois v. Caballes*, 543 U.S. 405, 409 (2005).

¹⁷¹ See *United States v. Jones*, 132 S. Ct. 945 (2012).

¹⁷² See *id.* at 956-57 (Sotomayor, J., concurring).

¹⁷³ See *Florida v. Jardines*, 133 S.Ct. 1409, 1415 (2013).

¹⁷⁴ See *id.* at 1417-18 (“The government’s use of trained police dogs to investigate the home and its immediate surroundings is a ‘search’ within the meaning of the Fourth Amendment.”).

for surveillance purposes become much more intrusive and, therefore, should drone surveillance trigger the protections of the Fourth Amendment?

[54] A common defense strategy in criminal proceedings is to challenge the law enforcement investigatory tool used to collect evidence. Defense attorneys typically argue that a particular technique or tool violates their client's Fourth Amendment rights, that is, "[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures."¹⁷⁵ Some law enforcement techniques only fall under Fourth Amendment protection in specific circumstances, e.g., when the technique is deemed to be overly invasive or the suspect has a reasonable expectation of privacy in this particular instance.¹⁷⁶ If law enforcement were to examine a suspect's e-mail or phone call content,¹⁷⁷ or electronically wiretap a particular phone,¹⁷⁸ enter the home or curtilage of the suspect's house,¹⁷⁹ look into the home using thermal imaging,¹⁸⁰ request fingernail scrapings,¹⁸¹ extract blood,¹⁸² or have a bullet surgically

¹⁷⁵ U.S. CONST. amend IV.

¹⁷⁶ *See, e.g.,* *Kyllo v. United States*, 533 U.S. 27, 40 (2000) (holding that using uncommon devices like Thermovision to "explore details of the home that would previously have been unknowable without physical intrusion" constitute a "search" under the Fourth Amendment).

¹⁷⁷ *But cf. Smith v. Maryland*, 442 U.S. 735, 742 (1979) (holding that a warrant is not required if law enforcement is only collecting the phone numbers received or dialed by the target phone).

¹⁷⁸ *See, e.g., Berger v. New York*, 388 U.S. 41, 58-59 (1967).

¹⁷⁹ *See, e.g., Oliver v. United States*, 466 U.S. 170, 180-81 (1984).

¹⁸⁰ *See, e.g., Kyllo*, 533 U.S. at 40.

¹⁸¹ *See, e.g., Cupp v. Murphy*, 412 U.S. 291, 295 (1973).

¹⁸² *See, e.g., Schmerber v. California*, 384 U.S. 757 (1966).

removed from a suspect,¹⁸³ the Fourth Amendment has been triggered. The Fourth Amendment has two requirements/clauses: that the search be reasonable¹⁸⁴ and that the warrant contain probable cause.¹⁸⁵ Therefore, once the Fourth Amendment is triggered, investigators seek a warrant to counter any potential Fourth Amendment claims by the suspect made at a later date. If they do not seek a warrant, law enforcement must allege that a specific exception to the warrant requirement applies.¹⁸⁶

[55] State legislatures have proceeded with the assumption that drone surveillance falls under Fourth Amendment protections and, therefore, law enforcement must obtain a warrant or show exigent circumstances exist (e.g., threat of a terrorist attack or reasonable suspicion of imminent danger to a person's life) before the use of this technique. This assumption is not necessarily justified.

A. Aerial Surveillance is Outside Fourth Amendment Protections.

[56] The Fourth Amendment applies to government searches and seizures. The Supreme Court determines whether the government action constitutes a search, such that the action violates one's reasonable expectation of privacy,¹⁸⁷ or if the action constitutes a trespass.¹⁸⁸ In three cases, the Supreme Court ruled that aerial surveillance does not trigger the Fourth Amendment. In *California v. Ciraolo*, the Court determined that

¹⁸³ See, e.g., *Winston v. Lee*, 470 U.S. 753, 765 (1985).

¹⁸⁴ U.S. CONST. amend IV; see, e.g., *Camara v. Mun. Ct. S. F.*, 387 U.S. 523, 534-35 (1967).

¹⁸⁵ U.S. CONST. amend IV; see, e.g., *Camara*, 387 U.S. at 534-35.

¹⁸⁶ See *Camara*, 387 U.S. at 529-30.

¹⁸⁷ See, e.g., *Katz v. United States*, 389 U.S. 347, 360-61 (1967) (Harlan, J., concurring).

¹⁸⁸ See *United States v. Jones*, 132 S. Ct. 945, 949-50 (2012).

law enforcement's observation of a marijuana grow in the defendant's back yard from a fixed-wing aircraft flying at 1000 feet was not a Fourth Amendment search.¹⁸⁹ "[T]he home and its curtilage are not necessarily protected from inspection that involves no physical invasion."¹⁹⁰ Law enforcement was within FAA regulations for fixed-wing aircraft—and since the public was able to fly in the same navigable airspace and see the yard with the naked eye from an altitude of 1000 feet, observations during the flight did not constitute a "search" under the Fourth Amendment.¹⁹¹ In essence, *Ciraolo* had no reasonable expectation of privacy since anyone could take a plane ride and view him in his yard below, and there was no trespass because FAA regulations permits planes to fly within that airspace.

[57] In *Florida v. Riley*, the Court found that observation from a helicopter flying at 400 feet was also not a Fourth Amendment search.¹⁹² Flying at 400 feet was within current FAA regulations and any member of the public could have done the same.¹⁹³ *Riley* failed to show "that helicopters flying at 400 feet are sufficiently rare . . . to lend substance to [Riley's] claim that he reasonably anticipated that his greenhouse would not be subject to observation from that altitude."¹⁹⁴

[58] In *Dow Chemical Co. v. United States*, the Environmental Protection Agency had an aerial photographer take pictures of Dow's

¹⁸⁹ See *California v. Ciarolo*, 476 U.S. 207, 213-14 (1986).

¹⁹⁰ *Florida v. Riley*, 488 U.S. 445, 449 (1989) (explaining the Court's reasoning in *Ciraolo*, 476 U.S. 207).

¹⁹¹ See *Ciraolo*, 476 U.S. at 213-14.

¹⁹² See *Riley*, 488 U.S. at 448.

¹⁹³ See *id.* at 451.

¹⁹⁴ *Id.* at 451-452.

manufacturing facility while within navigable airspace.¹⁹⁵ The Court held that the open areas surrounding Dow’s industrial facility were similar to “open fields” and were “open to the view and observation of persons in aircraft lawfully in the public airspace immediately above or sufficiently near the area for the reach of cameras.”¹⁹⁶ The taking of the aerial photographs did not constitute a “search” prohibited under the Fourth Amendment, as “[a]ny person with an airplane and an aerial camera could readily duplicate” the photographs that were taken.¹⁹⁷

[59] If law enforcement drones are flown within FAA regulated navigable airspace, and civilians have the opportunity to fly their own drones commercially and privately in the same airspace, why would law enforcement need a warrant? Is it because law enforcement uses its drones for criminal investigatory purposes, whereas a realtor uses his drone to take pictures of the area, a filmmaker to make a movie, a wildlife organization to monitor animals at the zoo or nature preserve, or a nosy homeowner who wants to spy on a neighbor’s outdoor activities? Understandably, the Fourth Amendment only protects citizens from government intrusion.¹⁹⁸ However, if a private investigator, or a neighbor, or even a criminal actor can utilize a drone to surveil the local law enforcement agency building, why should local law enforcement be unable to do the same? Moreover, the information gathered by law enforcement for a criminal investigation via drone technology would be less intrusive and less accessed than information gathered by a realtor in order to publish a full page advertisement in a local newspaper or magazine or by others who wish to use drones for other purposes.

¹⁹⁵ See *Dow Chem. Co. v. United States*, 476 U.S. 227, 229 (1986).

¹⁹⁶ *Id.* at 239.

¹⁹⁷ *Id.* at 231.

¹⁹⁸ See, e.g., *Guide for Users*, 40 GEO. L.J. ANN. REV. CRIM. PROC. 1, 3-4.

B. The Supreme Court's Fourth Amendment Tools: Reasonable Expectation of Privacy and Trespass

[60] The Supreme Court has done a good job in the past monitoring the grey area that surrounds the boundary between what constitutes a “search” and what does not constitute a “search.” It uses the tools of trespass and what is considered a reasonable expectation of privacy to determine on what side law enforcement’s actions fall.¹⁹⁹ Trespass was a long forgotten tool that recently gathered steam after the *Jones* decision. A physical intrusion of a person, house, paper, or effect is deemed a “search.”²⁰⁰ Thus, the F.B.I.’s placement of a GPS tracker on Jones’ vehicle was deemed a trespass of an “effect” and a Fourth Amendment “search,” thus requiring a warrant.²⁰¹ The physical intrusion of a spike mike into the heating ducts of a suspect’s apartment constituted a “search” in *Silverman v. United States*.²⁰² The physical intrusion into Ms. Mapp’s home without a valid warrant in *Mapp v. Ohio* constituted a “search” in violation of the Fourth Amendment.²⁰³

[61] The second tool the Court uses to determine what constitutes a “search” under the Fourth Amendment is to subject the law enforcement action to a *Katz* analysis.²⁰⁴ If law enforcement’s action violates the suspect’s expectation of privacy and society is prepared to recognize that expectation as reasonable, then law enforcement’s action constitutes a

¹⁹⁹ See *Katz v. United States*, 389 U.S. 347, 360-61 (1967) (Harlan, J., concurring); see also *United States v. Jones*, 132 S. Ct. 945, 953 (2012).

²⁰⁰ *Jones*, 132 S. Ct. at 949-50.

²⁰¹ *Id.* at 946.

²⁰² *Silverman v. United States*, 365 U.S. 505, 509 (1961).

²⁰³ *Mapp v. Ohio*, 367 U.S. 643, 660 (1961).

²⁰⁴ *Katz*, 389 U.S. at 360-61 (Harlan, J., concurring).

“search.”²⁰⁵ Thus a “search” is an action by the government that intrudes, however slightly, upon a person’s reasonable expectation of privacy. The *Katz* analysis was originally designed to resolve issues arising from virtual intrusions rather than physical intrusions of a person, house, paper, or effect. *Katz*’s conversation was silently monitored and listened to outside his physical presence, and it was a stretch to argue that the listening device taped to the top of the telephone booth constituted a “trespass.”²⁰⁶ The Court was more concerned about the violation of *Katz*’s privacy stemming from law enforcement’s uninvited ear rather than the physical trespass of the listening device, albeit slightly.²⁰⁷ Many believed trespass was no longer the mechanism by which the Court determined what constituted a “search.” However, the Supreme Court corrected this misinterpretation in *Jones* by stating that *Katz* merely supplements trespass—therefore, the Court can use either trespass and/or the *Katz* analysis to determine what actions constitute a “search.”²⁰⁸

[62] The Court has used these two theories to determine if a particular law enforcement action triggers Fourth Amendment protections. The utilization of a thermal imaging device in *Kyllo v. United States*²⁰⁹ was found to constitute a “search” because it violated the suspect’s reasonable expectation of privacy in the home and because these types of thermal imaging devices were not generally available to the public.²¹⁰ The Court has drawn a clear line that anything intruding into the home, physically, virtually, or otherwise constitutes a “search.” The warrantless entry and

²⁰⁵ *Id.*

²⁰⁶ *Id.* at 370 (Black, J., dissenting).

²⁰⁷ *Id.* at 353.

²⁰⁸ *United States v. Jones*, 132 S. Ct. 945, 953 (2012).

²⁰⁹ *Kyllo v. United States*, 533 U.S. 27, 34-35 (2000).

²¹⁰ *See id.* at 47 (Stevens, J., dissenting).

search of a home is “the chief evil against which . . . the Fourth Amendment is directed.”²¹¹ “‘At the very core’ of the Fourth Amendment ‘stands the right of a man to retreat into his own home and there be free from unreasonable government intrusion.’”²¹² Curtilage, the area immediately surrounding a dwelling in which the intimate, daily activities of family life are conducted, is also protected.²¹³ The Court has reasoned that citizens have a reasonable expectation of privacy when they conduct activities in their front, side, and back yards.²¹⁴ Therefore, the intrusion of a police-trained K-9 sniffing a suspect’s front door for the presence of narcotics violates that suspect’s expectation of privacy because the K-9 is within the curtilage and is not acting similar to a visitor or salesman soliciting at the front door.²¹⁵ The Fourth Amendment does not protect open fields outside the curtilage.²¹⁶ Under the plain view doctrine, what a

²¹¹ *Id.* at 46 (Stevens, J., dissenting) (quoting *United States v. U.S. Dist. Court of E. Dist. of Mich.*, 407 U.S. 297, 313 (1972)).

²¹² *Id.* at 31 (quoting *Silverman v. United States*, 365 U.S. 505, 511 (1961)).

²¹³ *See Oliver v. United States*, 466 U.S. 170, 180 (1984).

²¹⁴ In *United States v. Dunn*, the Court identified four factors to determine what areas surrounding the home fall into the category of curtilage:

[T]he proximity of the area claimed to be curtilage to the home, whether the area is included within an enclosure surrounding the home, the nature of the uses to which the area is put, and the steps taken by the resident to protect the area from observation by people passing by.

480 U.S. 294, 301 (1987) (citations omitted).

²¹⁵ *See Florida v. Jardines*, 133 S.Ct. 1409, 1415-16 (2013).

²¹⁶ *See Hester v. United States*, 265 U.S. 57, 58 (1924).

person knowingly exposes to the public, even in his own home or office, is not granted Fourth Amendment protection.²¹⁷

[63] Arguably, drone surveillance falls into this grey area. Aircraft and helicopters that fly within FAA-regulated navigable airspace and monitor suspects' activities in public areas fall outside the Fourth Amendment. It is unclear why drones that also fly within FAA regulated navigable airspace and monitor suspects' activities in public areas would not also fall outside the Fourth Amendment. Where is the trespass? As mentioned previously, owners can no longer claim they own the space above their land—flying machines in navigable airspace are not deemed to be trespassing. Drones flying within FAA regulations at 1,000 feet for airplanes will be unable to see inside citizens' homes.²¹⁸ If we apply the FAA circular guidelines, small drones that weigh twenty-five pounds or less cannot be operated higher than 400 feet above the ground, must remain within the naked eyesight of the operator, and must fly a sufficient distance from populated areas.²¹⁹ Therefore, drones would not be used at less than 400 feet in populated areas to peer in property owners' windows. If a drone flies outside the navigable airspace or outside the naked eyesight of the operator in a populated area in the case of a small drone, then the action could be deemed a trespass and a "search." This alleviates any concern that drones will be used to lurk in backyards and spy through bedroom windows to capture intimate activities associated with the home. A drone might be able to see rooftops and backyard gardens or pools but from its aerial vantage viewpoint, it would not be able to see through windows and curtains unless it is flying at that level (which is not permissible via current FAA guidelines for model aircraft). Drones will be able to view activities within the curtilage if not covered, but so can

²¹⁷ See, e.g., *Katz v. United States*, 389 U.S. 347, 360-61 (1967) (Harlan, J., concurring); *Lewis v. United States*, 385 U.S. 206, 213 (1966).

²¹⁸ Robert Molko, *The Drones Are Coming!: Will the Fourth Amendment Stop Their Threat to Our Privacy?*, 78 BROOK. L. REV. 1279 (2013).

²¹⁹ See *supra* text accompanying note 80.

aircraft and helicopters. Therefore, it is unclear why drone use would constitute a trespass or be more intrusive than an aircraft or helicopter.

[64] Does drone use by law enforcement violate a suspect's reasonable expectation of privacy? Drones have the ability to capture images of a suspect and his outdoor activities. The pictures taken from drones may or may not be of better quality than those taken from an aircraft or helicopter, depending upon the sophistication and quality of the particular drone. Thus, it would be difficult to argue the images captured from law enforcement drones violate one's right to privacy as similar technology is available to the public and the government.

[65] Does the fact that some sophisticated drones have the ability to stay in the air and monitor a suspect's activities for several hours create a situation where the suspect's privacy is violated? Boeing is in the process of designing a hydrogen-powered drone called the "Phantom Eye," a "high altitude, long endurance Unmanned Air Vehicle (UAV) with a 270 nm sensing line-of-sight, at 65,000 feet for up to 10 days without refueling."²²⁰ The Court in *Jones* seemed to be concerned about this very thing—the closer technology moves towards twenty-four hour constant surveillance, the greater the possibility the technology is intruding into our right to privacy.²²¹ Justice Alito explained that "the use of longer term GPS monitoring in investigations of most offenses impinges on expectations of privacy. . . In this case, for four weeks, law enforcement agents tracked every movement that respondent made in the vehicle he was driving."²²²

²²⁰ Arin Greenwood, *Drone Conference 2013: Unmanned Vehicle Industry Worries Word 'Drone' Has Negative Connotations*, HUFFINGTON POST (Aug. 14, 2013), http://www.huffingtonpost.com/2013/08/14/drone-convention-2013_n_3756641.html.

²²¹ See *United States v. Jones*, 132 S. Ct. 945, 954 (2012).

²²² *Id.* at 964 (Alito, J., concurring).

[66] Most drones cannot stay in the air for more than an hour (with a few lasting perhaps for a day) before needing to land and refuel.²²³ Unlike GPS tracking, drones still require a flight operator at all times. Drones may be easier to utilize compared to traditional aircraft but they are still more manpower-intensive than a GPS tracking device placed on a motor vehicle where data can be checked and downloaded every few days.

C. Right to Privacy Under the Due Process Clause versus the Right Against Unreasonable Searches and Seizures Under the Fourth Amendment

[67] Assuming that drones could monitor our activities 24/7 once we step out of our homes, how would that constitute a “search” under the Fourth Amendment? In *Jones*, Justice Sotomayor argued that the government’s 24/7 collection of data from GPS trackers would add up to a “search” because the person’s right to privacy had been violated under the Fourth Amendment. Oftentimes, in the drone context, a similar argument is made that the Fourth Amendment guarantees its citizens a right to privacy and that the 24/7 monitoring by drones would violate our right to privacy under the Fourth Amendment. However, the right to privacy stems from the Due Process Clause of the Fourteenth Amendment, which states: “nor shall any State deprive any person of life, liberty, or property, without due process of law.”²²⁴ Substantive due process generally bars

²²³ Most drones can last from a few minutes to an hour in flying time; the more expensive and sophisticated drones, such as the Global Hawk or Predator, can last more than a day in the air. See Kara Plantoni, “*That’s Professor Global Hawk: A Remote-Piloted Warrior Starts Flying for Science*,” AIR & SPACE MAG., <http://www.airspacemag.com/flight-today/thats-professor-global-hawk-433583/?no-ist> (last visited Mar. 25, 2014); see also *Global Hawk—Performance and Specifications*, NAT’L AERONAUTICS & SPACE ADMIN., <http://www.nasa.gov/centers/dryden/aircraft/GlobalHawk/performance.html> (last visited Mar. 5, 2014); *Predator B UAS*, GEN. ATOMICS AERONAUTICAL, http://www.ga-asi.com/products/aircraft/predator_b.php (last visited Mar. 5, 2014).

federal and state governments from depriving anyone's life, liberty, or property by means of a law found to be arbitrary and/or unreasonable.²²⁵ The Fourth Amendment does not guarantee a right to privacy, rather it adds to the privacy analysis in the criminal procedural context by placing certain restrictions on law enforcement actions.

[68] Privacy rights have their foundations rooted in family law, rather than in criminal procedure. *Meyer v. Nebraska*,²²⁶ *Griswold v. Connecticut*,²²⁷ and *Lawrence v. Texas*²²⁸ were significant family law cases that recognized a constitutional right to privacy under the Due Process Clause of the Fourteenth Amendment.²²⁹ In 1923, Meyer challenged a Nebraska statute that prohibited any person from teaching languages other than English, except to pupils who had successfully completed the eighth grade and classified a violation as a misdemeanor.²³⁰ The Court found that Meyer had a right to teach German to a ten-year-old child under the Fourteenth Amendment:

While this court has not attempted to define with exactness the liberty thus guaranteed, . . . [w]ithout doubt, it denotes

²²⁴ U.S. CONST. amend. XIV, § 1.

²²⁵ See generally *Lawrence v. Texas*, 539 U.S. 558 (2003); *Griswold v. Connecticut*, 381 U.S. 479 (1965); *Meyer v. Nebraska*, 262 U.S. 390 (1923).

²²⁶ 262 U.S. 390 (1923).

²²⁷ 381 U.S. 479 (1965).

²²⁸ 539 U.S. 558 (2003).

²²⁹ “No State shall . . . deprive any person of life, liberty or property without due process of law.” U.S. CONST. amend. XIV, § 1.

²³⁰ See *Meyer*, 262 U.S. at 396.

not merely freedom from bodily restraint but also the right of the individual to contract, to engage in any of the common occupations of life, to acquire useful knowledge, to marry, establish a home and bring up children, to worship God according to the dictates of his own conscience, and generally to enjoy those privileges long recognized at common law as essential to the orderly pursuit of happiness by free men. . . . Determination by the legislature of what constitutes proper exercise of police power is not final or conclusive but is subject to supervision by the courts.²³¹

[69] In 1965, the Court in *Griswold* further explained that:

specific guarantees in the Bill of Rights have penumbras, formed by emanations from those guarantees that help give them life and substance. . . . Various guarantees create zones of privacy. The right of association contained in the penumbra²³² of the First Amendment is one, as we have seen. . . . The Fourth Amendment explicitly affirms the “right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures.”²³³

²³¹ *Id.* at 399-400 (citations omitted).

²³² According to the Merriam-Webster dictionary, a penumbra is “a space of partial illumination (as in an eclipse) between the perfect shadow on all sides and the full light.” *Penumbra Definition*, MERRIAM-WEBSTER.COM, <http://www.merriam-webster.com/dictionary/penumbra> (last visited Mar. 25, 2014).

²³³ *Griswold v. Connecticut*, 381 U.S. 479, 484 (1965) (quoting U.S. CONST. amend. IV). In *Griswold*, the appellants argued a criminal statute prohibiting persons from giving information, instruction, and medical advice to married persons on means of preventing conception was unconstitutional via the Fourteenth Amendment. *See id.* at 484-85.

Justice Black, in his *Griswold* dissent, stated, “I like my privacy as well as the next one, but I am nevertheless compelled to admit that government has a right to invade it unless prohibited by some specific constitutional provision.”²³⁴

[70] Justice Stewart, also dissenting in *Griswold*, stated, “With all deference, I can find no such general right of privacy in the Bill of Rights, in any other part of the Constitution, or in any case ever before decided by this Court.”²³⁵ Lastly, in 2003, the plaintiff in *Lawrence* argued that a Texas statute making it a crime for two persons of the same sex to engage in certain intimate sexual conduct was unconstitutional and violated one’s right to privacy.²³⁶ The Court stated that:

Liberty protects the person from unwarranted government intrusions into a dwelling or other private places. In our tradition the State is not omnipresent in the home. And there are other spheres of our lives and existence, outside the home, where the State should not be a dominant presence. Freedom extends beyond spatial bounds. Liberty presumes an autonomy of self that includes freedom of thought, belief, expression, and certain intimate conduct.²³⁷

Thus, the Texas statute furthered “no legitimate state interest which can justify its intrusion into the personal and private life of the individual.”²³⁸

²³⁴ *Id.* at 510 (Black, J., dissenting).

²³⁵ *Id.* at 530.

²³⁶ *Lawrence v. Texas*, 539 U.S. 558, 562-63 (2003).

²³⁷ *Id.* at 562.

²³⁸ *Id.* at 578.

[71] In essence, the Due Process Clause created the model by which the government cannot create laws infringing on our personal freedoms. However, the Fourth Amendment has a different goal. With a general right to privacy already established under the Due Process Clause, the Fourth Amendment focuses on the limits on the government's ability to investigate and enforce criminal laws. As we exercise our right to be free, the government cannot unreasonably monitor us for criminal activity without good cause and it cannot be unduly intrusive. Thus, the government must perform a balancing test—balancing our right to privacy against our need to be monitored to prevent criminal activity and harm to society from occurring. Therefore, we may have a reasonable expectation of privacy in the collection of data ²⁴/7, but the question under the Fourth Amendment is not whether we have an expectation of privacy, but whether the government's action is unreasonable.

[72] The European Convention on Human Rights explains the intersection between this right to privacy and the government's need to monitor:

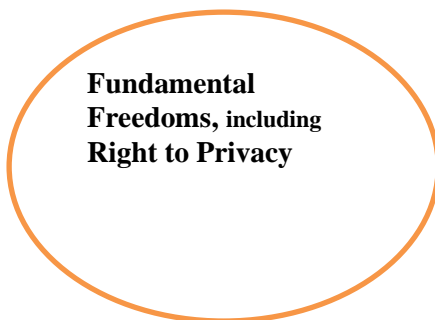
- (1) Everyone has the right to respect for his private and family life, his home and his correspondence.
- (2) There shall be no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others.²³⁹

[73] Thus, under the Due Process Clause, the government does not have the right to interfere with our right to be free, to express ourselves as we

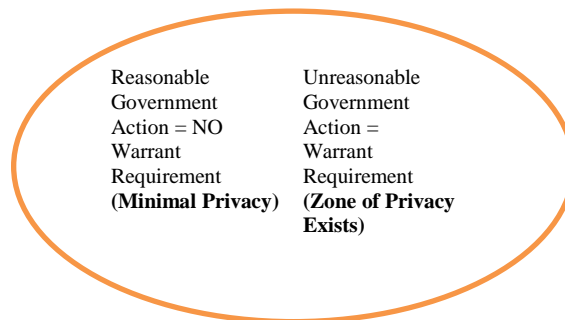
²³⁹ Convention for the Protection of Human Rights and Fundamental Freedoms, art. 8, Nov. 4, 1950, 213 U.N.T.S. 2309.

choose, and to keep our private lives private, separate and apart from government interference. Law enforcement should not intrude into our private lives unless they have sufficient justification to do so, and their justification must be deemed reasonable. A bird's eye view of our actions outside our homes, mowing the lawn, driving to appointments, running errands, driving to work, daycare, or social events, or working in the garden are all actions we have the right to do under the Fourteenth Amendment's Due Process Clause—but we have no inviolate expectation that knowledge of these activities will be kept private. The Fourth Amendment is triggered only in our private spaces when the intrusion into our privacy is so great that it outweighs the government's justification for doing so. The Court has drawn the line between government monitoring of public areas and private areas. The government interferes with our right to privacy when our private spaces are violated. Drones, unless equipped with thermal imaging, infrared, or highly sophisticated and intrusive technology, would not interfere and intrude into private spaces. Therefore, we may have an expectation of privacy that we will not be monitored in public spaces, but it is reasonable for the government to do so. In graphic form, the Due Process Clause and Fourth Amendment would look as follows:

The Due Process Clause:



The Fourth Amendment:



[74] The Due Process Clause establishes our right to privacy, and the Fourth Amendment permits law enforcement intrusion into our privacy if

that intrusion is reasonable. The concern that government surveillance may reveal where we eat, when we go to the gynecologist, where we go to church, who we visit, etc. and that, therefore, the Fourth Amendment's right to privacy is triggered, is only the first step in a Fourth Amendment analysis. One more question must be asked. The Due Process Clause gives us a right to do these things without government intrusion, but the question then becomes whether the surveillance tool law enforcement used was reasonable. The government needs the ability to perform its duties to protect its citizens and have the mechanisms by which to do so. Do we deem this type of monitoring of our actions reasonable? If so, then no warrant is required. If not, then the Fourth Amendment is triggered and a warrant is required.

[75] Many of the activities we are free to do are no longer considered "private." As Justice Alito points out in *Jones*:

[T]he *Katz* test rests on the assumption that this hypothetical reasonable person has a well-developed and stable set of privacy expectations. But technology can change those expectations. Dramatic technological change may lead to periods in which popular expectations are in flux and may ultimately produce significant changes in popular attitudes. New technology may provide increased convenience or security at the expense of privacy, and many people find the tradeoff worthwhile. And even if the public does not welcome the diminution of privacy that new technology entails, they may eventually reconcile themselves to this development as inevitable.²⁴⁰

Less emphasis needs to be placed on privacy and more emphasis must be placed on whether the tool used is reasonable.

²⁴⁰ United States v. Jones, 132 S. Ct. 945, 962 (2012) (Alito, J. concurring).

[76] Moreover, our right to privacy has been diminished by our own desires to use drones for our own personal use. Fewer and fewer investigatory tools are deemed intrusive (and violate our right to privacy) as we, as a society, have deliberately exposed our once private lives into the public arena. Once our thoughts, photographs, and private information are placed on third party, public sites, it is unreasonable to ask law enforcement not to look at them.²⁴¹ If we deem it reasonable that private, third parties may view the data we disclose, then we must deem it reasonable for law enforcement to examine it. A third party's reason for viewing may be different from law enforcement's reason, but the concern is not the purpose for which it is viewed, it is the concern that it violates our right to privacy. Therefore, the privacy debate is diminished because we, as a society, have let it become diminished through our own actions towards greater public exposure. We have decided that being seen and heard is more important than keeping our private actions private.

VI. THE REAL FEAR BEHIND DRONE USE: GOVERNMENT ABUSE

[77] If privacy is not the real concern behind drone use, perhaps it is the fear of law enforcement abuse. If law enforcement uses drone technology to target particular areas of the community and randomly "search for crime," is there another way to keep law enforcement in check than to say drone use automatically triggers the Fourth Amendment and requires a warrant? General crime monitoring has never been considered an acceptable practice by the Court.²⁴² Drones should be used only for investigations of specific targets, not merely to "look for crime." Citizens of the United States do not want to become citizens of the next Soviet Union where agents and drones randomly patrol for criminal or anti-state activity. Citizens fear that regular drone flights might inadvertently

²⁴¹ See, e.g., *People v. Harris*, 945 N.Y.S.2d 505, 509 (N.Y. Crim. Ct. 2012).

²⁴² "We decline to suspend the usual requirement of individualized suspicion where the police seek to employ a checkpoint primarily for the ordinary enterprise of investigating crimes." *City of Indianapolis v. Edmond*, 531 U.S. 32, 44 (2000).

collect data from a whole range of individuals unrelated to a specific investigation.

[78] The answer lies not in requiring a warrant or a particular exception to the warrant requirement, but in requiring law enforcement to seek a court order similar to that required for a pen register under 18 U.S.C. § 2703.²⁴³ To obtain such a court order, law enforcement officials would need to demonstrate specific and articulable facts indicating that the data is relevant to an ongoing criminal investigation. This would prevent law enforcement from using drones to randomly search for crime in a particular area. The order would specify the identity, if known, of the person who is the subject of the criminal investigation and whom law enforcement would like to surveil and describe the particularized need for the information that can be gathered with the drone.²⁴⁴

[79] The order also should contain language requiring law enforcement to discard any information collected by the drone that is not relevant to the scope of the investigation within twenty-four to forty-eight hours. This requirement would alleviate any concerns that the government would collect this information for other nefarious purposes in the future. Being that it is a court order, this requirement would have teeth as long as magistrates signing these orders follow up and demand that law enforcement demonstrate that they in fact have complied with the order and destroyed any irrelevant information. If a law enforcement officer fails to comply, a variety of sanctions could be used to demand

²⁴³ 18 U.S.C. § 2703 (2012); *see also* *Smith v. Maryland*, 442 U.S. 735, 738 n.1 (1979) (quoting *United States v. New York Tel. Co.*, 434 U.S. 159, 161 n.1 (1977)) (“A pen register is a mechanical device that records the numbers dialed on a telephone by monitoring the electrical impulses caused when the dial on the telephone is released. It does not overhear oral communications and does not indicate whether calls are actually completed.”).

²⁴⁴ This language is similar to the language required in a pen register court order under 18 U.S.C. § 3123(b)(1).

compliance. Sanctions even as severe as jail time would cause any law enforcement agent to comply fully.

[80] The court order also should include a penalty for disclosing to unauthorized persons data obtained from a drone, thereby limiting exposure of the information to government personnel working on the particular case, similar to grand jury secrecy requirements under the Federal Rule of Criminal Procedure 6(e).²⁴⁵ Under Federal Rule of Criminal Procedure 6(e)(7), “[a] knowing violation of Rule 6 . . . may be punished as a contempt of court.”²⁴⁶ Moreover, if the drone is flown outside the FAA regulated navigable airspace and views activity not within the public’s vantage point, penalties should also be in place to punish those individuals in violation of strict flight guidelines provided in the court order. Punishing individual agents with contempt of court holds both law enforcement and judges accountable and likely will serve as a more effective means to prevent government abuse than requiring warrants prior to drone flights.

[81] The requirement of a court order similar to that found pursuant to 18 U.S.C. § 2703 eliminates the charade of fitting drone use within the Fourth Amendment context. Instead, it mandates a standard similar to that required for any information the government requests via a court order, such as a request for a pen register.²⁴⁷ While the Supreme Court deemed a pen register to be outside the Fourth Amendment, Congress later passed 18 U.S.C. § 2703 to provide some protections against governmental abuse.²⁴⁸ Drone use does not give rise to privacy issues; it gives rise to

²⁴⁵ FED. R. CRIM. P. 6(e)(2).

²⁴⁶ FED. R. CRIM. P. 6(e)(7).

²⁴⁷ See § 2703 (defining the narrow circumstances under which the government may obtain a wiretap).

²⁴⁸ *Id.*; *Smith*, 442 U.S. at 745-46, *superseded by statute*, Stored Communications Act, 18 U.S.C. §§ 2701-2711.

concerns of government abuse and should follow the pen register precedent.²⁴⁹

[82] The U.S. Constitution contains no express right to privacy, but the Fourth Amendment provides certain guarantees for the privacy of the person and possessions.²⁵⁰ The “liberty” guarantee of the Fourteenth Amendment has been broadly interpreted to guarantee a fairly broad right of privacy and privacy issues.²⁵¹ The Court can address the possible infringement on these undefined privacy issues by focusing on the legality of drone surveillance through the prism of “reasonable” use. If law enforcement utilizes the drone to collect data that is relevant to a particular, ongoing investigation, then the drone use is reasonable.²⁵² The greater the intrusiveness of the investigatory tool, the greater the possibility that tool will move into the “search” category of the Fourth Amendment, at which point the tool becomes unreasonable without a warrant.²⁵³ Therefore, a drone that hovers around bedroom windows and takes photographs of the lady of the house taking her daily sauna would be intrusive and unreasonable and would constitute a “search” under the Fourth Amendment (as would a drone with thermal imaging or x-ray capabilities), and a warrant is required. However, if the lady of the house chooses to walk outside and tend to her garden in her front yard, she must come to terms with the fact that prying eyes may be watching—whether it

²⁴⁹ However, in order to truly attempt to curb government abuse, it would be imperative that magistrate judges develop procedures that would track and monitor agents who had been issued court orders authorizing drone use.

²⁵⁰ See *Katz v. United States*, 389 U.S. 347, 350 (1967).

²⁵¹ See, e.g., *Roe v. Wade*, 410 U.S. 113, 129 (1973) (citing *Griswold v. Connecticut*, 381 U.S. 479 (1965); *Eisenstadt v. Baird*, 405 U.S. 438 (1972)).

²⁵² See, e.g., *Anderson v. Mergenhagen*, 283 Ga. App. 546, 551 (2007) (quoting *Ellenberg v. Pinkerson’s*, 130 Ga. App. 254, 256-57 (1973)).

²⁵³ See, e.g., *Illinois v. McArthur*, 531 U.S. 326, 330 (2001).

be realtors, Hollywood filmmakers, or law enforcement. The tool used in public areas is reasonable and can be utilized without a warrant. It would be reasonable for any of these actors to come across the gardener in the process of conducting their own drone projects. If law enforcement requested the utilization of a drone via a § 2703 court order to assist them in the surveillance of a real-time drug transaction and happen upon the lady of the house tending her marijuana garden, then it would be reasonable for the government to use that evidence against her in a criminal prosecution.²⁵⁴ Language in the court order should allow for the subsequent use of this type of information. Once outside, the lady of the house takes the risk that her actions will be seen; our zones of privacy where a warrant is required have traditionally been reserved for our indoor activities.

[83] Our right to privacy stems from our desire to be free from governmental interference in our daily lives. In the Fourth Amendment context, we have a right to be free from unreasonable searches and seizures and a right to be free from governmental abuse. However, these protections do not extend to any limitation on law enforcement's use of drone surveillance in public areas for a specific purpose. There is no realistic expectation of privacy when a drone passes over one's house or car or observes our activity in public. We gave up the luxury of privacy in public places long ago.

[84] Drone use by law enforcement must be limited but not unduly subjected to Fourth Amendment scrutiny, as drones should not constitute a "search." To limit the temptation to use drones to "look for crime," law enforcement could be subject to the court order process prior to utilizing a drone in an investigation.

²⁵⁴ 18 U.S.C. § 2703(d) (2012).

[85] In my opinion, in the following scenarios drone use by law enforcement might fall closer towards a “search” under the Fourth Amendment and a warrant would most likely be required:

- (1) The drone is flown outside FAA navigable airspace for aircraft and helicopters (below 400 feet);
- (2) The drone collects information emanating from within the home (similar to thermal imaging or infrared sensors that detect movement);
- (3) Law enforcement uses highly sophisticated technology that is not commercially available (e.g., automated license plate readers or facial recognition technology);
- (4) The drone hovers around a particular area which may constitute a long-term sustained monitoring as mentioned in *Jones*, and a reasonable expectation of privacy is triggered; *or*
- (5) The drone hovers and creates an undue amount of wind, noise, dust, or threat of injury that could constitute a “trespass.”

[86] Fourth Amendment cases invoking the *Katz* or *Jones* doctrines all touch upon

the nature of the technology used (does it permit the government to “see” what would otherwise be invisible to the naked eye, even in daylight, from a lawful vantage point) and the nature of the place being observed (is it an open field, the curtilage of a home, commercial property as in *Dow Chemical*, or the interior of a home?).²⁵⁵

The more a drone operates outside of FAA guidelines and the more a drone causes undue dust, noise, and wind, the more the drone operation will constitute a trespass and the Fourth Amendment is triggered. The

²⁵⁵ 1 JOSHUA DRESSLER & ALAN C. MICHAELS, UNDERSTANDING CRIMINAL PROCEDURE: INVESTIGATION 95 (6th ed. 2013).

more a drone uses highly sophisticated technology not available for public use or collects information from inside the home, the more the drone operation will constitute a “search” under the Fourth Amendment as citizens will have a reasonable expectation of privacy in the area and activities being observed.

[87] Therefore, drones that fly within FAA navigable airspace, observing private property below that can be seen by the public in an aircraft, and using commercially available cameras or enhanced sensory technology, would fall outside Fourth Amendment protections and should be regulated via court order as previously suggested.

VII. CONCLUSION

[88] The use of drones by law enforcement does not trigger Fourth Amendment protections. Drone surveillance does not constitute a trespass nor does it violate one’s reasonable expectation of privacy. As a society, we have begun to accept a diminished expectation of privacy. The real question becomes one of reasonableness and whether the use of drones is deemed a reasonable, acceptable law enforcement investigatory tool without requiring a warrant.

[89] Most reasonable people, if asked, would deem it acceptable to allow the Environmental Protection Agency (EPA) to place cameras in areas where companies are known to dump toxic chemicals in order to catch the violators. Most reasonable people, if asked, would likely deem it acceptable and prudent for the EPA to place mobile cameras along sections of a polluted river to monitor for illegal dumping. Is it then logical to assume it acceptable and prudent for the EPA to utilize drones equipped with cameras to monitor the river for illegal dumping?

[90] Drones equipped with a type of mobile camera are used by the Forest Service to monitor for forest fires.²⁵⁶ Should drone film footage be admissible as evidence at a criminal trial if the drone captures an arsonist starting a forest fire? Ditto when a drone captures images of a suspected marijuana field?

[91] Society appears to be comfortable with cameras in public areas. After the Boston Marathon bombing in April 2013, law enforcement obtained photographs from store surveillance cameras in order to identify the Boston bomber.²⁵⁷ Rather than public outrage at the excessive use of surveillance cameras for law enforcement purposes, the public demanded that more be done by law enforcement. There was strong public interest in catching the bombing suspects. In cities such as Washington D.C. and New York City, cameras are everywhere.²⁵⁸ Google Earth and satellite technology have become commonplace. Drones equipped with cameras are simply the latest in surveillance technology. The public is not as concerned about government surveillance in public areas as it once was.

[92] Whether our right to privacy is being violated by the increased use of drones by law enforcement is not the true issue. Commercially, the use of drones in the private sector is becoming even more pervasive. The concern is law enforcement abuse—that the government will collect the video and photographs from drone surveillance for a purportedly legitimate purpose only to use this material for other nefarious or

²⁵⁶ See Amy Gahran, *Fighting Fire with Data, Spacecraft, Drones*, CNN (July 26, 2012, 9:37 AM), <http://www.cnn.com/2012/07/26/tech/innovation/technology-fighting-fire/>.

²⁵⁷ See Bev Ford, Greg B. Smith, & Larry McShane, *Police Narrow in on Two Suspects in Boston Marathon Bombings*, N.Y. DAILY NEWS (Apr. 17, 2013, 10:08 AM), <http://www.nydailynews.com/news/national/injury-toll-rises-marathon-massacre-article-1.1319080>.

²⁵⁸ See, e.g., Allison Linn, *Post 9/11, Surveillance Cameras Everywhere*, NBCNEWS.com, http://www.nbcnews.com/id/44163852/ns/business-us_business/t/post-surveillance-cameras-everywhere/#.U1P5qvldWS0 (last updated Aug. 23, 2011).

illegitimate purposes. As one judge who was critical of the government explained in a false arrest tort case,

In Hamlet's soliloquy, one of the "whips and scorns" which led the great Dane to consider whether death was better than life was "the insolence of office." In those few words, the Bard managed to express the aggravations and futilities pressed on any of us when public officials vent their sour stomachs in performing their duties. The authority to wear a badge or to wield a pen in power over others seems to fuel in us a sense of mastery, and not of service. It is a common failing,²⁵⁹ and all of us public servants succumb to it at some point.

[93] While the judge in this false arrest case may have been referring to either inappropriate behavior by Department of Motor Vehicles (DMV) officials, or possibly the police officers who took their cues from these DMV officials, the message is clear: we must find ways to keep law enforcement officials in check. In this new age of openness and desire for public exposure, privacy rights and levels of intrusiveness are not as important as whether the law enforcement action is reasonable. Drone use is not a trespass and does not violate one's reasonable expectation of privacy. The use of drones by law enforcement must be regulated, but this technique falls outside of Fourth Amendment protections as it does not constitute a "search." Therefore, it would be better for legislators and courts alike to request that law enforcement seek a court order when contemplating the use of drones similar to authorizations needed for a pen register.

[94] If state and federal legislators are successful and remain on a determined course to restrict application of drones, drone use may be severely limited, similar to what took place after the court decision on

²⁵⁹ Wright v. State, 752 P.2d 748, 751 (Mont. 1988) (Sheehy, J., dissenting).

thermal imaging. After the *Kyllo* decision in which the Court held that thermal imaging constituted a search under the Fourth Amendment,²⁶⁰ law enforcement was no longer able to use the technology to assist in building sufficient probable cause for a search warrant. Admittedly, thermal imaging allows law enforcement the ability to collect intelligence within private dwellings, i.e., locations where the owner has a reasonable expectation of privacy. Drone surveillance collects intelligence in public areas where there is no such expectation of privacy. Law enforcement needs a variety of investigatory tools that can be used without a warrant in order to gather enough facts for probable cause to justify search and arrest warrants. If government becomes significantly limited in its ability to collect information in a reasonable and impartial manner, the ability to investigate a complaint and determine if a crime has been committed will be hindered. Drone use is a reasonable, non-intrusive technique and should be one of those investigatory tools available to law enforcement agencies. Public safety requires that law enforcement have the ability to leverage every reasonable investigatory tool at its disposal to uphold the law and bring criminals to justice. Some techniques which are intrusive and infringe on privacy issues need to be closely monitored and regulated.

[95] Public concern is understandable—thousands of drones from both the public and private sector will soon be accumulating a significant amount of information once FAA regulations are put in place by 2015. Drone technology is in its infancy stage. Future drones may be lighter, simpler, with longer flight times and have the ability to act/react to given situations based on software programming without human intervention. Previously, laws were passed to regulate new technology after its effects and impact on society were determined. In the case of drones, state and federal legislatures are attempting to get ahead of the curve and pass laws based on what drones can be expected to do in the future. I think we are getting ahead of ourselves. The drones of today are the same as aircraft and helicopters which are currently used to conduct aerial surveillance.

²⁶⁰ *Kyllo v. United States*, 533 U.S. 27, 34-35 (2001).

There is no need to place greater restrictions on drones than regular aircraft. The unintended victims of such a law would be smaller law enforcement agencies that cannot afford their own aircraft or helicopter. Inexpensive drone technology would allow all law enforcement agencies to operate on a level playing field in the use of aerial surveillance for investigations.

[96] From binoculars, to flashlights, to drones, companies will continue to design enhanced surveillance techniques and their requisite sensory enhancements for both law enforcement and private use. Future court decisions will determine if these new technologies and enhancements fall outside of or are subject to Fourth Amendment protections (e.g., future drones installed with infrared sensors, facial recognition technology, license plate readers, or drones designed with solar power to stay aloft for longer periods of time). These law enforcement technologies will face constant scrutiny for their possible infringement on our expectations of privacy, and will be re-evaluated again and again.

DRONE LEGISLATION BY STATE²⁶¹**TABLE 1: PASSED LEGISLATION**

State	Bill #	Status of Bill	Law Enforcement Restrictions
Florida	F.S.A. § 934.50	Legislation effective as of 01 July 2013	Law Enforcement can only use drones when (1) combating an eminent threat of terrorism; (2) pursuant to a search warrant; (3) preventing imminent death or severe bodily harm.
Idaho	I.C. § 21-213	Legislation effective as of 01 July 2013	Requires warrant, except for emergency response for safety, search and rescue or controlled substance investigations.
Illinois	725 Ill. Comp. Stat. 167/1 et seq.	Legislation effective as of 01 January 2014	Requires warrant except to prevent terrorist attack, pursuant to a warrant, prevent death or severe bodily harm, prevent escape or a suspect, or to protect evidence. Must destroy all information gathered within 30 days unless there is a pending investigation or trial. Must make an annual report on drone usage.
Indiana	HB 1009	Legislation will be effective as of 01 July 2014	Law enforcement must obtain search warrant except in cases of: (1) exigent circumstances; (2) where there is a substantial likelihood of terrorist attack; (3) when conducting search and rescues; (4) where mitigating or responding to natural disasters; or (5) for surveys not used

²⁶¹ Data updated through June 10, 2014. ** denotes FAA test site.

			for criminal justice purposes.
Iowa	HF 2289	Signed by Governor May 23, 2014	Information obtained by use of drone is inadmissible unless secured with use of warrant or otherwise obtained in a manner that is consistent with state and federal law. Drones may not be used for traffic law enforcement.
Montana	Mont. Code Ann. § 46-5- 109	Legislation effective as of 01 October 2013	Requires warrant or any judicially recognized exception. Cannot use information gathered via drone in an application or affidavit for a warrant.
Oregon	Or. Rev. Stat. § 837.300 et seq.	Effective as of June 29, 2013	Requires warrant unless there is a reasonable belief that there is a threat of bodily harm or death and an affidavit is filed within 48 hours, to reconstruct a crime scene, for search and rescue operations, or during a declared state of emergency for public safety purposes only. Drones may not be weaponized.
Tennessee	Tenn. Code Ann. §39-13- 609	Legislation effective as of 01 July 2013; 2014 legislation enacted, goes into effect July 1, 2014	Requires warrant or used to combat terrorist threat, there is reasonable suspicion that there is an imminent threat to life, to prevent escape of suspect, or to search for a missing person. Specifically designates drone use as a search and the search shall comply with the federal and TN Constitutions. However, only exceptions to the warrant requirement listed in this statute apply.

Texas**	Tex. Gov't Code §423 et. Seq.	Legislation effective as of Sept. 1, 2013	Requires warrant or pursuit of a suspect, documentation of a crime scene, when searching for a missing person, in a tactical situation where there is a threat to human life, or where a property owner consents to law enforcement. The Department of Public Safety shall adopt rules and guidelines for use of an unmanned aircraft by a law enforcement authority in this state. Must make a report of drone usage in January of every odd numbered year.
Utah	S.B. 16702	Legislation enacted, goes into effect May 13, 2014.	Requires warrant, judicially recognized exception to warrant requirement, or use by nongovernmental actor acting in good faith and where data pertains to imminent or ongoing emergency involving danger of death or serious bodily harm.
Virginia**	H. 2012	Legislation effective as of July 1, 2013; 2014 bill introduced; legislature adjourned without further action	Prohibits usage of drone prior to July 1, 2013 except for amber alerts, search and rescue, training, and National Guard use.
Wisconsin	S.B. 196	Legislation enacted, went into effect April 9, 2014.	Law Enforcement agents must obtain a warrant in order to use drone except when used to assist search and rescue operations, location of escaped prisoners, or where there is imminent danger to an individual or of destruction of property.

TABLE 2: PENDING LEGISLATION

State	Bill #	Status of Bill	Law Enforcement Restrictions
Alabama	SB317	Passed Senate.	Law Enforcement can only use drones when (1) combating an eminent threat of terrorism; (2) pursuant to a search warrant; (3) preventing imminent death or severe bodily harm.
Alaska**	HCR 6	Legislative Resolution 17 passed; legislature adjourned	Creates a task force to assist the FAA with creating a safe place for the testing of drones and development of adequate safety procedures for future drone use.
	H.B. 209	Referred to Judiciary	Law Enforcement can only use drone if authorized by search warrant, except that peace officers may use drone to assist during an emergency involving imminent danger of death or serious physical injury to a person or property.
Arizona	HB 2269	Referred to Senate Rules Committee	Law Enforcement can only use drones when (1) Combating an eminent threat of terrorism; (2) pursuant to a search warrant; (3) preventing imminent death or severe bodily harm.
	HB 2538	Referred to House Judiciary Committee	Law Enforcement can only use drone if authorized by search warrant.
California	AB 1327	Passed House and passed Senate committee	Requires warrant, or use to prevent imminent severe bodily harm or death, hot pursuit, or first responder situations.

Connecticut	HB 5217	Pending before Joint Judiciary Committee	Law Enforcement can only operate drones for legitimate law enforcement purposes and only pursuant to warrant or emergency circumstances.
Georgia	H.B. 560	In Judiciary Committee	Creates misdemeanor for anyone who knowingly violates or knowingly assists someone in violating statute. Law enforcement must have a warrant, no exceptions.
	S.B. 200	In Judiciary Committee	Allows for exigent circumstances exception. Drones may only be used in investigations of felonies, not misdemeanors.
Hawaii	S.B. 783	Passed Senate; legislature adjourned without further action.	S.B. Must have a warrant unless used to prevent reasonably certain severe bodily harm or death. Supervisor must file with the circuit court a sworn statement describing the emergency.
	H.B 1691	Referred to Transportation Committee	Law enforcement can only use drone: (1) to counter high risk of terrorist attack; (2) pursuant to valid search warrant; (3) in accordance with judicially recognized exception to warrant; (4) where swift action is needed.
Kansas	H.B. 2683	Referred to Committee on Federal and State Affairs	H.B. Requires threat of terrorist activity and warrant.
	S.B. 409	Committee recommended bill be passed	Requires warrant or emergency situation.

Kentucky	H.B. 342	Introduced; legislature adjourned without further action	Requires search warrant, unless no part of any information or evidence is used in any legal proceeding or for any intelligence purposes, or is used by active service members stationed within the Commonwealth.
Louisiana	SB 330	Involuntarily deferred in committee	Contains very few meaningful protections from drone surveillance by law enforcement.
Massachusetts	Bill H. 1357	Introduced	Requires warrant, non-law enforcement use or emergency with sworn statement filed with the court within 48 hours. Restricts use of biometric software to the target. Requires data destruction after 24 hours unless pending investigation or trial. Courts shall report the number of uses of drones annually.
Michigan	H.B. 4455	Introduced	Absolute ban on armed drones. Drone must clearly indicate what agency it belongs to. Requires warrant, imminent threat to life or severe bodily harm, or other emergency. Requires filing of sworn statement within 48 hours if used without warrant. Narrow tailoring of observation and recordings to target. Data is destroyed within 24 hours unless used for investigation. Very detailed reporting to legislature 3 times/ year.

Missouri	H.B. 1204	Placed on informal calendar	Requires warrant, emergency situation, or where used to assess necessity of first responders.
Nevada**	SCR 7	Introduced, but no further action. Next legislative session begins February 2015	Compels state to actively compete for FAA approval to be a drone testing site.
New York**	Bill No. A06370 / A08091/S04537	Introduced	Requires warrant unless there is a reasonable belief that there is an imminent danger to life.
North Carolina	H312	Two-year moratorium enacted (PDF, p. 41) in 2013. Legislature is engaged in an interim study process that will likely produce further legislation.	Must have a warrant unless used to prevent harm to life or property, prevent the escape of a suspect, or prevent imminent destruction of evidence. Supervisor must file with the circuit court a sworn statement describing the emergency within 48 hours. Law enforcement must provide annual report on its drone usage.
Ohio	H.B. 207	Committee Report	Requires warrant, high risk of terrorist attack as determined by U.S. Homeland Security Secretary, or to prevent imminent harm to life or serious damage to property, or to forestall escape of a suspect or destruction of evidence. No drone shall be equipped with any weapon of any kind.

	S.B. 189	Pending before State Government Oversight and Reform Committee	Can use drones in an emergency situation as long as there is documentation of the emergency and a supervisor files a sworn statement with the courts within 48 hours of beginning of the drone's use. There is evidence of a threat to national security or evidence of organized crime and a warrant is applied for and received within 48 hours of the beginning of surveillance. Use of drones must comply with FAA regulations.
Pennsylvania	H.B. 961/2158	Referred to Judiciary Committee	H.B. 961 Requires a court order in the same manner that a wiretap does. Must be used to assist in the apprehension of a suspect who is suspected of a crime which is dangerous to life, limb or property, and subject to imprisonment for more than 1 year.
	H.B. 2158	Referred to Judiciary Committee	Requires either (1) warrant; (2) use in connection with Amber Alert; (3) use in connection with a declared emergency; (4) for the purpose of search or rescue operations; or (5) to alleviate imminent threat of death or grave injury to person.
	S.B. 875	Referred to Senate committee on State Government	Prevents use of drones prior to July 2015 unless used during and amber alert, state of emergency, or search and rescue when necessary to protect life, health, or property. Prohibits weaponizing of drones. Allows for the PA National Guard to use drones for its training.

South Carolina	H3415	In Judiciary Committee	H3415- Requires warrant or belief of a threat of death, bodily harm, escape of a suspect, or destruction of evidence.
Vermont	H.0540 /S. 0169	In Judiciary Committee	Requires warrant or there is a threat of death or serious bodily injury AND a warrant is obtained within 48 hours. Drones may not be armed. Annual reports must be made by the department of safety on drone usage.
West Virginia	H.B. 2732	In House Judiciary committee	No drones may be operated by law enforcement in the state except to combat terrorism and with a warrant. Drones may not carry lethal munitions.

TABLE 3: FURTHER STUDY

State	Bill #	Status of Bill	Law Enforcement Restrictions
New Hampshire	H.B. 1620	Referred to interim study	Requires warrant, prior consent, or reasonable suspicion that swift action is needed to prevent harm to life or serious damage.
Rhode Island	H5780/H7170	House Judiciary Committee recommended bill be held pending further study	Requires public hearing prior to any agency purchasing a drone. Requires court order or when there is a reasonable belief that there is an imminent threat to life or physical safety and an affidavit is submitted to the court within 24 hours describing the emergency.
	S0411/ 2362	Senate Judiciary Committee recommended bill be held pending further study	Requires a warrant. No exceptions.

TABLE 4: LEGISLATION DEAD

State	Bill #	Status of Bill	Law Enforcement Restrictions
Arkansas	HB 1904 / SB 1109	Died in Senate and House, held without action	Required use of warrant, threat to national security, or evidence of organized crime activity. Contained minimalization policies (e.g. facial recognition software cannot be run on non-target footage.). Mandated Law enforcement to report annually on the use of drones.
Maryland	S.B. 926/H.B. 847	Died in committee	Requires consent, warrant, emergency, or grounds on which a warrant can be obtained with due diligence and application is made within 48 hours.
Minnesota	H.F. 1620	Died in committee	H.F. Requires warrant, terrorist threat, imminent danger to persons or property, or prevent escape of suspect. Drones may be used by first responders.
Nebraska	L.B. 412	Indefinitely postponed	Provides that drones may only be used when there is a high probability of a terrorist attack.
New Jersey	A1039	Referred to Homeland Security and State Preparedness Committee	Law enforcement must acquire warrant or consent, or there must be probable cause to believe exigent circumstances exist or when locating missing persons.

Maine	L.D. 236	Passed both chambers; vetoed by Governor; veto sustained	Would have required either a warrant or an emergency situation, with a sworn statement being filed with the court no later than 48 hours afterward explaining emergency. Had information destruction after 48 hours unless pending investigation or trial.
New Mexico	S.B. 556	Dead	Required warrant unless there was a reasonable belief that there was an imminent threat to life.
North Dakota**	H.B. 1373	Failed in Senate	Requires warrant unless used for border patrol and within 25 miles of international border, there is a reasonable belief that there is an imminent risk of death or bodily harm, or in response to a natural disaster. Drones may not be armed.
Washington	H.B. 1771/S.B. 6172	Passed both chambers, VETOED by governor	Requires warrant, warrant expires in 48 hours. Also may use if there is an immediate threat of death or serious bodily harm and a warrant is obtained within 48 hours.
Wyoming	H.B. 0242	Died in committee	Requires warrant or swift action is needed to prevent an imminent danger to life, to counter a high risk of terrorist attack, investigate a felony in progress, to assist in the fresh pursuit of a person believed to have committed a felony.
	H.B. 0105	Not considered by the Committee as a Whole	Same as H.B. 0242.

TABLE 5: NO ACTION

State	Bill #	Status of Bill	Law Enforcement Restrictions
Colorado			
Delaware			
Oklahoma	H.B. 1556	There was a bill introduced in the house, but it failed and the legislature seems to have removed everything except the fact it existed at some point.	
Mississippi			
South Dakota			