



Drones in Domestic Surveillance Operations: Fourth Amendment Implications and Legislative Responses

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Summary

The prospect of drone use inside the United States raises far-reaching issues concerning the extent of government surveillance authority, the value of privacy in the digital age, and the role of Congress in reconciling these issues.

Drones, or unmanned aerial vehicles (UAVs), are aircraft that can fly without an onboard human operator. An unmanned aircraft system (UAS) is the entire system, including the aircraft, digital network, and personnel on the ground. Drones can fly either by remote control or on a predetermined flight path; can be as small as an insect and as large as a traditional jet; can be produced more cheaply than traditional aircraft; and can keep operators out of harm's way. These unmanned aircraft are most commonly known for their operations overseas in tracking down and killing suspected members of Al Qaeda and related organizations. In addition to these missions abroad, drones are being considered for use in domestic surveillance operations to protect the homeland, assist in crime fighting, disaster relief, immigration control, and environmental monitoring.

Although relatively few drones are currently flown over U.S. soil, the Federal Aviation Administration (FAA) predicts that 30,000 drones will fill the nation's skies in less than 20 years. Congress has played a large role in this expansion. In February 2012, Congress enacted the FAA Modernization and Reform Act (P.L. 112-95), which calls for the FAA to accelerate the integration of unmanned aircraft into the national airspace system by 2015. However, some Members of Congress and the public fear there are insufficient safeguards in place to ensure that drones are not used to spy on American citizens and unduly infringe upon their fundamental privacy. These observers caution that the FAA is primarily charged with ensuring air traffic safety, and is not adequately prepared to handle the issues of privacy and civil liberties raised by drone use.

This report assesses the use of drones under the Fourth Amendment right to be free from unreasonable searches and seizures. The touchstone of the Fourth Amendment is reasonableness. A reviewing court's determination of the reasonableness of a drone search would likely be informed by location of the search, the sophistication of the technology used, and society's conception of privacy in an age of rapid technological advancement. While individuals can expect substantial protections against warrantless government intrusions into their homes, the Fourth Amendment offers less robust restrictions upon government surveillance occurring in public places including areas immediately outside the home, such as in driveways or backyards. Concomitantly, as technology advances, the contours of what is reasonable under the Fourth Amendment may adjust as people's expectations of privacy evolve.

In the 113th Congress, several measures have been introduced that would restrict the use of drones at home. Several of the bills would require law enforcement to obtain a warrant before using drones for domestic surveillance, subject to several exceptions. Others would establish a regime under which the drone user must file a data collection statement stating when, where, how the drone will be used and how the user will minimize the collection of information protected by the legislation.

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Introduction

The prospect of drone use in domestic surveillance operations has engendered considerable debate among Americans of various political ideologies.¹ Opponents of drone surveillance have complained that the use of unmanned aircraft on American soil infringes upon fundamental privacy interests and the ability to freely associate with others.² Some are specifically concerned about the possibility of turning military technology inward to surveil American citizens.³ Proponents have responded by emphasizing their potential benefits, which may include protecting public safety, patrolling our nation's borders, and investigating and enforcing environmental and criminal law violations.⁴

The tension between security and privacy interests is not new, but has been heightened by the explosion of surveillance technology in recent decades.

The tension between security and privacy interests is not new, but has been heightened by the explosion of surveillance technology in recent decades. Police officers who were once relegated to naked eye observations may soon have, or in some cases already possess, the capability to see through walls or track an individual's movements from the sky.⁵ One might question, then: What is the proper balance between the necessity of the government to keep people safe and the privacy needs of individuals? As some polls suggest, while the public supports drone usage in certain circumstances, they are less enthusiastic about using them as part of routine law enforcement activity.⁶

¹ The term "domestic drone surveillance" as used in this report is designed to cover a wide range of government uses including, but not limited to, investigating and deterring criminal or regulatory violations; conducting health and safety inspections; performing search and rescue missions; patrolling the national borders; and conducting environmental investigations.

² Letter from Representatives Edward J. Markey and Joe Barton, Co-Chairmen of the Congressional Bi-Partisan Privacy Caucus, to Michael P. Huerta, Acting Administrator of the Federal Aviation Administration (April 19, 2012) ("[I]n addition to benefits, there is also the potential for drone technology to enable invasive and pervasive surveillance without adequate privacy protections."), available at <http://markey.house.gov/sites/markey.house.gov/files/documents/4-19-12.Letter%20FAA%20Drones%20.pdf>; AMERICAN CIVIL LIBERTIES UNION, PROTECTING PRIVACY FROM AERIAL SURVEILLANCE: RECOMMENDATIONS FOR GOVERNMENT USE OF DRONE AIRCRAFT 1 (2011), available at <https://www.aclu.org/files/assets/protectingprivacyfromaerialsurveillance.pdf>.

³ Mark Brunswick, *Spies in the sky signal new age of surveillance*, STARTRIBUNE (July 22, 2012, 6:26 a.m.), available at <http://www.startribune.com/local/163304886.html?refer=y>.

⁴ Some state and local officials have expressed interest in employment of drones for public safety and law enforcement purposes. See, e.g., Brianne Carter, *Gov. Bob McDonnell supports drones policing Virginia*, ABC NEWS (May 30, 2012), available at <http://www.wjla.com/articles/2012/05/gov-bob-mcdonnell-supports-drones-policing-virginia-76464.html>; *Unmanned Aircraft Systems Within the Homeland: Security Game Changer? Hearing Before the Subcomm. on Oversight, Investigations, and Management of the H. Comm. on Homeland Sec.*, 112th Cong. 3 (2012) (statement of William R. McDaniel, Chief Deputy, Montgomery County Sheriff's Office, Conroe, TX) ("UAV systems for public safety agencies are extremely viable, effective, and economical means to enhance the public safety response to critical incidents.").

⁵ The Supreme Court remarked in *Kyllo v. United States*, 533 U.S. 27, 37 (2001):

The ability to 'see' through walls and other opaque barriers is a clear, and scientifically feasible, goal of law enforcement research and development. The National Law Enforcement and Corrections Technology Center, a program within the United States Department of Justice, features on its Internet Website projects that include a 'Radar-Based Through-the-Wall Surveillance System,' 'Handheld Ultrasound Through the Wall Surveillance,' and a 'Radar Flashlight' that 'will enable law officers to detect individuals through interior building walls.'

⁶ *U.S. Supports Some Domestic Drone Use, But Public Registers Concern About Own Privacy* 1, Monmouth University Polling Institute (June 12, 2012), available at <http://www.monmouth.edu>.

The Fourth Amendment to the United States Constitution safeguards Americans' privacy and prevents excessive government intrusion by prohibiting "unreasonable searches and seizures."⁷ Courts have long grappled with how to apply the text of this 18th century provision to 20th century technologies. Although the Supreme Court has the final say in the interpretation of the Fourth Amendment and other constitutional safeguards,⁸ Congress and, in many cases, the President are free to institute more stringent restrictions upon government surveillance operations.⁹

This report first explores the potential uses of drones in the domestic sphere by federal, state, and local governments. It then surveys current Fourth Amendment jurisprudence, including cases surrounding privacy in the home, privacy in public spaces, location tracking, manned aerial surveillance, and those involving the national border. Next, it considers how existing jurisprudence may inform current and proposed drone uses. It then describes the various legislative measures introduced in the 113th Congress to address the legal and policy issues surrounding drones. Finally, it briefly identifies several alternative approaches that may constrain the potential scope of drone surveillance.

Background, Uses, and Drone Technology

Drones, also known as unmanned aerial vehicles (UAVs), are aircraft that do not carry a human operator and are capable of flight under remote control or autonomous programming.¹⁰ An unmanned aircraft system (UAS) is the entire system, including the aircraft, digital network, and personnel on the ground.¹¹ Drones can range from the size of an insect—sometimes called nano drones or micro UAVs—to the size of a traditional jet.¹²

Drones are perhaps most commonly recognized from their missions abroad, including to target and kill suspected members of Al Qaeda and related groups, but they might be used for a variety of other purposes, including for both commercial and law enforcement activities within the United States. In fact, the FAA predicted that 30,000 unmanned aircraft could be flying in U.S. skies in less than 20 years.¹³ One reason for this expansion has been a push by Congress for a

⁷ U.S. CONST. amend IV.

⁸ *Cooper v. Aaron*, 358 U.S. 1, 18 (1958) ("[*Marbury v. Madison*] declared the basic principle that the federal judiciary is supreme in the exposition of the law of the Constitution, and that principle has ever since been respected by this Court and the Country as a permanent and indispensable feature of our constitutional system.").

⁹ In reaction to the Supreme Court's ruling in *United States v. Miller*, 425 U.S. 435 (1976), that the privacy of an individual's bank records were generally not protected by the Fourth Amendment, Congress enacted the Right to Financial Privacy Act, P.L. 95-630, 92 Stat. 3697 (codified at 12 U.S.C. §3401-3422), creating a statutory protection for such records.

¹⁰ DEP'T OF DEFENSE, *DICTIONARY OF MILITARY AND ASSOCIATED TERMS* 331 (2012). Unless expressly mentioned, the terms "unmanned aerial vehicle," "UAV," "unmanned aircraft system," "UAS," and "drone" are used interchangeably in this report.

¹¹ *Id.*

¹² See CRS Report R42136, *U.S. Unmanned Aerial Systems*, by Jeremiah Gertler, for a description of the various types of drones currently operated in the United States.

¹³ FEDERAL AVIATION ADMINISTRATION, *FAA AEROSPACE FORECAST: FISCAL YEARS 2010-2030*, at 48 (2010), available at http://www.faa.gov/data_research/aviation/aerospace_forecasts/2010-2030/media/2010%20Forecast%20Doc.pdf. The FAA has noted that "Federal agencies are planning to increase their use of UAS's. State and local governments envision using UAS's to aid in law enforcement and firefighting. Potential commercial uses are also possible, for example, in real estate photography or pipeline inspection. UAS's could perform some manned aircraft missions with less noise and fewer emissions." *Id.*

faster integration of UAVs into U.S. airspace.¹⁴ Most recently, as part of the FAA Modernization and Reform Act of 2012, Congress mandated that the Federal Aviation Administration (FAA) “develop a comprehensive plan to safely accelerate the integration of civil unmanned aircraft systems into the national airspace system.”¹⁵ This plan shall provide for integration of UAVs by September 2015.

Drones have been employed domestically by federal, state, and local governments in a range of circumstances. The Department of Homeland Security (DHS) uses them to police the nation’s borders to deter unlawful border crossings by unauthorized aliens, criminals, and terrorists, and to detect and interdict the smuggling of weapons, drugs, and other contraband into the country.¹⁶ Within DHS, Customs and Border Protection’s (CBP’s) Office of Air and Marine (OAM) has flown missions to support federal and state agencies such as the Federal Bureau of Investigation (FBI), the Department of Defense (DOD), Immigration and Customs Enforcement (ICE), the U.S. Secret Service, and the Texas Rangers.¹⁷ According to a recent disclosure by the FAA, several local police departments, state and private colleges, and small cities and towns have also received FAA Certificates of Authorization (COAs) to fly unmanned aircraft domestically.¹⁸ Recently, a police force in North Dakota conducted the nation’s first drone-assisted arrest.¹⁹ DHS, in conjunction with local law enforcement agencies, has been testing drone capabilities in a host of other situations including detecting radiation, monitoring a hostage situation, tracking a gun tossed by a fleeing suspect, firefighting, and finding missing persons.²⁰

Currently, drones can be outfitted with high-powered cameras,²¹ thermal imaging devices,²² license plate readers,²³ and laser radar (LADAR).²⁴ In the near future, law enforcement

¹⁴ See, e.g., Intelligence Reform and Terrorism Prevention Act of 2004, P.L. 108-458, §5102, 118 Stat. 3638, 3732 (requesting that DHS test the feasibility of using unmanned aircraft to patrol the northern border of the United States).

¹⁵ FAA Modernization and Reform Act of 2012, P.L. 112-95, §332, 126 Stat. 11, 73.

¹⁶ See CRS Report RS21698, *Homeland Security: Unmanned Aerial Vehicles and Border Surveillance*, by Chad C. Haddad and Jeremiah Gertler.

¹⁷ The OAM mission is to “protect the American people and the Nation’s critical infrastructure through the coordinated use of integrated air and marine forces.” DEP’T OF HOMELAND SECURITY, OFFICE OF INSPECTOR GENERAL, CBP’S USE OF UNMANNED AIRCRAFT SYSTEMS IN THE NATION’S BORDER SECURITY 2 (2012). These forces are used to “detect, interdict, and prevent acts of terrorism and the unlawful movement of people, illegal drugs, and other contraband toward or across U.S. borders.” *Id.*

¹⁸ There are over 300 total, including those issued to the following entities: City of Herrington, KS; Cornell University; Department of Energy Idaho National Laboratory; Eastern Gateway College Community College—Steubenville, OH; Miami-Dade Police Department; Mississippi Department of Marine Resources; North Little Rock Police Department, AR; Ogden Police Department, UT; Ohio University; Seattle Police Department; Texas A&M—Texas Engineering Experiment Station; Texas Department of Public Safety; Texas State University; University of Connecticut; University of Florida; U.S. Department of Agriculture Agricultural Research Service; Utah State University; Virginia Tech. See Unmanned Aircraft Systems, Federal Aviation Administration, <http://www.faa.gov/about/initiatives/uas/>.

¹⁹ *New age of surveillance*, *supra* note 3.

²⁰ Brian Bennett, *Drones Tested as Tools for Police and Firefighters*, LOS ANGELES TIMES (August 5, 2012 5:00 A.M.), <http://www.latimes.com/news/nationworld/nation/la-na-drones-testing-20120805,0,6483617.story>.

²¹ The U.S. Army recently acquired a 1.8 gigapixel camera for use on its drones. This camera offers 900 times the pixels of a 2 megapixel camera found in some cell phones. It can track objects on the ground 65 miles away from an altitude of 20,000 feet. *US Army unveils 1.8 gigapixel camera helicopter drone*, BBC NEWS (December 29, 2011 6:11 p.m.), <http://www.bbc.com/news/technology-16358851>.

²² Infrared cameras, also known as thermal imaging, can see objects through walls based on the relative levels of heat produced by the objects. See Draganflyer X6, Thermal Infrared Camera, <http://www.draganfly.com/uav-helicopter/draganflyer-x6/features/flir-camera.php>.

²³ This sensor can recognize and permit drones to track vehicles based on license plate numbers. Customs and Border (continued...)

organizations might seek to outfit drones with facial recognition or soft biometric recognition, which can recognize and track individuals based on attributes such as height, age, gender, and skin color.²⁵ As explained below, the relative sophistication of drones contrasted with traditional surveillance technology may influence a court's decision whether domestic drone use is lawful under the Fourth Amendment.

Fourth Amendment "Search" Jurisprudence

The Fourth Amendment's story is one of continuity and change. Core values such as privacy and protection from excessive and arbitrary government intrusion are always within its sweep. A continuing question, though, is how the demands of its protection apply to an ever-changing society in which new and pervasive forms of technology are increasingly common. Although there are numerous rules and exceptions throughout the Supreme Court's Fourth Amendment jurisprudence, this section will explore those most pertinent to domestic drone use.

In short, the Fourth Amendment regulates when, where, and how the government may conduct searches and seizures. The Amendment provides, in relevant part: "The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated[.]"²⁶ The Fourth Amendment does not apply to all government acts, but only to those that constitute a search. So when does government monitoring constitute a Fourth Amendment "search" for which a warrant is generally required? Initially, courts' assessment focused on the specific area being investigated. Consider the 1928 case *Olmstead v. United States*.²⁷ There, the Supreme Court held that police wiretaps of the defendant's home telephone did not constitute a Fourth Amendment search because the police did not trespass onto Olmstead's property to intercept his conversation.²⁸ The Court's thinking at the time was that if the person's home, tangible property, or papers were not physically invaded, then no search in the constitutional sense occurred. Almost 40 years later, the Court shifted focus from property to privacy interests.²⁹ In *Katz v. United States*, decided in 1967, the Court held that an FBI agent's use of a bug to listen to the private conversations of Mr. Katz while in a telephone booth violated his Fourth Amendment rights.³⁰ Although he was in a public telephone booth and there was no physical invasion, the Court noted that what a person "seeks to preserve private, even in an area accessible to the public, may be constitutionally protected."³¹ One of the modern Fourth

(...continued)

Protection Today, Unmanned Aerial Vehicles Support Border Security (July 2004), http://www.cbp.gov/xp/CustomsToday/2004/Aug/other/aerial_vehicles.xml.

²⁴ This sensor produces three-dimensional images, and has the capability to see through trees and foliage. U.S. ARMY, UAS CENTER FOR EXCELLENCE, "EYES OF THE ARMY" US ARMY ROADMAP FOR UNMANNED AIRCRAFT SYSTEMS 2010-2035, at 83 (2010).

²⁵ See Clay Dillow, *Army Developing Drones that Can Recognize Your Face from a Distance*, POPSCI (September 28, 2011), 5:01 p.m.), available at <http://www.popsci.com/technology/article/2011-09/army-wants-drones-can-recognize-your-face-and-read-your-mind>.

²⁶ U.S. CONST. amend IV.

²⁷ *Olmstead v. United States*, 277 U.S. 438, 466 (1928).

²⁸ *Id.*

²⁹ *Katz v. United States*, 389 U.S. 347, 351 (1967).

³⁰ *Id.* at 359.

³¹ *Id.* at 351.

Amendment tests relied upon by courts in assessing whether government monitoring constitutes a “search” derives from Justice Harlan’s concurrence in *Katz*. It considers whether the person has a subjective expectation of privacy in the area to be searched and whether society is prepared to deem that expectation reasonable.³²

Although the Court said in *Katz* that the Fourth Amendment “protects people not places,”³³ Justice Harlan noted that determining what “protection it affords people ... requires reference to a ‘place.’”³⁴ And as Justice Scalia observed when writing for a majority of the Court in *United States v. Jones*, a Fourth Amendment search occurs, “at a minimum,” where “the Government obtains information by physically intruding on a constitutionally protected area.”³⁵ The majority in *Jones* indicated that the reasonable expectation of privacy test was never intended to replace the property-based approach used in earlier cases, but merely augment it.³⁶ So where do individuals enjoy the most Fourth Amendment protection? The least? Why does the location dictate the level of protection? And how does technology affect society’s expectation of privacy?

When analyzing domestic drone use under the Fourth Amendment, a reviewing court may be informed by cases surrounding privacy in the home, privacy in public spaces, location tracking, manned aerial surveillance, those involving the national border, and warrantless searches under the special needs doctrine.

³² *Id.* at 361 (Harlan, J., concurring).

³³ *Id.* at 351.

³⁴ *Id.* at 361 (Harlan, J., concurring); *see also* *Oliver v. United States*, 466 U.S. 170 (1984).

We have frequently acknowledged that privacy interests are not coterminous with property rights. E. g., *United States v. Salvucci*, 448 U.S. 83, 91 (1980). However, because “property rights reflect society’s explicit recognition of a person’s authority to act as he wishes in certain areas, [they] should be considered in determining whether an individual’s expectations of privacy are reasonable.” *Rakas v. Illinois*, 439 U.S. 128, 153 (1978) (Powell, J., concurring). Indeed, the Court has suggested that, insofar as “[one] of the main rights attaching to property is the right to exclude others, ... one who owns or lawfully possesses or controls property will in all likelihood have a legitimate expectation of privacy by virtue of this right to exclude.” *Id.*, at 144, n. 12.

Oliver, 466 U.S. at 189-90.

³⁵ *United States v. Jones*, 132 S. Ct. 945, 950 n.3 (2012).

³⁶ *Id.*

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Privacy in the Home

The home has always held a central place in American life, and remains the area accorded the greatest Fourth Amendment protection.³⁷ The Fourth Amendment protects this zone of privacy by ensuring that “the right of the people to be secure in their ... houses ... against unreasonable search and seizure, shall not be violated[.]”³⁸ In most instances, the Supreme Court has rigorously adhered to this safeguard.³⁹ For instance, although police officers may make a warrantless arrest of an individual for a felony offense committed in public,⁴⁰ they may not step inside his home without a warrant, barring any recognized exception.⁴¹

“The right of the people to be secure in their ... houses ... against unreasonable search and seizure, shall not be violated[.]” U.S. CONST. amend IV.

In addition to a physical entry and search of the home, police are likewise prohibited from using certain technology to pierce this zone of privacy. In *Kyllo v. United States*, government agents used a thermal-imaging device to determine heat patterns inside the home of Danny Kyllo.⁴² The Court began with the presumption that a warrantless search of a home is unreasonable.⁴³ Ultimately, the Court protected this “realm of guaranteed privacy” by holding that obtaining information about the inside of a home that could not otherwise be obtained except by entering the home, through the use of technology not in “general public use,” is a “search” covered by the Fourth Amendment.⁴⁴

The home, however, does not provide an absolute shield against government surveillance. As Justice Harlan emphasized in *Katz*, “[A] man’s home is, for most purposes, a place where he expects privacy, but objects, activities, or statements that he exposes to the plain view of outsiders are not ‘protected’ because no intention to keep them to himself has been exhibited.” Indeed, in certain instances, police may use their natural senses to conduct warrantless searches of the inside of a home.⁴⁵ To fall under this exception—known as the “plain view” doctrine—the police must be in a lawful vantage point when they conduct the surveillance, and the incriminating nature of the evidence must be readily apparent.⁴⁶

³⁷ DANIEL SOLOVE, UNDERSTANDING PRIVACY 59 (2008).

³⁸ U.S. CONST. amend IV.

³⁹ *Silverman v. United States*, 365 U.S. 505, 512 (1961) (“At the very core stands the right of a man to retreat into his own home and be free from unreasonable government intrusion.”).

⁴⁰ *United States v. Watson*, 423 U.S. 411 (1976).

⁴¹ *Payton v. New York*, 445 U.S. 573, 603 (1980). This protection not only covers traditional houses, but apartments, *Clinton v. Virginia*, 377 U.S. 158 (1963), and motel rooms, *Stoner v. California*, 376 U.S. 483 (1964).

⁴² *Kyllo v. United States*, 533 U.S. 27, 29-30 (2001).

⁴³ *Id.* at 31.

⁴⁴ *Id.* at 34.

⁴⁵ In one case, police observation of marijuana plants through a crack in the house’s siding did not constitute an unlawful search. *United States v. Hammett*, 236 F.3d 1054, 1061 (9th Cir. 2001). In another, the court held that the police officer’s observation of contraband through the front dining room window was not unlawful. *United States v. Taylor*, 90 F.3d 903, 909 (4th Cir. 1996).

⁴⁶ *Coolidge v. New Hampshire*, 403 U.S. 443, 466 (1971).

Curtilage and Open Fields

Once an individual moves from the confines of the home, he is entitled to different Fourth Amendment considerations. Depending on a host of varying factors, areas outside of the home may be considered “curtilage” or “open fields.”⁴⁷ The curtilage is the area immediately surrounding the home—an area the Court has granted similar protections as the inside of the home.⁴⁸ To determine if an area is curtilage, a court will look at how close the area is to the home; whether the area is within a fence surrounding the home; how the area is used; and whether the area is protected from observation by passersby.⁴⁹ Although an area may be deemed curtilage—as with the home—it is not veiled with unconditional constitutional protection. As the Court noted in one aerial surveillance case:

The Fourth Amendment protection of the home has never been extended to require law enforcement officers to shield their eyes when passing by a home on public thoroughfares. Nor does the mere fact that an individual has taken measures to restrict some views of his activities preclude an officer’s observations from a public vantage point where he has a right to be and which renders the activities clearly visible.⁵⁰

On the other hand, the area outside the curtilage is sometimes considered “open fields,” which “do not provide the setting for those intimate activities that the Amendment is intended to shelter from governmental interference or surveillance,”⁵¹ and thus are not given similar Fourth Amendment protections. Differentiating between the two is no easy task. In one case, for example, the Ninth Circuit Court of Appeals determined that the defendant’s driveway was not curtilage as he had taken no affirmative steps to block it from observation by passers-by.⁵² Furthermore, in the fly-over cases discussed *infra*, the Supreme Court has permitted similar searches in both open fields and the curtilage, to some extent eliminating any constitutional difference between the two.

Manned Aerial Surveillance

In a series of cases that provide the closest analogy to UAVs, the Supreme Court addressed the use of *manned* aircraft to conduct domestic surveillance over residential and industrial areas. In each, the Court held that the fly-over at issue was not a search prohibited by the Fourth Amendment, as the areas surveilled were open to public view.

⁴⁷ *United States v. Hester*, 365 U.S. 57 (1924) (distinguishing between the doctrines of curtilage and open fields).

⁴⁸ The Court has defined curtilage as “the area to which extends the intimate activity associated with the ‘sanctity of a man’s home and the privacies of life.’” *Oliver v. United States*, 466 U.S. 170, 180 (1984) (quoting *Boyd v. United States*, 116 U.S. 616, 630 (1886)).

⁴⁹ *United States v. Dunn*, 480 U.S. 294, 301 (1987).

⁵⁰ *California v. Ciraolo*, 476 U.S. 207, 213 (1986).

⁵¹ *Dow Chemical Co. v. United States*, 476 U.S. 227, 234-35 (1986) (quoting *Oliver*, 466 U.S. at 179).

⁵² *Maisano v. Welcher*, 940 F.2d 499 (9th Cir. 1991).

In *California v. Ciraolo*, police received a tip that an individual was growing marijuana in his backyard next to his suburban home.⁵⁴ Because two fences blocked their view of the yard, officers flew a fixed-wing aircraft at an altitude of 1,000 feet over the property to conduct a visual inspection. From this vantage point, the officers readily identified with the naked eye marijuana plants growing in the defendant's yard. The Court held that the defendant's expectation of privacy in the area immediately surrounding his home was not reasonable, since "what a person knowingly exposes to the public ... is not a subject of Fourth Amendment protection."⁵⁵ "Any member of the public flying in this airspace who glanced down could have seen everything these officers observed," the Court remarked.⁵⁶ Much weight was placed on the fact that the plane was at all times in navigable airspace as defined by federal statute.⁵⁷

"What a person knowingly exposes to the public ... is not a subject of Fourth Amendment protection."⁵³

Similarly, in *Florida v. Riley*, local police received a tip that an individual was growing marijuana in a greenhouse located 10 to 20 feet away from his mobile home.⁵⁸ The officers could not see the contents of the greenhouse from the ground, so they flew a helicopter over the defendant's backyard at an altitude of 400 feet. While overhead, an officer saw marijuana plants through a crack in the greenhouse roof. Because the helicopter, like the plane in *Ciraolo*, was in navigable airspace—where any member of the public could have flown—the Court did not consider this a search for which a warrant was required.⁵⁹

In the final case of the series, *Dow Chemical v. United States*, the Court was asked whether a theory of "industrial curtilage" would prevent a government agency from conducting aerial surveillance over a 2,000-acre commercial plant.⁶⁰ There, after Dow Chemical Co. refused access to the Environmental Protection Agency (EPA), the EPA hired a commercial aerial photographer to take photos of the facility using a precision aerial mapping camera. Having ruled out the argument that the areas surrounding an industrial complex are entitled to the same protection as similar areas surrounding a home, the Court concluded that photographing the plant from navigable airspace was not a search.⁶¹

Government Tracking

Like the aerial surveillance cases, individuals have reduced—and in some contexts no—Fourth Amendment protection from government tracking of their travel in public places. This has permitted the government to conduct warrantless tracking of a vehicle's movements while traveling on public streets. However, once people enter a private residence, the tracking must

⁵³ *Ciraolo*, 476 U.S. at 213.

⁵⁴ *Id.* at 207.

⁵⁵ *Id.* at 213.

⁵⁶ *Id.* at 213-214. It should be noted that although the police did take photographs with a 35-millimeter camera, the warrant relied on naked-eye observations and not the photographs. Thus, the holding was based on the naked-eye observations, unaided by the camera.

⁵⁷ *Id.* at 213 (citing 49 U.S.C. §1304).

⁵⁸ *Florida v. Riley*, 488 U.S. 445, 448 (1989).

⁵⁹ *Id.*

⁶⁰ *Dow Chemical Co.*, 476 U.S. 227.

⁶¹ *Id.* at 239

cease. Also, using technology to perform pervasive tracking might not meet Fourth Amendment muster.

Consider, for example, these two government tracking cases, *United States v. Knotts* and *United States v. Karo*.⁶² In both cases, the government hid a location monitoring device in an item that was then given to the suspects. In *Knotts*, the police tracked the suspect's movements solely while traveling on public roadways.⁶³ The Court held that people have no reasonable expectation of privacy in their movements on public streets. As such, no Fourth Amendment search occurred, thus no warrant was required. By contrast, in *Karo*, the police tracked a beeper device on public streets *and* while the beeper was in a private residence—a “location not open to visual surveillance.”⁶⁴ “Indiscriminate monitoring of property that has been withdrawn from public view,” the Court declared, “would present far too serious a threat to privacy interests in the home to escape entirely some sort of Fourth Amendment oversight.”⁶⁵ The Court held the search unlawful.

Although surveillance in public is generally not considered a search, pervasive tracking may cross the line. Take, for instance, the Supreme Court's recent decision in the GPS tracking case *United States v. Jones*.⁶⁶ In that case, the Court held that the attachment and monthlong tracking of a GPS device on an individual's vehicle constituted a trespass, and hence a Fourth Amendment search.⁶⁷ The Court grounded its decision in the property-based approach to assessing what constitutes a “search” under the Fourth Amendment, which had been more prevalent in the late 19th and early 20th century cases involving relatively unsophisticated technology.

The Court's focus on whether the attachment of a tracking device constitutes a trespass triggering Fourth Amendment protections is not necessarily applicable to drone surveillance. However, in two separate concurring opinions that together made up five members of the Court, an alternative framework was proposed that may have more far-reaching implications for the domestic use of UAVs.

Justice Alito, concurring in the Court's judgment, and joined by Justices Ginsburg, Breyer, and Kagan, would have held that “the use of longer term GPS monitoring in investigations of most offenses impinges on expectations of privacy. For such offenses, society's expectation has been that law enforcement agents and others would not—and indeed, in the main, simply could not—secretly monitor and catalogue every single movement of an individual's car for a very long period.” Justice Sotomayor, joining the controlling opinion in *Jones*, but also concurring separately, noted that although following people for a short period of time conveys little information about them, tracking an

Tracking an individual for an extended period “reflects a wealth of detail about her familial, political, professional, religious, and sexual associations.”⁶⁸

⁶² *United States v. Knotts*, 460 U.S. 276 (1983); *United States v. Karo*, 468 U.S. 705 (1984).

⁶³ *Knotts*, 460 U.S. at 279. The Court reiterated that its analysis was based on the fact that the beeper was tracked within the vicinity of a home, not actually in the home. *Id.*

⁶⁴ *Karo*, 468 U.S. at 714.

⁶⁵ *Id.* at 715.

⁶⁶ *United States v. Jones*, 132 S. Ct. 945 (2012).

⁶⁷ *Id.* at 949. See generally CRS Report R42511, *United States v. Jones: GPS Monitoring, Property, and Privacy*, by Richard M. Thompson II.

⁶⁸ *Jones*, 132 S. Ct. at 955 (Sotomayor, J., concurring).

individual for an extended period “reflects a wealth of detail about her familial, political, professional, religious, and sexual associations.”⁶⁹ Thus, the length of time an individual is kept under surveillance and the breadth of data collected through such surveillance may inform a reviewing court whether a particular surveillance practice constitutes a Fourth Amendment search.⁷⁰

Border Searches

Even more so than surveillance of public places generally, law enforcement agencies are granted significant deference to conduct surveillance at or near American borders. The federal government has a significant interest in protecting American borders from crossings by persons attempting to enter unlawfully, drug trafficking, and, perhaps most importantly, the transit of weapons and persons seeking to do harm to American people and infrastructure.

Congress has granted federal law enforcement agencies significant search powers at the border. Section 287 of the Immigration and Nationality Act (INA), codified at 8 U.S.C. Section 1357, authorizes immigration officers to conduct warrantless searches of any vessel within a reasonable distance from the United States border and any vehicle within 25 miles from a border for the “purpose of patrolling the border to prevent the illegal entry of aliens into the United States.”⁷¹ Similarly, 19 U.S.C. Section 482 authorizes customs officers to search vehicles and persons on which or whom they have reasonable cause to believe are carrying goods unlawfully into the United States.⁷²

The Supreme Court has likewise acknowledged this federal interest in the borders, observing that “[t]he Government’s interest in preventing the entry of unwanted persons and effects is at its zenith at the international border.”⁷³ Again, the touchstone in every Fourth Amendment case is whether the search is *reasonable*.⁷⁴ The Court observed in *United States v. Montoya De Hernandez* that “the Fourth Amendment balance of reasonableness is qualitatively different at the international border.”⁷⁵ “Routine searches,” the Court continued, “are not subject to any requirement of reasonable suspicion, probable cause, or warrant.”⁷⁶ “Routine” searches have included pat downs for weapons or contraband,⁷⁷ the use of drug sniffing dogs,⁷⁸ and the

⁶⁹ *Id.*

⁷⁰ Although the two concurring opinions in *Jones* arguably do not constitute binding precedent, lower courts have combined them as a possible alternative holding. See *United States v. Hanna*, No. 11-20678-CR, 2012 WL 279435, at *3 (S.D. Fla. Jan. 3, 2012) (analyzing the issue of Fourth Amendment standing to contest GPS surveillance under both the trespass theory and *Katz*’s privacy test); *State v. Zahn*, No. 25584, 2012 WL 862707 (S.D. Mar. 14, 2012) (holding that both the trespass approach and the mosaic theory can apply to GPS tracking); but see *United States v. Bradshaw*, No. 1:11-CR-257, 2012 WL 774964 (N.D. Ohio Mar. 8, 2012) (noting that the *Jones* majority did not adopt the mosaic theory).

⁷¹ 8 U.S.C. 1357.

⁷² 19 U.S.C. §482. In the 112th Congress, the House of Representatives introduced H.R. 1505, which would enlarge CBP’s authority to secure U.S. borders on federal land. H.R. 1505; see also John S. Adams, *Border bill would expand Homeland Security powers*, USA TODAY (September 26, 2011).

⁷³ *United States v. Flores-Montano*, 541 U.S. 149, 152 (2004).

⁷⁴ *Cady v. Dombrowski*, 413 U.S. 433, 439 (1973).

⁷⁵ *United States v. Montoya De Hernandez*, 473 U.S. 531, 538 (1985).

⁷⁶ *Id.*

⁷⁷ *United States v. Beras*, 183 F.3d 22, 24 (1st Cir. 1999) (ruling that pat down of defendant’s legs was routine search).

⁷⁸ *United States v. Kelly*, 302 F.3d 291, 294-95 (5th Cir. 2002).

inspection of luggage.⁷⁹ By contrast, “non-routine” searches are those that go beyond a limited intrusion, and require the government official to have (at a minimum) “reasonable suspicion” of wrongdoing.⁸⁰ Prolonged detentions,⁸¹ strip searches,⁸² and body cavity searches⁸³ have all been considered non-routine searches.

Unlike searches directly at the border, the Court has shown more reticence in granting law enforcement unfettered discretion to conduct searches near, but not directly at, the border. In *Almeida-Sanchez v. United States*, the defendant’s vehicle was stopped and searched by U.S. Border Patrol agents 25 miles north of the U.S.-Mexico border.⁸⁴ The agents had neither a warrant nor probable cause, nor even reasonable suspicion, to conduct the search. The government argued that the search was permissible under Section 287 of the Immigration and Nationality Act. A federal statute, the Court noted, cannot trump the Constitution. The Court refused to permit this suspicionless search, as it was conducted neither at the border nor at its “functional equivalent.”⁸⁵

Warrants, Suspicionless Searches, and Special Needs

The baseline rule in Fourth Amendment cases is that police must obtain a warrant to search an individual or their property in all but a few limited instances.⁸⁶ This rule ensures that an independent judicial officer, rather than a police officer in the field, is determining whether there is probable cause to conduct a search or seizure.⁸⁷ Over time, however, the Court has loosened this warrant requirement in instances where a strict showing of individualized suspicion of probable cause would hinder the government from addressing health and safety concerns.⁸⁸ In two lines of overlapping cases—administrative searches and “special needs” cases—the Court has balanced the individual’s privacy interest against the government’s interest to determine if a

⁷⁹ *United States v. Okafor*, 285 F.3d 842 (9th Cir. 2002).

⁸⁰ *Montoya De Hernandez*, 473 U.S. at 541.

⁸¹ *Id.*

⁸² *United States v. Asbury*, 586 F.2d 973, 975 (1978).

⁸³ *United States v. Ogberaha*, 771 F.2d 655, 657 (2d Cir. 1985).

⁸⁴ *Almeida-Sanchez v. United States*, 413 U.S. 266, 267-68 (1973).

⁸⁵ *Id.* at 272-73 (“For example, searches at an established station near the border, at a point marking the confluence of two or more roads that extend from the border, might be functional equivalents from border searches. For another example, a search of the passengers and cargo of an airplane arriving at a St. Louis airport after a nonstop flight from Mexico would clearly be the functional equivalent of a border search.”). Like *Almeida-Sanchez*, Border Patrol agents in *United States v. Brignoni-Ponce* stopped an individual’s vehicle as part of a roving patrol solely because the occupants appeared to be of Mexican descent, with no proof of illegal activity. *United States v. Brignoni-Ponce*, 422 U.S. 873, 874-75 (1975). Again, the Court struck down this practice of suspicionless stops, remarking that “[i]n the context of border area stops, the reasonableness requirement of the Fourth Amendment demands something more than the broad and unlimited discretion sought by the Government. Roads near the border carry not only aliens seeking to enter the country illegally, but a large volume of legitimate traffic as well.” *Id.* at 882.

⁸⁶ *Mincey v. Arizona*, 437 U.S. 385, 390 (1978) (citation omitted).

⁸⁷ *Johnson v. United States*, 333 U.S. 10, 14 (1948) (“The right of officers to thrust themselves into a home is also a grave concern, not only to the individual but to a society which chooses to dwell in reasonable security and freedom from surveillance. When the right of privacy must reasonably yield to the right of search is, as a rule, to be decided by a judicial officer, not by a policeman or government enforcement agent.”). Probable cause is found when, looking at the “totality-of-the-circumstances” there “is a fair probability that contraband or evidence of a crime will be found in a particular place.” *Illinois v. Gates*, 462 U.S. 213, 238 (1983).

⁸⁸ Eve Brensike Primus, *Disentangling Administrative Searches*, 111 COLUM. L. REV. 254, 256 (2011).

warrant or any individualized suspicion is required.⁸⁹ These two theories permit law enforcement to conduct dragnet searches in certain instances.

Suspicionless general searches are ones “in which the government searches or seizes every person, place, or thing in a specific location or involved in a specific activity based only on a showing of a generalized government interest.”⁹⁰ Suspicionless searches have been conducted at the national border,⁹¹ private businesses,⁹² and police roadblocks.⁹³ In the roadblock cases, the Court has balanced the government’s interest against the individual’s privacy interest to determine whether police may stop and question drivers without a warrant or any suspicion of criminal wrongdoing. In *Michigan Dep’t of State Police v. Sitz*, the Court upheld the suspicionless stopping and examination of drivers for intoxication at sobriety checkpoints.⁹⁴ The Court reasoned that the high incidence of drunk driving balanced against the minimal intrusion on drivers permitted suspicionless checkpoints. In *City of Indianapolis v. Edmund*, however, law enforcement was not permitted to set up a drug interdiction checkpoint.⁹⁵ The Court held that searches such as this violated the Fourth Amendment when their “primary purpose” is “to uncover evidence of ordinary criminal wrongdoing.”⁹⁶ Justice O’Connor observed that if this type of roadblock were allowed “the Fourth Amendment would do little to prevent such intrusions from becoming a routine part of American life.”⁹⁷

Application of Fourth Amendment to Drone Surveillance

As evidenced by the foregoing, the constitutionality of domestic drone surveillance may depend upon the context in which such surveillance takes place. Whether a targeted individual is at home, in his backyard, in the public square, or near a national border will play a large role in determining whether he is entitled to privacy. Equally important is the sophistication of the technology used by law enforcement and the duration of the surveillance. Both of these factors will likely inform a reviewing court’s reasoning as to whether the government’s surveillance constitutes an unreasonable search in violation of the Fourth Amendment.

⁸⁹ *Nat’l Treasury Employees Union v. Von Raab*, 489 U.S. 656, 665-66 (1989).

⁹⁰ *Primus*, *supra* note 88, at 263.

⁹¹ *United States v. Martinez-Fuerte*, 428 U.S. 543, 566 (1976).

⁹² *United States v. Biswell*, 406 U.S. 311, 317 (inspection of gun dealer’s storeroom) (“We have little difficulty in concluding that where, as here, regulatory inspections further urgent federal interest, and the possibilities of abuse and the threat to privacy are not of impressive dimensions, the inspection may proceed without a warrant where specifically authorized by statute.”).

⁹³ *Mich. Dep’t of State Police v. Sitz*, 496 U.S. 444, 455 (1990).

⁹⁴ *Id.* at 455.

⁹⁵ *City of Indianapolis v. Edmund*, 531 U.S. 32 (2000).

⁹⁶ *Id.* at 42.

⁹⁷ *Id.*

Location of Search

Based on existing case law, it is reasonable to assume that surveillance of an individual while in his home—an area accorded the greatest Fourth Amendment protection—using technology not in general public use would be an unlawful search absent a search warrant. The Supreme Court in *Kyllo* was particularly concerned about law enforcement’s use of powerful equipment to peer inside an individual’s home. Currently, UAVs carry high-megapixel cameras and thermal imaging, and will soon have the capacity to see through walls and ceilings.⁹⁸ These technologies are not generally available to the public, and under current jurisprudence, their use by law enforcement would probably constitute a search covered by the Fourth Amendment. However, the use of low-powered cameras or other unsophisticated technology to view people and objects in plain view while in their home might not trigger Fourth Amendment protections. The rationale for this notion is that officers are not required to avert their eyes when they see illegal activity in plain view, especially when the subject of the search has taken no affirmative efforts to hide their activity from public view.

Moving beyond the home, it is unclear whether circumstances exist in which the area immediately surrounding the home—for instance, a backyard, a swimming pool, a deck, or a porch—would receive similar protections as the interior of the home if surveilled by drones or other aerial vehicles.⁹⁹ Although the Supreme Court has recited on many occasions that a person located in a home’s curtilage is accorded similar privacy protections as when inside the home, the aerial surveillance cases arguably constitute an exception to this general principle. In the two aerial cases, *Riley* and *Ciraolo*, the area surveilled was within close proximity of the home, yet the police surveillance at altitudes of 400 and 1,000 feet were not considered a search.

Based on the aerial surveillance cases, it may be reasonable to presume a warrant would *not* be required (nor, perhaps, any suspicion, for that matter) to conduct drone surveillance of most public places for a relatively short period of time. The Supreme Court remarked in *Ciraolo* that the “Fourth Amendment simply does not require the police traveling in the public airways at [1,000 feet] to obtain a warrant to observe what is visible to the naked eye.”¹⁰⁰ However, the rarity of drone flights may distinguish their use from surveillance by the piloted aircraft used in the three aerial cases decided by the Court. All three of these cases were premised on the fact that each aircraft was flying in navigable airspace, and that these flights were not “sufficiently rare” to provide a reasonable expectation of privacy in the area to be searched. To this point, Justice White remarked in *Riley* that “there is nothing in the record or before us to suggest that helicopters flying at 400 feet are sufficiently rare in this country to lend substance to respondent’s claim that he reasonably anticipated that his greenhouse would not be subject to observation from that altitude.”¹⁰¹ Presently, use of UAVs in U.S. airspace is considerably less common. The FAA has issued only approximately 300 licenses for drone use in U.S. airspace.¹⁰² The general public

⁹⁸ EYES OF THE ARMY, *supra* note 24.

⁹⁹ See generally, Paul McBride, *Beyond Orwell: The Application of Unmanned Aircraft Systems in Domestic Surveillance Operations*, 74 J. Air. L. & Com. 627, 655-56 (“This implies that although the curtilage does not benefit from the absolute protection afforded to the interior of the home, there is a close relationship between the two, and that technology directed at the home and its curtilage will be subjected to a more skeptical analysis than would be applied in a case involving open fields or industrial areas.”).

¹⁰⁰ *California v. Ciraolo*, 476 U.S. 207, 215 (1986).

¹⁰¹ *Florida v. Riley*, 488 U.S. 445, 451-52 (1989).

¹⁰² Federal Aviation Administration, *supra* note 18.

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would likely find it exceedingly unusual for a drone to fly over their homes taking surveillance photographs. This rarity might factor into a reviewing court's determination of whether individuals have a legitimate expectation of privacy from various forms of drone surveillance while in a public place.¹⁰³

The federal government's authority to use unmanned aircraft is undoubtedly at its maximum near U.S. borders. One of the federal government's only affirmative duties is to protect citizens from external harm.¹⁰⁴ This includes securing the borders. The Court has hesitated from interfering with the performance of this duty, and it would in all likelihood demonstrate the same deference when it comes to the use of UAVs. Moreover, the Supreme Court's rulings in border cases have all involved active searches—either a physical search of a vehicle or stopping and questioning a vehicle's passenger. Surveillance by UAVs, on the other hand, may be considered more passive and therefore may be even less likely to run afoul of Fourth Amendment requirements. Drone surveillance does not require any physical manipulation of a person or his things. UAVs also do not require the seizure of a person for any period of time (though drone surveillance may lead to law enforcement physically apprehending a person who is seen engaging in suspected illegal activity). However, the Court has shown some reticence about giving law enforcement carte blanche search power at the border. Roving vehicle patrols and indiscriminate searches in *Almeida-Sanchez v. United States* and *United States v. Brignoni-Ponce* were deemed unconstitutional.¹⁰⁵ It is unclear whether this reticence would extend to drone surveillance along the border if it were to become significantly widespread.

Technology Used

Like location, the technology used by UAVs may be a decisive factor considered by courts in determining whether individuals have a legitimate expectation of privacy in the object or area of the challenged drone search. Technological developments make it increasingly easy to share and acquire personal information about others, oftentimes without their direct knowledge or consent. As surveillance technology advances and becomes ever-present in Americans' lives, people's conception of privacy may tend to oscillate. Justice Scalia, writing for the majority in *Kyllo v. United States*, remarked on this trend:

It would be foolish to contend that the degree of privacy secured to citizens by the Fourth Amendment has been entirely unaffected by the advance of technology. For example, ... the technology enabling human flight has exposed to public view (and hence, we have said, to official observation) uncovered portions of the house and its curtilage that once were private. The question we confront today is what limits there are upon this power of technology to shrink the realm of guaranteed privacy.¹⁰⁶

Justice Alito, joined by three other Justices in his *United States v. Jones* concurrence, likewise observed:

¹⁰³ *Ciraolo*, 476 U.S. at 212. However, in determining society's privacy expectations, a reviewing court might also take into consideration the proliferation of aerial mapping such as Google Maps and Google Earth conducted by private actors. See generally Google Maps, Street View, <http://www.google.com/streetview>.

¹⁰⁴ U.S. CONST. art. IV, §4 ("The United States shall guarantee to every State in this Union a Republican Form of Government, and shall protect each of them against Invasion[.]").

¹⁰⁵ *Almeida-Sanchez v. United States*, 413 U.S. 266 (1973); *United States v. Brignoni-Ponce*, 422 U.S. 873 (1975).

¹⁰⁶ *Kyllo v. United States*, 533 U.S. 27, 33-34 (2001).

The *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 may 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.¹⁰⁷

The crucial question, then, is whether drones have the potential to be significantly more invasive than traditional surveillance technologies such as manned aircraft or low-powered cameras—technologies that have been upheld in previous cases. In this vein, some have asked whether using sophisticated digital platforms on a drone is any different from attaching the same instrument to a lamppost or traditional aircraft.¹⁰⁸ Take, for example, the tracking of license plates. Currently, many states and municipalities employ automatic license plate readers (ALPRs), which are usually mounted on police vehicles or stationary objects along the streets, to take a snapshot of a license plate as a car drives by, and store this information in a large database for possible later use by law enforcement.¹⁰⁹ It is alleged that these devices can be used to track a person's movements when police aggregate the data from a multitude of ALPR stations.¹¹⁰ A majority of the reviewing federal circuit courts have held that a person has no reasonable expectation of privacy in his license plate number.¹¹¹

However, it appears that no federal court has addressed the constitutionality of the use of ALPRs (whether attached to a drone, manned vehicle, or a stationary device), as opposed to plate numbers collected by a human observer. Nonetheless, the question remains whether attaching an ALPR—or any similar sophisticated technology—to a drone would alter the constitutionality of its use by law enforcement. Some say yes, arguing that the sophistication of drone technology in and of itself “present[s] a unique threat to privacy.”¹¹² Drones are smaller, can fly longer, and can be built more cheaply than traditional aircraft. For instance, defense firm Lockheed Martin's Stalker—a small, electrically powered drone—can be recharged from the ground using a laser.¹¹³ It now has a flight time of more than 48 hours. As this technology advances, it is reported that

¹⁰⁷ *United States v. Jones*, 132 S. Ct. 945, 962 (2012) (Alito, J., concurring).

¹⁰⁸ Stanford Law Review Symposium, *Drones—Privacy Paradox: Privacy and its Conflicting Values* (February 2, 2012), <http://cyberlaw.stanford.edu/multimedia/drones-privacy-paradox-privacy-and-its-conflicting-values-video>.

¹⁰⁹ *ACLU Seeks Details on Automatic License Plate Readers in Massive Nationwide Request*, AMERICAN CIVIL LIBERTIES UNION (July 31, 2012), <http://www.aclu.org/technology-and-liberty/aclu-seeks-details-automatic-license-plate-readers-massive-nationwide-reque-4>.

¹¹⁰ *Id.*

¹¹¹ *See, e.g., Olabisiomotosho v. City of Houston*, 185 F.3d 521, 529 (5th Cir. 1999) (“A motorist has no privacy interest in her license plate number. Like the area outside the cartilage [sic] of a dwelling, a car’s license plate number is constantly open to the plain view of passersby.”) (internal citation and quotation marks omitted); *United States v. Ellison*, 462 F.3d 557, 562 (6th Cir. 2006) (“No argument can be made that a motorist seeks to keep the information on his license plate private. The very purpose of a license plate number, like that of a Vehicle Identification Number, is to provide identifying information to law enforcement officials and others.”); *United States v. Castaneda*, 494 F.3d 1146, 1151 (9th Cir. 2007); *United States v. Walraven*, 892 F.2d 972, 974 (10th Cir. 1989).

¹¹² *Using Unmanned Aircraft Systems Within the Homeland: Security Game Changer? Hearing Before the Subcomm. on Oversight, Investigations, and Management of the H. Comm. on Homeland Sec.*, 112th Cong. 3 (2012) (statement of Amie Stepanovich, Counsel, Electronic Privacy Information Center).

¹¹³ Mark Brown, *Lockheed uses ground-based laser to recharge drone mid-flight*, WIRED (July 12, 2012), available at <http://www.wired.co.uk/news/archive/2012-07/12/lockheed-lasers>.

some drones could theoretically “stay in the air forever.”¹¹⁴ Unlike a stationary license plate tracker or video camera, drones can lock on a target’s every move for days, and possibly weeks and months. This ability to closely monitor an individual’s movements with pinpoint accuracy may raise more significant constitutional concerns than some other types of surveillance technology.

Furthermore, the technology and sophistication of drones may mark a considerable departure from the traditional technologies used in the three manned aerial surveillance cases decided by the Supreme Court. First, all three holdings in *Ciraolo*, *Riley*, and *Dow Chemical* were premised on naked-eye searches. Chief Justice Burger remarked in *Dow Chemical*: “It may well be, as the government concedes, that surveillance of private property using highly sophisticated surveillance equipment not generally available to the public, such as satellite technology, might be constitutionally proscribed absent a warrant.”¹¹⁵ As noted above, the sophistication of surveillance technology available to drones, such as facial recognition or laser radar which can “see” through walls, may lead some to question the relevance of prior Fourth Amendment jurisprudence concerning more rudimentary forms of surveillance technology.

The sophistication of drones also has the ability to break down any practical privacy safeguard. In the pre-computer age, the greatest privacy protections were neither constitutional nor statutory, but practical. Putting officers everywhere in the community cost too much for local police departments. This acted as a natural barrier to excessive police presence. Drones are not hindered by similar limitations. This is similar to the expansion of GPS technology observed by the five concurring Justices in *United States v. Jones*. There, Justice Sotomayor, writing for herself, noted that because GPS technology was cheaper and performed in a surreptitious manner, it “evades the ordinary checks that constrain abusive law enforcement practices: limited police resources and community hostility.”¹¹⁶ Justice Alito sounded a similar note in *Jones*: “Traditional surveillance for any extended period of time was difficult and costly and therefore rarely undertaken. [GPS devices] make long-term monitoring relatively easy and cheap.”¹¹⁷ Instead of putting more officers in the field, a police force could put drones in the sky for potentially less expense. Already, drones with video capabilities can be purchased from private vendors for a few hundred dollars.¹¹⁸ This access to inexpensive technology may significantly reduce budgetary concerns that once checked the government from widespread surveillance.

This access to inexpensive technology may significantly reduce budgetary concerns that once checked the government from widespread surveillance.

The duration and pervasiveness of drone surveillance—two factors closely associated with the technology employed by law enforcement—may also influence a court’s Fourth Amendment analysis. Consider the Fifth Circuit Court of Appeals’ ruling in *United States v. Cuevas-Sanchez*.¹¹⁹ In that case, federal law enforcement agents suspected the defendant was using his home as a drop house for drug traffickers. After obtaining a court order, the agents installed a

¹¹⁴ *Id.* Lockheed has reportedly been working on extending flight times from days to months. *Id.*

¹¹⁵ *Dow Chemical*, 476 U.S. at 238.

¹¹⁶ *United States v. Jones*, 132 S. Ct. 945, 956 (Sotomayor, J., concurring) (internal quotation marks omitted).

¹¹⁷ *Id.*

¹¹⁸ See, e.g., Apple Store, Parrot AR.Drone 2.0, <http://store.apple.com/us/product/H8859ZM/A/parrot-ar-drone-2-0>. This aircraft, is remote-controlled by an iPhone or iPad, and has a high-definition camera that can take both pictures and videos. *Id.*

¹¹⁹ *United States v. Cuevas-Sanchez*, 821 F.2d 248 (5th Cir. 1987).

video camera on a utility pole overlooking the defendant's 10-foot high fence surrounding his back yard. The officers observed the removal of drugs from the gas tanks of several cars parked in the defendant's yard. Based on these observations, the defendant was arrested whereupon the police seized a large amount of marijuana. At trial, the defendant moved to suppress the evidence on the basis that the warrant was defective. However, the court first addressed whether the video surveillance was a search under the Fourth Amendment. In determining that the video surveillance was a search, the panel noted that this "was not a one-time overhead flight or a glance over the fence by a passer-by.... It does not follow that *Ciraolo* authorizes any type of surveillance whatever just because one type of minimally-intrusive aerial observation is possible."¹²⁰ Drones have the capability to stay in the air for long periods of time and can hover in one location. Similar to the mounted camera in *Cuevas-Sanchez*, this permits law enforcement to employ drones in prolonged surveillance operations. This capability may sway a court's determination of whether certain types of warrantless drone surveillance are compatible with the Fourth Amendment.

Warrant Requirement and Suspicionless Drone Searches

Applying the Fourth Amendment to drones requires application of the threshold question: was there a search? Again, this will depend on all the factors discussed above—the area of the search, the technology used, and whether society would respect the target's expectation of privacy in the place searched. If a reviewing court concludes that the drone surveillance was not a search, neither a warrant nor any degree of individualized suspicion would be required. If, however, the court concluded there was a search, then a court would ask whether a warrant is required, if one of the exceptions apply, and what level of suspicion, if any, is necessary to uphold the search.

Unless a meaningful distinction can be made between drone surveillance and more traditional forms of government tracking, existing jurisprudence suggests that a reviewing court would likely uphold drone surveillance conducted with no individualized suspicion when conducted for purposes other than strict law enforcement. The Supreme Court has hesitated from interfering in what they see as the executive's function in protecting the health and safety of the American population. As Chief Justice Rehnquist noted in the *Sitz*, the Court does not want

to transfer from politically accountable officials to the courts the decision as to which among reasonable alternative law enforcement techniques should be employed to deal with serious public danger.... [F]or purposes of Fourth Amendment analysis, the choice among such reasonable alternatives remains with the governmental officials who have a unique understanding of, and a responsibility for, limited public resources, including a finite number of police officers.¹²¹

The Court may defer to law enforcement officials in the drone context also. There are countless instances where the government may seek to utilize drones for health and safety purposes that go beyond mere law enforcement. These may include firefighting, search and rescue missions, traffic safety enforcement, or environmental protection. If, on other hand, surveillance is conducted primarily to enforce the law, a warrant may be required, unless one of the exceptions to the warrant requirement applies.

¹²⁰ *Id.* at 251.

¹²¹ *Mich. Dep't of State Police v. Sitz*, 496 U.S. 444, 453-54 (1990).

Legislative Proposals in the 113th Congress to Constrain Domestic Use of Drones

Although the Supreme Court is the final arbiter of the Constitution, Congress and the President can provide for greater regulation of drones than the Fourth Amendment requires. Congress has taken such steps over the years to address government surveillance of communications in transit (commonly known as wiretapping),¹²² communications in storage such as e-mails,¹²³ bank records,¹²⁴ and health records,¹²⁵ among a host of other private information. Several measures have been introduced in the 113th Congress that would restrict the domestic use of drones, and establish arguably greater constraints on their usage than the Fourth Amendment requires. Several bills were prompted by a general concern for potential privacy intrusions by federal and state law enforcement and executive agencies.¹²⁶

Preserving Freedom from Unwarranted Surveillance Act of 2013 (H.R. 972)

In the 113th Congress, Representative Austin Scott has introduced the Preserving Freedom from Unwarranted Surveillance Act of 2013 (H.R. 972).¹²⁷ This bill would require any entity acting under the authority of the federal government to obtain a warrant based upon probable cause before conducting drone surveillance to investigate violations of criminal law or regulations. There are, however, several exceptions to this warrant requirement: (1) to prevent or deter illegal entry of any persons or illegal substances into the United States; (2) when a law enforcement officer possesses reasonable suspicion that under particular circumstances “swift action to prevent imminent danger to life or serious damage to property, or to forestall the imminent escape of a suspect, or destruction of evidence” is necessary; or (3) when the Secretary of Homeland Security determines credible intelligence indicates a high risk of a terrorist attack by a specific individual or organization. H.R. 972 would create a right to sue for any violation of its prohibitions.

Preserving American Privacy Act of 2013 (H.R. 637)

Representative Ted Poe introduced the Preserving American Privacy Act of 2013 (H.R. 637), which would restrict the domestic use of drones.¹²⁸ To begin, the bill regulates surveillance of “covered information,” which means “information that is reasonably likely to enable

¹²² Omnibus Crime Control and Safe Streets Act of 1968, P.L. 90-351, 87 Stat. 197, 211 (codified at 18 U.S.C. §2510-2522).

¹²³ Electronic Communications Privacy Act of 1986, P.L. 99-508, 100 Stat. 1848 (codified at 18 U.S.C. §2701-2712).

¹²⁴ Right to Financial Privacy Act, P.L. 95-630, 92 Stat. 3697 (codified at 12 U.S.C. §3401-3422).

¹²⁵ Health Insurance Portability and Accountability Act of 1996, P.L. 104-191, 110 Stat. 1936.

¹²⁶ Several bills introduced in the 113th Congress aim to restrict the government’s use of drones to lethally target U.S. citizens on U.S. soil. See, e.g., No Armed Drones Act of 2013, H.R. 1083, 113th Cong (1st Sess. 2013); S. 505, 113th Cong. (1st Sess. 2013). These bills, however, are beyond the scope of this report.

¹²⁷ H.R. 972, 113th Cong. (1st Sess. 2013). Senator Rand Paul filed similar legislation in the 112th Congress, but has not re-introduced it in the 113th Congress. See S. 3287, 112th Cong. (2d Sess. 2012). Unlike H.R. 972, S. 3287 included an express exclusionary rule for evidence obtained in violation of the act.

¹²⁸ H.R. 637, 113th Cong. (1st Sess. 2013).

identification of an individual” or “information about an individual’s property that is not in plain view.” H.R. 637 would create a general prohibition on the use of drones to collect covered information or disclose covered information so collected. It does, however, provide the following exceptions:

- *Warrant*. Law enforcement obtains a court-issued warrant and serves a copy of the warrant on the target of the search within 10 days of the surveillance. However, notice need not be provided if it would jeopardize an ongoing criminal or national security investigation.
- *General Order*. Law enforcement obtains a court-issued order based upon “specific and articulable facts showing a reasonable suspicion of criminal activity and a reasonable probability” that the operation “will provide evidence of such criminal activity.” The order may authorize surveillance in a stipulated public area for no more than 48 hours which may be renewed for a total of 30 days. Notice of the operation must be provided to the target no later than 10 days after the operation. Alternatively, notice may be provided not less than 48 hours before the operation in a major publication, on a government website, or with signs posted in the area of the operation.
- *Border searches*. Operation is within 25 miles of national border.
- *Consent*. The targeted individual has provided prior written consent.
- *Emergencies*. Emergency situation involves danger of death or serious physical injury, conspiratorial activities threatening the national security interest, or conspiratorial activities characteristic of organized crime, where a warrant cannot be obtained with due diligence. Law enforcement must then obtain a warrant within 48 hours of such operation.

Any evidence obtained in violation of this act is not admissible in any trial or adjudicative proceeding. Additionally, H.R. 637 requires any governmental entity applying for a certificate or license to operate a UAS to also file a data collection statement with the Attorney General. The statement must include the following:

- Purpose for which the UAS will be used
- Whether the UAS is capable of collecting covered information
- The length of time the information will be retained
- A point of contact for citizen feedback
- The particular unit of governmental entity responsible for safe and appropriate operation of the UAS
- The rank and title of the individual who may authorize the operation of the UAS
- The applicable data minimization policies barring the collection of covered information unrelated to the investigation of crime and requiring the destruction of covered information that is no longer relevant to the investigation of a crime
- Applicable audit and oversight procedures.

Under H.R. 637, the Attorney General may request that the Secretary of Transportation revoke the license or certificate of any entity that fails to file a data collection statement. Further, H.R. 637

contains a provision permitting administrative discipline against an officer who intentionally violates a provision of this act.

Drone Aircraft Privacy and Transparency Act of 2013 (H.R. 1262)

Representative Ed Markey introduced the Drone Aircraft Privacy and Transparency Act of 2013 (H.R. 1262).¹²⁹ This bill would amend the FAA Modernization and Reform Act of 2012 to create a comprehensive scheme to regulate government actors' use of drones, including data collection requirements and enforcement mechanisms.

First, this bill would require the Secretary of Transportation, with input from the Secretary of Commerce, the Chairman of the Federal Trade Commission, and the Chief Privacy Officer of the Department of Homeland Security, to study any potential threats to privacy protections posed by the introduction of drones in the national airspace. Next, the bill would prohibit the FAA from issuing a license to operate a drone unless the application for such use included a "data collection statement." This statement would require the following items:

- A list of individuals who would have the authority to operate the drone
- The location in which the drone will be used
- The maximum period it will be used
- Whether the drone would be collecting information about individuals

If the drone will be used to collect personal information, the statement must include the following:

- The circumstances in which such information will be used
- The kinds of information collected and the conclusions drawn from it
- The type of data minimization procedures to be employed
- Whether the information will be sold, and if so, under what circumstances
- How long the information would be stored
- Procedures for destroying irrelevant data.

The statement must also include information about the possible impact on privacy protections posed by the operation under that license and steps to be taken to mitigate this impact. Additionally, the statement must include the contact information of the drone operator; a process for determining what information has been collected about an individual; and a process for challenging the accuracy of such data. Finally, the FAA would be required to post the data collection statement on the Internet.

In addition to the data collection statement, any law enforcement agency which operates a drone must file with the FAA a "data minimization statement." This statement must include policies adopted by the agency that

¹²⁹ H.R. 1262, 113th Cong. (2d Sess. 2013).

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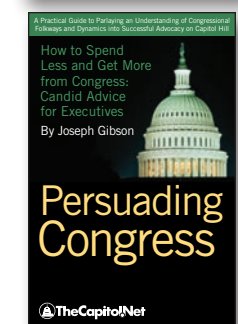
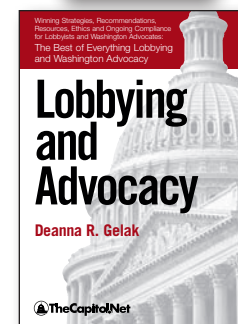
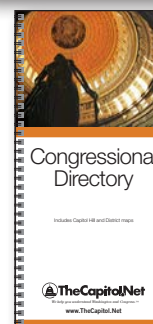
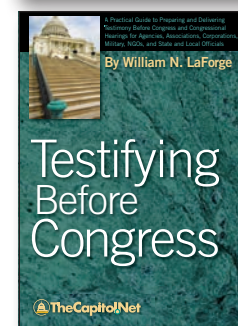
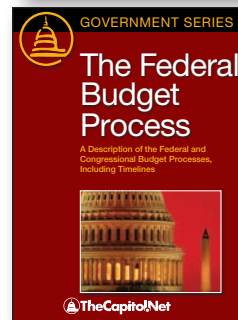
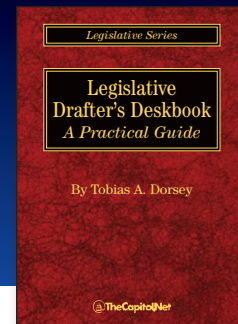
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- minimize the collection of information and data unrelated to the investigation of a crime under a warrant,
- require the destruction of data that is no longer relevant to the investigation of a crime,
- establish procedures for the method of such destruction, and
- establish oversight and audit procedures to ensure the agency operates a UAS in accordance with the data collection statement filed with the FAA.

H.R. 1262 includes several enforcement mechanisms. First, the FAA may revoke a license of a user that does not comply with these requirements. The Federal Trade Commission would have the primary authority to enforce the data collection requirements just stated. Additionally, the Attorney General of each state, or an official or agency of a state, is empowered to file a civil suit if there is reason to believe that the privacy interests of residents of that state have been threatened or adversely affected. H.R. 1262 would also create a private right of action for a person injured by a violation of this legislation.

Conclusion

The introduction of drones into American airspace raises many legal and policy questions. For instance, how far can the government go in its attempts to maintain security and ensure that laws are enforced? What level of privacy should Americans expect in an age where technology facilitating the acquisition of personal information expands at a phenomenal pace? Currently, there is a vast body of Fourth Amendment law that governs the circumstances in which law enforcement must obtain a warrant before conducting surveillance. However, the sheer sophistication of drone technology and the sensors they can carry may remove drones from this traditional Fourth Amendment framework. Beyond the courts and the Constitution, what role should Congress and the President play in regulating the introduction of drones inside the United States? As the integration of drones for domestic surveillance operations quickly accelerates, these questions and others will be posed to the American people and their political leaders.

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