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Drone Invasion: Unmanned Aerial Vehicles and the Right to Privacy

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DRONE INVASION: UNMANNED AERIAL VEHICLES AND THE RIGHT TO PRIVACY

REBECCA L. SCHARF*

Since the birth of the concept of a legally recognized right to privacy in Samuel D. Warren and Louis D. Brandeis' influential 1890 law review article, "The Right to Privacy,"¹ common law—with the aid of influential scholars—has massaged the concept of privacy torts into actionable claims. But now, one of the most innovative technological advancements in recent years, the unmanned aerial vehicle, or drone, has created difficult challenges for plaintiffs and courts navigating common law privacy tort claims.

This Article explores the challenges of prosecution of the specific privacy tort of intrusion upon seclusion involving nongovernmental use of drone technology. Specifically, it proposes that drone technology must be an added consideration when determining the two elements of the intrusion upon seclusion privacy tort. The current common law invasion of privacy tort analysis is not sufficient to protect an individual's right to privacy for torts committed using the modern and complex technology of drones. Thus, consideration of drone technology must be weaved into analyzing whether the plaintiff had a reasonable expectation of privacy and whether the intrusion was highly offensive to a reasonable person.

Further, this Article analyzes and evaluates the practical problems that arise in prosecuting intrusion upon seclusion claims in the drone-age, and how certain states' statutes address or fail to address these issues. From determining the owner of the drone so as to name a defendant, to proving intent, it is almost impossible for a plaintiff to survive to establish a successful intrusion upon seclusion claim. Moreover, this Article suggests statutes may combat many of the problems in prosecuting drone-related privacy tort claims by incorporating a rebuttable presumption that the defendant intruded upon the plaintiff's seclusion once the plaintiff has alleged a prima facie case. This presumption is like the presumptions found in many state statutes regarding physical damage from torts committed with aircrafts against a person or property. Thus, because the defendant, a prudent drone owner, would be in the best position to disprove the intrusion, the defendant could rebut the claim by introducing such evidence as flight path data, photo or video footage, or possession at the time of the alleged intrusion.

With the constantly evolving technology and innovation in the age of drones, prosecuting William Prosser's concept of the "right . . . 'to be let alone'"² when an

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1. Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy*, 4 HARV. L. REV. 193 (1890).

2. William L. Prosser, *Privacy*, 48 CALIF. L. REV. 383, 389 (1960) (internal citations

individual's right to privacy is violated comes with many challenges. Although other scholarship discusses the relationship between drones and privacy torts, this Article is novel in that it explores the practical issues of prosecuting intrusion upon seclusion claims in the age of drones. It further recommends considerations for courts and legislators when the right to privacy and drones collide.

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INTRODUCTION

As drones³ become more common in the United States, so too do situations where drone operators “find themselves, either intentionally or unintentionally, running up against the law.”⁴ In 2010, the Federal Aviation Administration (FAA) predicted

omitted).

3. A variety of terms are used to describe “unmanned” aircraft: drones, unmanned aerial vehicles (UAV), unmanned aircraft (UA), and unmanned aerial systems (UAS), which refer either “to the system [or] systems in the aircraft or the aircraft-ground station system.” Donna A. Dulo, *Aeronautical Foundations of the Unmanned Aircraft*, in *UNMANNED AIRCRAFT IN THE NATIONAL AIRSPACE: CRITICAL ISSUES, TECHNOLOGY, AND THE LAW* 21, 21 n.1 (Donna A. Dulo ed., 2015). The term “drone” is used throughout this Article for purposes of consistency.

4. ARTHUR HOLLAND MICHEL & DAN GETTINGER, CENTER FOR THE STUDY OF THE DRONE AT BARD COLLEGE, *DRONE INCIDENTS: A SURVEY OF LEGAL CASES 1* (2017), <http://dronecenter.bard.edu/files/2017/04/CSD-Drone-Incidents.pdf> [<https://perma.cc/D6BU-8UVQ>].

there would be 15,000 drones purchased annually in the United States alone by 2020.⁵ Instead, there were 616,000 drones registered in 2016⁶ and the FAA now predicts *seven million* drones could be purchased annually by 2020.⁷ As more and more drones outfitted with technological advancements begin soaring through the skies, the likelihood that individuals' privacy will be intruded upon is correspondingly increasing. Even in the face of this heightened risk to privacy, however, the FAA and Congress are failing to take action to protect individuals, and state legislatures are only slowly developing statutes to protect privacy interests.⁸ These state statutes, however, largely remain untested as they are merely speculative and derived from privacy laws that give little weight or consideration to the nuanced and technological features of drones. Moreover, existing common-law privacy torts are not sufficient to address the complex and multilayered technologies that can be outfitted on drones.

"Given that no nation-wide drone-specific privacy laws exist, [state and local] prosecutors have used a variety of charges to address privacy-related drone incidents, including local drone ordinances."⁹ For example, in one of the first prosecutions in the United States for unlawful surveillance using a drone by a private citizen, a resident of New York was arrested after taking photos and video of a medical building using his drone.¹⁰ At the two-day trial, the drone operator took the position that he was flying his drone to take "videos and photos of the façade of the structure" while waiting for his mother's medical appointment to conclude.¹¹ He further argued that the drone's camera was not equipped with a zoom lens, the building's windows were tinted, and the footage did not show the building's interior.¹² Although the prosecutors and the employees expressed concern about patient privacy, the jury acquitted the drone's operator.¹³

In Wisconsin in 2015, a drone operator was found guilty of five out of six municipal citations for his use of a drone "to harass residents in a DeForest neighborhood."¹⁴ The charges came in response to numerous reports from residents

5. FED. AVIATION ADMIN., FAA AEROSPACE FORECAST: FISCAL YEARS 2010-2030, at 48 (2010).

6. *Drone Registration Marks First Anniversary*, FED. AVIATION ADMIN. (Dec. 21, 2016, 11:48 AM), <https://www.faa.gov/news/updates/?newsId=87049> [<https://perma.cc/QP23-7SFT>].

7. FED. AVIATION ADMIN., FAA AEROSPACE FORECAST: FISCAL YEARS 2016-2036, at 31 (2016) [hereinafter FAA, YEARS 2016-2036].

8. *See, e.g.*, FLA. STAT. ANN. § 934.50 (West 2015); IDAHO CODE § 21-213 (2009); NEV. REV. STAT. ANN. § 493.103 (LexisNexis 2016); WISC. STAT. ANN. § 895.50(2)(a) (West 2017).

9. MICHEL & GETTINGER, *supra* note 4, at 3.

10. Ariél Zangla, *David Beesmer Acquitted in Town of Ulster Drone Surveillance Case*, DAILY FREEMAN (June 22, 2015), https://www.dailyfreeman.com/news/david-beesmer-acquitted-in-town-of-ulster-drone-surveillance-case/article_04e5d53a-195e-5705-866b-ffe46e101a22.html [<https://perma.cc/Y39H-2EPW>].

11. *Id.*

12. *Id.*

13. *Id.*

14. Joe Pruski, *Drone Ace Has Day in Court*, DEFOREST TIMES-TRIB. (Oct. 9, 2015), http://www.hngnews.com/deforest_times/news/local/article_47b07034-6e90-11e5-860e-e7a77ccd08e7.html [<https://perma.cc/WV4P-ZKGV>].

that a drone was “flying near their windows and observing them on their private property.”¹⁵ After a bench trial, the judge found the drone operator guilty on four disorderly conduct citations and a citation for unlawful use of a drone.¹⁶ The ordinance that the operator violated had been recently adopted and made it illegal for an “individual to use a drone to observe a person in a place where that person should have a reasonable expectation of privacy.”¹⁷

In a similar incident in early 2017, a couple in Orem, Utah, used a drone equipped with a video camera to observe neighbors in their homes.¹⁸ One of the victims of the couple’s voyeurism spotted the drone outside of his bathroom, chased it down with his truck, and seized it once it landed in a church parking lot and no one came to retrieve it.¹⁹ The victim, who was familiar with drones, reviewed the drone’s photo card and discovered “hours of footage of the drone peering into the homes of houses around the neighborhood.”²⁰ He then turned the drone over to the police, who were able to locate the couple with the help of the footage and a Facebook post.²¹ The couple was each charged with a misdemeanor count of voyeurism using concealed or disguised electronic equipment.²²

But, even with the new statutes and ordinances and their application to drone operators, there is still a gap in the law for basic privacy violations involving drones. For example, a Florida father sought police intervention when he noticed a drone above his home.²³ He claimed that on several occasions the drone loomed over his house and followed his children around the neighborhood.²⁴ The drone’s pilot was a neighbor who had been arrested the month prior for allegedly trying to lure children into his car.²⁵ Although the family believed that “[i]t was definitely an invasion of our privacy,” police did not arrest or charge the operator.²⁶

With the FAA predicting seven million drones in the air in the United States alone by the year 2020,²⁷ it is critical that states—and indeed the public—recognize the

15. *Id.*

16. *Id.*

17. *Id.*

18. Mary Papenfuss, *Utah Couple Arrested Over ‘Peeping Tom’ Drone*, HUFFPOST (Feb. 17, 2017, 2:51 AM), https://www.huffingtonpost.com/entry/peeping-tom-drone_us_58a6847fe4b045cd34c03e56 [<http://perma.cc/PLB2-CTBA>].

19. *Utah Couple Arrested for Allegedly Peering into Neighbors’ Windows with Drone*, FOX NEWS (Feb. 16, 2017), <http://www.foxnews.com/us/2017/02/16/utah-couple-arrested-for-allegedly-peering-into-neighbors-windows-with-drone.html> [<https://perma.cc/SW3W-KJXU>].

20. *Id.*

21. Papenfuss, *supra* note 18.

22. *Id.*

23. *Lee County Dad Says He Caught Drone Spying on His Kids*, NBC 2 NEWS (June 12, 2018, 3:52 PM), <http://www.nbc-2.com/story/35181363/lee-county-dad-says-he-caught-drone-spying-on-his-kids> [<https://perma.cc/S85R-GNKL>].

24. *Id.*

25. *Id.*

26. *Id.*

27. FAA, YEARS 2016-2036, *supra* note 7, at 31; *Should You Be Allowed to Prevent Drones From Flying Over Your Property?*, WALL ST. J. (May 22, 2016, 10:03 PM), <http://www.wsj.com/articles/should-you-be-allowed-to-prevent-drones-from-flying-over-your>

significant change soon coming, and the potential for it to affect the personal privacy of the average citizen. Such technological advancements harken back to Samuel D. Warren and Louis D. Brandeis' seminal law review article, *The Right to Privacy*,²⁸ which has been described as arguably the most influential article ever written.²⁹ In 1890, Warren and Brandeis lamented the invention of cameras with the ability to take "instantaneous photographs"³⁰ and the ability of those cameras to invade "the sacred precincts of private and domestic life."³¹ Warren and Brandeis concerned themselves with the "numerous mechanical devices [that] threaten to make good the prediction that 'what is whispered in the closet shall be proclaimed from the house-tops.'"³²

Although there have been many articles focused on the government's use of drones, this Article will focus on the private, nongovernmental use of drones; that is, drones that are not used by military or law enforcement. Moreover, the Article will focus on what portends to be the ubiquitous use of drones by private individuals and the concomitant ramifications on the privacy of others. More specifically, it will address how the common law invasion of privacy intrusion upon seclusion tort is not sufficient to account for drone technology and suggests that more states should be crafting statutes to address the invasion of privacy claims that are undoubtedly looming.

-property-1463968981 [https://perma.cc/YJ73-RDMB] (the number of sales of unmanned aerial vehicles is expected to increase from 2.5 million in 2016 to 7 million in 2020).

28. Warren & Brandeis, *supra* note 1; *see also* 1 J. THOMAS MCCARTHY, *THE RIGHTS OF PUBLICITY AND PRIVACY* 16–21 (2018 ed.).

29. Harry Kalven, Jr., *Privacy in Tort Law—Were Warren and Brandeis Wrong?*, 3 L. & CONTEMP. PROBS. 326, 327 (1966) (stating that Warren and Brandeis' *The Right to Privacy* is the "most influential law review article of all"); *see also* MCCARTHY, *supra* note 28, at 16–21; Prosser, *supra* note 2, at 383; Richard C. Turkington, *Legacy of the Warren and Brandeis Article: The Emerging Unencumbered Constitutional Right to Informational Privacy*, 10 N. ILL. U. L. REV. 479, 481 (1990) ("It is likely that *The Right to Privacy* has had as much impact on the development of law as any single publication in legal periodicals.").

30. The "instantaneous photographs" refers to advances in photography that took place in the 1880s that allowed for an individual to take snapshots. Prior to this point, it would take several minutes to take a photograph, with the individual sitting still the entire time. RICHARD C. TURKINGTON & ANITA L. ALLEN, *PRIVACY LAW: CASES AND MATERIALS* 45 (2d ed. 2002); *see also* ALAN F. WESTIN, *PRIVACY AND FREEDOM* 336, 338 (1967). The telephone, microphone, and digital recorder, with ability to tap telephone lines were also invented/developed in the later decades of the nineteenth century. TURKINGTON & ALLEN, *supra*, at 45.

31. Warren & Brandeis, *supra* note 1, at 195.

32. *Id.* Warren and Brandeis' seminal privacy article was undoubtedly influenced by changes in technology in the late nineteenth century:

Recent inventions and business methods call attention to the next step which must be taken for the protection of the person, and for securing to the individual what Judge Cooley calls the right "to be let alone." Instantaneous photographs and newspaper enterprise have invaded the sacred precincts of private and domestic life; and numerous mechanical devices threaten to make good prediction that "what is whispered in the closet shall be proclaimed from the house-tops."

Id. (internal citations omitted); *see* TURKINGTON & ALLEN, *supra* note 30, at 45.

Part I explores the background on drones, including their features, longevity, prices, availability, and advancements, drones are becoming more commonplace for private and commercial uses. Part II explores the history of the right to privacy and specifically the privacy tort of inclusion upon seclusion. This Part also addresses the FAA and the current regulations for drones for both recreational and commercial use. Part III discusses the right to privacy and drones: how the statutory schemes for civil and criminal liability have addressed drones and how common-law privacy torts affect the brave new world of drones. Finally, Part IV identifies the practical hurdles for prosecuting drone-related privacy torts and recommends that courts consider the extent of technology used by drone operators.

I. BACKGROUND ON DRONES

Drones are astonishing technological advancements in themselves, but their capabilities also make them irresistible to the military and police, companies, and the everyday citizen. This small, flying technology platform can reach new heights and limits physically, but can also record a vast amount of information/data through photography, video, and sensors, including location information, audio, thermal imaging, facial recognition, night vision, and data interception.³³ These capabilities have greatly expanded with each model and technological advancement³⁴ and the sheer number of drones available and in use today surpassed predictions.³⁵

Technologically, drones continue to break new barriers. For example, they can utilize license plate readers and sensors to allow them to recognize a license plate and then conduct surveillance on the vehicle with that license plate.³⁶ New

33. RICHARD M. THOMPSON II, CONG. RESEARCH SERV., R42701, DRONES IN DOMESTIC SURVEILLANCE OPERATIONS: FOURTH AMENDMENT IMPLICATIONS AND LEGISLATIVE RESPONSES 3–4 (2013) (observing that drones may be equipped with “high-powered cameras, thermal imaging devices, license plate readers, and laser radar (LADAR)” (internal citations omitted)).

34. Drone technology has increased dramatically in recent years. Specifically, drones can travel farther, both in distance and in height, stay aloft for longer periods of time, and are more accessible and advantageous to individual and commercial use. *See, e.g.*, Michael Calvo, *Uncertainty and Innovation: The Need for Effective Regulations to Foster Successful Integration of Personal and Commercial Drones*, 22 SW. J. INT’L L. 189, 193–94 (2016) (“Drones can be found in a number of civilian sectors such as journalism, scientific research, agriculture, and surveillance. Because of how they are designed, their variations in size, and their almost limitless capabilities, drone technology has virtually presented this generation with a twenty-first century new-age equivalent of the Swiss-Army Knife.” (footnotes omitted)); Andy Linn, Comment, *Agriculture Sector Poised to Soar with Drone Integration, but Federal Regulation May Ground the Industry Before It Can Take Off*, 48 TEX. TECH L. REV. 975, 977 (2016) (discussing drone use in the agricultural industry).

35. FAA, YEARS 2016–2036, *supra* note 7, at 31.

36. Although drones can be equipped with thermal imaging devices, facial recognition technology, high powered cameras, and laser radar, all at a relatively low cost, given the increases in surveillance technology generally, the surveillance capabilities are likely to increase exponentially. ANNA T. MCKENNA & CLIFFORD S. FISHMAN, WIRETAPPING AND EAVESDROPPING IN THE INTERNET AGE (3d ed. 2007).

technology is being developed to help drones land like birds, allowing drones with wings to land with less runway space.³⁷

Sensor platforms on drones also continue to become more sophisticated, increasing their ability to conduct a variety of different types of surveillance. Multispectral sensors are used to capture unseen information as well as to advance agricultural sciences.³⁸ Drones are being developed to utilize processing and decision-making technology to be more nimble and adaptable to changing surroundings.³⁹ Drones may carry platforms that allow live video feeds, infrared cameras, heat sensors, radar, and Wi-Fi crackers,⁴⁰ which can spoof, or impersonate, cell phone towers.⁴¹ The United States Air Force has developed sensor platforms that allow for long-range monitoring using “electro-optical and infrared sensors,” that may soon be placed in fighter jets, allowing pilots to operate drones.⁴²

Moreover, private industry is taking notice and embracing drone technology,⁴³ which will likely lead to even more advances and inevitable tort-law implications.

37. David Hambling, *Drones Are Learning to Land Like Birds*, POPULAR MECHANICS (Mar. 20, 2017), <http://www.popularmechanics.com/flight/drones/a25718/drone-bird-ai/> [<https://perma.cc/7BGY-4H76>]. Drones with wings are likely more power-efficient, which may allow drones to stay aloft longer and carry more weight. “A more advanced version of this perching drone could go anywhere with limited landing space, whether dousing fires, fighting a war, or just delivering a package. It could one day land on your windowsill as easily and frequently as a pigeon.” *Id.*

38. See, e.g., Christopher Van Veen, *The Eyes Have It... But Not Always*, HEADWALL BLOG (Apr. 13, 2017), <https://www.headwallphotonics.com/blog/the-eyes-have-it...but-not-always> [<https://perma.cc/8QVC-SLQL>]; Andrew Zaleski, *This California Vineyard Is Using Drones to Make Better Wine*, FORTUNE (Jan. 24, 2016), <http://fortune.com/2016/01/24/california-vineyard-drones-wine/> [<https://perma.cc/M7XC-WL7W>]; see also Clay Dillow, *Get Ready for ‘Drone Nation,’* FORTUNE (Oct. 8, 2014), <http://fortune.com/2014/10/08/drone-nation-air-droid/> [<http://perma.cc/V7QA-QU74>].

39. E.g., April Glaser, *Qualcomm’s Latest Technology Allows Drones to Learn About Their Environment As They Fly*, RECODE (Jan. 17, 2017, 5:00 PM), <https://www.recode.net/2017/1/17/14195076/qualcomm-drones-machine-learning-flight-control-ces-2017-snapdragon> [<https://perma.cc/PM6L-WA2S>].

40. Wi-Fi crackers are devices that can defeat a local Wi-Fi network security system. *Surveillance Drones*, ELECTRONIC FRONTIER FOUND., <https://www EFF.org/issues/surveillance-drones> [<https://perma.cc/BY7S-T95N>].

41. *Id.*

42. David Cenciotti & David Axe, *This New Drone Sensor Can Scan a Whole City at Once*, MEDIUM: WAR IS BORING (Sept. 9, 2014), <https://medium.com/war-is-boring/the-new-sensor-on-this-drone-can-scan-a-whole-city-at-once-33c314d4c763> [<https://perma.cc/FR2F-2KJJ>]. While not technically a sensor platform, drones may also be used to carry lethal or non-lethal payloads such as missiles, tasers, or rubber bullets. *Surveillance Drones*, *supra* note 40.

43. A study conducted by the Association for Unmanned Vehicle Systems International (AUVSI), the largest international association for drones, John Villasenor, *Observations from Above: Unmanned Aircraft Systems and Privacy*, 36 HARV. J.L. PUB. POL’Y, 457, 466 (2013), predicted that the drone industry has the potential to be worth over \$400 billion in revenue, and to create 103,776 jobs. Chris Wickham, *Military Drones Zero in on \$400 Billion Civilian Market*, REUTERS (Nov. 14, 2012, 11:25 AM), <http://www.reuters.com/article/2012/11/14/us-science-drones-civilian-idUSBRE8AD1HR20121114> [<https://perma.cc/QZ59-JFY2>]; see

Industries such as agriculture, construction, energy, mining, real estate, and film are showing great interest in drones.⁴⁴ The oil industry has used “drone-based thermal imaging and gas ‘sniffer’ technology to inspect oil rigs and pipelines.”⁴⁵ A security company is integrating drones into home security systems,⁴⁶ and the construction industry is keen to use drones for quicker and more precise surveying and more efficient deployment of resources on each job site.⁴⁷ In addition to using sensors, the agriculture industry is moving towards low- and mid-elevation irrigation systems using drones, and monitoring and collecting data to improve quality and conditions of their operations.⁴⁸ Further, energy companies are planning to deploy drones to perform dangerous tasks involving power lines, where workplace injury is common.⁴⁹

In addition to myriad commercial uses, drones are wildly popular for hobbyists and recreational users—flying for enjoyment or educational purposes.⁵⁰ Users employ their drones for various purposes, ranging from capturing photos from various heights and angles, to taking video of their sporting teams to improve play, and, of course, flying for general enjoyment.⁵¹ Users may also be tempted to use

also Matt Sledge, *Domestic Drone Lobby Pushes Back on Restrictions, Seeks Tax Breaks*, HUFFPOST (Mar. 14, 2013), http://www.huffingtonpost.com/2013/03/13/domestic-drones_n_2868450.html [<https://perma.cc/U4DL-653V>]; Los Angeles News Group, *Businesses See Opportunity in Civilian Drones, but Regulations Stand in the Way*, DENVER POST (Apr. 29, 2016, 5:32 PM), http://www.denverpost.com/ci_23522851/businesses-see-opportunity-civilian-drones-but-regulations-stand [<https://perma.cc/434N-HSF8>].

44. Villaseñor, *supra* note 43, at 459 (delineating examples where drones are used for commercial purposes such as crop spraying, traffic monitoring, and surveying); Richard Best, *8 Sectors That Drones Are Influencing in 2016*, INVESTOPEdia (Feb. 14, 2016), <https://www.investopedia.com/articles/markets/021416/8-sectors-drones-are-influencing-2016.asp> [<https://perma.cc/PB5A-XADG>].

45. Guillaume Thibault & Georges Aoude, *Companies Are Turning Drones into a Competitive Advantage*, HARV. BUS. REV. (June 29, 2016), <https://hbr.org/2016/06/companies-are-turning-drones-into-a-competitive-advantage> [<https://perma.cc/ZXX6-XYT9>].

46. Luke Dormehl, *Halt! A New Home Security System Deploys a Drone to Patrol Your Property*, DIGITAL TRENDS (Nov. 5, 2016, 5:00 PM), <https://www.digitaltrends.com/cool-tech/sunflower-home-awareness-system/> [<https://perma.cc/JB9U-Q89F>].

47. Clay Dillow, *The Construction Industry Is in Love with Drones*, FORTUNE (Sept. 13, 2016), <http://fortune.com/2016/09/13/commercial-drone-construction-industry/> [<https://perma.cc/2VAC-UVF6>].

48. Logan Hawkes, *Drone Use in Agriculture Expected to Grow Quickly*, SW. FARMPRESS (Mar. 31, 2017), <http://www.southwestfarmpress.com/technology/drone-use-agriculture-expected-grow-quickly> [<https://perma.cc/EVF2-VULE>].

49. Aaron Gregg, *This Drone Operator is Helping Power Companies Mechanize Their Most Dangerous Jobs*, WASH. POST (Feb. 7, 2017), https://www.washingtonpost.com/news/capital-business/wp/2017/02/07/this-drone-operator-is-helping-power-companies-mechanize-their-most-dangerous-jobs/?utm_term=.03483ca0119f [<https://perma.cc/QW8A-32GD>].

50. University of Montana: Autonomous Aerial Systems Office, *Hobbyists and Recreational Users*, <https://www.umt.edu/aaso/Hobbyist.php> [<https://perma.cc/K8K5-D539>].

51. See Nick Wingfield, *A Field Guide to Civilian Drones*, N.Y. TIMES (Aug. 29, 2016), <https://www.nytimes.com/interactive/2015/technology/guide-to-civilian-drones.html> [<https://perma.cc/2ECR-WZHB>].

drones for hunting purposes, which six states prohibit, or for interfering with lawful hunting, which seven states prohibit.⁵²

Moreover, drones provide consumers with relatively inexpensive technology with which to engage in a variety of tasks.⁵³ Hobbyist drones can be purchased both online and in brick and mortar locations, with stores like Best Buy,⁵⁴ Office Depot,⁵⁵ and Walmart offering a variety of drones for purchase.⁵⁶ On average, users spend between \$600–\$2,500 for a high-quality drone, and most fly for only about twelve to thirty minutes before needing to be recharged.⁵⁷ Less expensive models are available for only a few hundred dollars; these are typically targeted toward beginners,⁵⁸ and can only fly for ten or fewer minutes a charge.⁵⁹

This booming industry incentivizes companies to develop new and unique drone technologies and features. However, malfunctions and necessary recalls plague quick-to-market drones. A leading company, Go-Pro, had to recall a drone just weeks after going to market because the drones were falling midflight.⁶⁰ Videos surfaced online of the crashes, including some crashes showing drones nearly colliding with passersby, which likely prompted the quick recall by the company.⁶¹

Moreover, as domestic and hobbyist drone use is increasing in popularity, the likelihood owners and operators may be liable for various tort violations is also

52. *2016 Unmanned Aircraft Systems (UAS) State Legislation Update*, NAT'L CONF. ST. LEGISLATURES (Mar. 20, 2017), <https://www.ncsl.org/research/transportation/2016-unmanned-aircraft-systems-uas-state-legislation-update.aspx> [https://perma.cc/MW7X-B3K9].

53. Unmanned aircraft come in all shapes and sizes, have thousands of uses, and can be purchased by your average person. Divya Joshi, *Exploring the Latest Drone Technology for Commercial, Industrial and Military Drone Uses*, BUS. INSIDER (July 13, 2017, 4:40 PM), <https://www.businessinsider.com/drone-technology-uses-2017-7> [https://perma.cc/7ZMH-QGBL].

54. *See DJI - Mavic Air Fly More Combo Quadcopter with Remote Controller*, BEST BUY, <https://www.bestbuy.com/site/dji-mavic-air-fly-more-combo-quadcopter-with-remote-controller-onyx-black/6194017.p?skuId=6194017>.

55. *See DJI Mavic 2 Pro Drone With 4K UHD Camera*, OFFICE DEPOT, <https://www.officedepot.com/a/products/9559064/DJI-Mavic-2-Pro-Drone-With/> [https://perma.cc/MG26-3HDD].

56. *See Phantom 3 Professional Quadcopter*, WALMART, <https://www.walmart.com/ip/DJI-Phantom-3-Professional-Quadcopter-with-4K-Camera-3-Axis-Gimbal-23-min-Flight-Time-20-mm-Focal-Length-f-2.8-Lens/45655207> [https://perma.cc/8BML-MHM6].

57. *See* Jim Fisher, *The Best Drones of 2019*, PC MAG. (Dec. 7, 2018, 11:08 AM), <https://www.pcmag.com/roundup/337251/the-best-drones> [https://perma.cc/4KAT-N7N9].

58. *Id.* Interestingly, see Justice Powell's dissent in *Dow Chemical Co. v. United States*, 476 U.S. 227, 251 n.13 (1986) (Powell, J., dissenting) observing that "members of the public" were not likely to use the surveillance technology at issue due to the cost.

59. *See 17 Cheap Drones for Beginners (Under \$180): Updated with New Drone Models for 2018*, UAV COACH, <https://uavcoach.com/cheap-drones-for-beginners/> [https://perma.cc/UW8J-6PPM].

60. Sean O'Kane, *GoPro's Karma Drone is Back on Sale, Three Months After Recall*, VERGE (Feb. 1, 2017, 10:00 AM), <https://www.theverge.com/2017/2/1/14458974/gopro-karma-sale-relaunch-recall-crash> [https://perma.cc/4TMG-5DCC].

61. Sean O'Kane, *Watch GoPro Karma Drones Fall Out of the Sky*, VERGE (Nov. 10, 2016, 2:24 PM), <https://www.theverge.com/2016/11/10/13588396/gopro-karma-drone-recall-defect-shut-off-falling-video> [https://perma.cc/Z3SZ-T6W4].

rising. Perhaps mindful of the increasing potential for litigation, in 2015, the FAA unveiled a web-based drone registration process for owners of small drones “weighing more than 0.55 pounds . . . and less than 55 pounds . . . including payloads such as on-board cameras.”⁶² The registration process is focused primarily on facilitating the FAA’s ability to identify and keep track of the thousands of drones currently in use.⁶³ To register, owners must provide their names, home address, and email address, and then the website will generate a Certificate of Aircraft Registration/Proof of Ownership coupled with a unique identification number that must be marked on the drone.⁶⁴ In May 2016, the FAA released a database of the city, state, and zip code of each registered drone owner.⁶⁵ As of January 2017, over 670,000 drones were registered in the United States.⁶⁶

While regulations requiring registration do provide some modicum of transparency regarding drone ownership, they are equally as notable for what they fail to provide or require. For example, if the drone is of such a size that there is no room for the unique identification number to be marked on the outside, the identification number may instead be placed on the inside of the battery compartment so long as “it doesn’t require a tool to open.”⁶⁷ Similarly, while owners are required to provide their names, addresses, and contact information to the FAA, the only information provided in the database is their city, state, and zip code.⁶⁸ While this undoubtedly protects the privacy of the drone owner, the database does little to provide transparency to the average citizen who suspects a drone user is potentially invading his privacy.

62. Press Release, Fed. Aviation Admin., FAA Announces Small UAS Registration Fee (Dec. 14, 2015), https://www.faa.gov/news/press_releases/news_story.cfm?newsId=19856 [hereinafter FAA, *Registration Fee*] [<https://perma.cc/5ZMB-2AHP>].

63. See Cecilia Kang, *Drone Shopping? F.A.A. Rules May Hover Over the Holidays*, N.Y. TIMES (Nov. 23, 2015), <https://www.nytimes.com/2015/11/24/technology/proposed-regulations-for-drones-are-released.html> [<https://perma.cc/EN43-9DZA>].

64. FAA, *Registration Fee*, *supra* note 62.

65. *FAA Releases Drone Registration Location Data*, FED. AVIATION ADMIN. (July 1, 2016, 10:03 AM), <https://www.faa.gov/news/updates/?newsId=85548> [<https://perma.cc/6B8Z-Y456>].

66. Jonathan Vanian, *Drone Registrations Are Still Soaring*, FORTUNE (Jan. 7, 2017), <http://fortune.com/2017/01/06/drones-registrations-soaring-faa/> [<https://perma.cc/C3VD-PHZ6>].

67. *How to Label Your UAS*, FED. AVIATION ADMIN., https://www.faa.gov/uas/getting_started/register_drone/media/UAS_how_to_label_Infographic.pdf [<https://perma.cc/4K6A-KA34>]. 14 C.F.R. § 48.205 (2018) states that the identifier must be “legible,” affixed by any means necessary to remain affixed throughout the duration of the flight, and must be “readily accessible and visible upon inspection A unique identifier enclosed in a compartment is readily accessible if it can be accessed without the use of any tool.” The FAA allows operators to mark their UAS with their registration number by engraving, using a permanent label, or a permanent marker. *How to Label Your UAS*, *supra*.

68. *FAA Releases Drone Registration Location Data*, *supra* note 65.

A. Drones and Longevity

In addition to their increasing numbers, modern drones can travel farther, both in distance and in height, and stay aloft for longer periods of time.⁶⁹ Depending on the combination of amenities, drones can now stay in the air for several hours, days, and soon indefinitely. For example, a drone carrying up to eleven pounds can travel at approximately sixty-two miles per hour for up to an hour.⁷⁰ The current world record for longest duration of an unmanned aircraft is a solar-powered drone that stayed aloft for fourteen days and twenty-two minutes.⁷¹ Other companies are attempting to increase the time a drone can stay aloft by utilizing liquid hydrogen and even wireless charging.⁷² Moreover, development has started on drones to enable them to remain airborne for years, potentially acting as a distribution location for companies' delivery-service drones.⁷³ Technology advancements to increase the time a drone can stay aloft have been sparked mainly by military needs and private companies' desire

69. S. Alex Spelman, Note, *Drones: Updating the Fourth Amendment and the Technological Trespass Doctrine*, 16 NEV. L.J. 373, 411–12 (2015) (“[C]urrent drone technology typically operates aloft only for a matter of hours, but certain UAS devices, called high-altitude long-endurance (HALE) UAS, will have the potential to operate in the air for extremely prolonged periods of time (even years), which will enable them to gather long-term information about the ground, including constitutionally protected areas such as our backyards and other parts of the curtilage.”); see Shane Crotty, Note, *The Aerial Dragnet: A Drone-ing Need for Fourth Amendment Change*, 49 VAL. U. L. REV. 219, 227 (2014) (citing the time periods various drones can stay aloft: “Drones are also capable of staying airborne for long periods of time, several in excess of twenty-four hours.”); William C. Marra & Sonia K. McNeil, *Understanding “The Loop”: Regulating the Next Generation of War Machines*, 36 HARV. J.L. & PUB. POL’Y 1139, 1169 (2013) (describing various military drones and how long each can stay afloat); Melanie Reid, *Grounding Drones: Big Brother’s Tool Box Needs Regulation Not Elimination*, 20 RICH. J.L. & TECH. 1, 8–9 (2014) (describing various drones and how long they can stay in the air).

70. Nick Heath, *The Long-Range Drone That Can Keep Up with a Car and Fly for an Hour*, TECHREPUBLIC (May 27, 2015, 7:31 AM), <http://www.techrepublic.com/blog/European-technology/the-long-range-drone-that-can-keep-up-with-a-car-and-fly-for-an-hour/> [<https://perma.cc/K3GF-U9N9>].

71. *Longest Flight by Solar-powered Spyplane (UAV)*, GUINNESS WORLD RECORDS (July 23, 2009), [http://www.guinnessworldrecords.com/world-records/longest-flight-by-solar-powered-spyplane-\(uav\)](http://www.guinnessworldrecords.com/world-records/longest-flight-by-solar-powered-spyplane-(uav)) [<https://perma.cc/5HWA-KEGD>]. Another type of drone, a vertical takeoff and landing drone, stayed aloft for “a total flight time of 22 hours, 29 minutes, and 38 seconds, with fuel to spare.” *Latitude Engineering HQ-60 UAV Sets New Flight Record*, AERO NEWS NETWORK (Oct. 4, 2016), <http://www.aero-news.net/index.cfm?do=main.textpost&id=22ad959f-d3fa-4b4e-8914-e9e10e3df8f1> [<https://perma.cc/4U89-7CFU>].

72. See Allison Barrie, *Enormous Phantom Eye Drone Can Stay Aloft for 4 Days*, FOX NEWS (Mar. 24, 2016), <http://www.foxnews.com/tech/2012/06/06/enormous-phantom-eye-drone-can-stay-aloft-4-days/> [<https://perma.cc/64K5-NRBA>]; Colin Smith, *Flying Drones Could Soon Re-Charge Whilst Airborne with New Technology*, IMPERIAL C. LONDON (Oct. 20, 2016), http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_17-10-2016-13-48-58 [<https://perma.cc/F3DE-V65B>].

73. A 2016 patent owned by Amazon seeks to create an “[a]irborne fulfillment center utilizing unmanned aerial vehicles for item delivery.” U.S. Patent No. 9,305,280 (filed Dec. 22, 2014).

to use drones for delivery services. Recently, a new record was set in long-distance drone delivery when a drone traveled ninety-seven miles from a central urban Texas location to Austin, Texas.⁷⁴

While this longevity technology seems inevitable, existing commercially available drones can only stay in the air for approximately 20–30 minutes at a time.⁷⁵ Furthermore, a drone's battery life and flight time are not always synonymous. For example, one commercially available drone has a battery life of 50–70 minutes, but can only stay in the air for roughly 6–8 minutes at a time.⁷⁶ Notwithstanding these current limitations, companies are developing commercial drones that may run on gasoline or more advanced batteries for longer flight times.⁷⁷ Hydrogen gas-fueled drones are also in the works, which could allow for commercial drones to fly for up to four hours at a time.⁷⁸ And while the average citizen will probably not be able to afford drones with a battery life of more than an hour any time soon, advancing technology may eventually bring even these long-flying drones into the hands of consumers.

Another technological advancement increasing how long a drone can stay aloft is the integration of solar panels.⁷⁹ Solar panels can be placed on fixed-wing drones,

74. *Record Set for Longest Drone Urban Package Delivery in the U.S.*, AERO NEWS NETWORK (May 12, 2017), <http://www.aero-news.net/index.cfm?do=main.textpost&id=17ef8dd8-a68b-483f-8c83-684dc6b1d3e9> [<https://perma.cc/J2V9-ZZJQ>]. This mission was especially noteworthy because the drone maintained cellular connectivity throughout the flight, which is a concern in the success of long-distance delivery services. *Id.*

75. See Douglas James, *14 Drones with the Best Flight Times [Professional and Hobby Grade]*, DRONES GLOBE (Oct. 24, 2017), <http://www.dronesglobe.com/guide/long-flight-time/> [<https://perma.cc/Z6WW-X269>]; 5 *Longest Flight Time Drones to Buy in 2016*, TDS, <http://www.topdronesforsale.org/longest-flight-time-drones/> [<https://perma.cc/8YKA-D4RT>].

76. See Jonathan, *10 Drones with the Best Flight Times [From \$30 to \$3000]*, DRONES GLOBE (Mar. 2, 2016), <https://web.archive.org/web/20160512175640/http://www.dronesglobe.com:80/guide/long-flight-time> [<https://perma.cc/GM9T-UGVW>].

77. Michael Belfiore, *Hybrid Power Could Let Drones Fly for Hours*, POPULAR MECHANICS (Apr. 3, 2015), <http://www.popularmechanics.com/flight/drones/a14804/top-flight-hybrid-drones/> [<https://perma.cc/2TW8-VCS4>]; see also Nidhi Goyal, *New Solar Powered Drones Will Remain Airborne for Years*, INDUSTRY TAP (Sept. 6, 2013), <http://industrytap.com/new-solar-powered-drones-will-remain-airborne-for-years/12492> [<https://perma.cc/T3ZJ-QWFQ>]. (describing how the Solara 50 has thousands of solar cells on its upper wing surface, enabling it to collect enough solar energy during the day to charge its batteries at night, allowing it to stay in the air for as long as five years).

78. Ben Coxworth, *Hydrogen-Powered Hycopter Quadcopter Could Fly for 4 Hours at a Time*, NEW ATLAS (May 19, 2015), <https://newatlas.com/horizon-energy-systems-hycopter-fuel-cell-drone/37585/> [<https://perma.cc/8N28-JQN5>].

79. The flight time of a drone with solar panels varies greatly on the weather and other relevant conditions. Calm and sunny weather are the optimum conditions for a solar-powered drone, and the endurance period can lower dramatically with increased winds and unfavorable weather. See Alan Phillips, *Solar Powered UAV Sets New Endurance Record with 81 Hour Flight*, DRONE LIFE (July 29, 2015), <http://dronelife.com/2015/07/29/solar-powered-uav-sets-new-endurance-record-with-81-hour-flight/> [<https://perma.cc/L2ZS-AEFY>].

which are typically used for land management, and topographical and mapping surveys.⁸⁰ As one of the leading solar companies has noted:

Although rotary wing UAVs allow precise maneuvering, fixed wing UAVs are more efficient in flight, can carry greater payloads such as sensors for longer on less power and are better suited for high-altitude and long endurance (HALE) missions. Fixed wing UAVs can benefit immensely from thin, lightweight and highly efficient solar cell technologies available today.⁸¹

Companies that use drone technology are similarly interested in drones with potentially indefinite flight time. For example, Google is currently trying to implement 5G connectivity on solar-powered drones.⁸² This technology would provide numerous benefits including constant GPS capabilities, and providing 5G connectivity to areas that may not have such a connection.⁸³ Additionally, mobile video surveillance would be able to be conducted without human support.⁸⁴ Similarly, Amazon's attempt to provide customers with thirty-minute deliveries via drones is sparking the demand for drones with longer endurance periods.⁸⁵

Other companies are using different technology to keep drones aloft indefinitely. For example, a company called CyPhy has developed a drone called Parc that is powered from the ground, and absent an interruption with this power, it can stay in

80. ALTADEVICES, SELECTING SOLAR TECHNOLOGY FOR FIXED WING UAVS 2 (2015), <https://www.altadevices.com/wp-content/uploads/2016/11/selecting-solar-for-uavs-whitepaper.pdf> [<https://perma.cc/8U86-7P9F>].

81. *Id.* at 1.

82. Joon Ian Wong, *Google's Reportedly Using Experimental Tech to Deliver 5G Internet from Solar-Powered Drones*, QUARTZ (Feb. 1, 2016), <http://qz.com/607042/googles-reportedly-using-experimental-tech-to-deliver-5g-internet-from-solar-powered-drones/> [<https://perma.cc/59W7-BG6M>].

83. NEXT GENERATION MOBILE NETWORKS, A DELIVERABLE BY THE NGMN ALLIANCE: NGMN 5G WHITE PAPER 18, 25 (2015), https://www.ngmn.org/fileadmin/ngmn/content/downloads/Technical/2015/NGMN_5G_White_Paper_V1_0.pdf [<https://perma.cc/Y9HU-77Q7>].

84. *Id.* at 15.

In the coming years, mobile video surveillance may evolve to be available on aircrafts, drones, cars, and safety and security personnel for monitoring houses/buildings, targeted areas, special events, etc. These applications will leverage automated analysis of the video footage, not requiring human support. While they will not present constraints on the battery life and often use medium/high-end devices, these applications require a highly reliable and secure network with the right performance and instant interaction with back-end and remote systems.

Id. at 16.

85. Brian Sullivan, *Look! Up in the Sky!: Courts Must Decide Whether New High-Tech Toys Can Also Be Targets*, 102 ABA J. 71, 71 (Mar. 2016) (“Online retailer Amazon has announced its intention to begin making 30-minute deliveries via drones.”).

the air as long as the user wants.⁸⁶ This drone uses an Ethernet connection to transmit data and maintain power in the air.⁸⁷ More specifically,

The PARC system provides high quality, full frame rate, unbroken, High Definition video that no other small or micro UAS can match. The PARC system can accept power input from a variety of ac and dc sources, making it viable for many applications. And because the PARC vehicle is powered from the ground, the flight duration is not limited by battery life. In the event of a power interruption or microfilament failure, the PARC vehicle has an on-board backup battery that will allow the vehicle to safely and autonomously return to its launch site.⁸⁸

According to a press release by the company, the United States Army has recently placed an order for the PARC drones.⁸⁹

Other companies have designed high endurance drones specifically for military purposes.⁹⁰ Israel Aerospace Industries designed a drone that can stay afloat for forty-five hours called the Heron.⁹¹ AeroVironment has developed a liquid hydrogen-fueled drone that can stay up in the air for five days, or 168 hours.⁹² ADCOM Systems has drones that can stay aloft for 120 hours at a time.⁹³ General Atomics Aeronautical designed one of the most used and famous drones for military use; it has a maximum altitude of 50,000 feet and can stay in the air for twenty-seven hours.⁹⁴ These long-endurance drones are regularly used to track targets for extended

86. *Parc*, CyPHY, <http://cyphyworks.com/parc/> [<https://perma.cc/A6Q9-8NTY>].

87. Chloe Olewitz, *Thanks to an Ultralight Power Tether, This Surveillance Drone Can Stay Aloft Forever*, DIGITAL TRENDS (Nov. 10, 2015, 2:30 PM), <http://www.digitaltrends.com/cool-tech/eyes-in-air-perpetual-flight-surveillance-drone-never-lands/> [<https://perma.cc/8SUY-EJRR>].

88. *This Drone Measures Flight Time in Days Not Minutes*, DRONEVIBES (Feb. 14, 2016), <https://www.dronevibes.com/2016/02/14/this-drone-measures-flight-time-in-days-not-minutes/> [<https://perma.cc/76RL-GQD4>].

89. Press Release, CyPhy, *CyPhy Works Tethered Drone Ordered by the Army*, (July 18, 2016), <http://cyphyworks.com/news/2016/7/18/cyphy-works-tethered-drone-ordered-by-the-army> [<https://perma.cc/M4RA-L2LW>].

90. Michael W. Lewis & Emily Crawford, *Drones and Distinction: How IHL Encouraged the Rise of Drones*, 44 GEO. J. INT'L L. 1127, 1153–54 (2013) (“Drones’ exceptional endurance of approximately between twenty and thirty hours allowed for long loiter times over the target, which helped to accurately identify individual targets as well as to establish their patterns of movement.”).

91. Praveen Duddu, *The 10 Longest Ranged Unmanned Aerial Vehicles (UAVs)*, AIRFORCE TECH. (Nov. 19, 2013), <http://www.airforce-technology.com/features/featurethe-top-10-longest-range-unmanned-aerial-vehicles-uavs/> [<https://perma.cc/RDY6-BR4P>].

92. *Id.*

93. *Id.*

94. PREDATOR B: PERSISTENT MULTI-MISSION ISR, GENERAL ATOMICS AERONAUTICAL (2015), http://www.ga-asi.com/Websites/gaasi/images/products/aircraft_systems/pdf/Predator_B021915.pdf [<https://perma.cc/RM5C-KJU6>]. Different variations of this drone can stay aloft for up to forty-two hours. *Predator B RPA*, GENERAL ATOMICS AERONAUTICAL, <http://www.ga-asi.com/predator-b> [<https://perma.cc/K8LM-8SF2>]; Michael W. Lewis, *Drones and the Boundaries of the Battlefield*, 47 TEX. INT'L L.J. 293, 296–97 (2012)

periods of time. “A couple of drones can follow a potential target for days or even weeks at a time to create a ‘pattern of life’ analysis that assists in determining whether the target is engaged in hostile activities.”⁹⁵

In sum, the uses for drone technology are increasing in response to the amount of time a drone can stay aloft. From land management to military surveillance, drone technology affords individuals the ability to observe and utilize other technologies more easily, cheaply, and for longer periods of time.⁹⁶ In addition to their productive and benign uses, however, many of these technological advances and developments will increase the ability of drones to engage in surreptitious surveillance. For example, with “perch and stare” surveillance, a drone secures itself to a stationary vantage point and then powers down the propulsion mechanism.⁹⁷ In doing so, the “persistence of surveillance” can be greatly extended because lack of movement

(“Operationally, drones provide a couple of significant advantages over manned aircraft that make them particularly valuable in certain types of modern armed conflicts. Their biggest advantage is their very long endurance: over thirty hours for the Predator B and twenty hours for the Predator C (Avenger).”)

95. Michael W. Lewis, *Clearing the Air: The Real Reason Why Drones are the Weapon of Choice in Counterterrorism and Why that is a Good Thing for Civilians*, 14 *ENGAGE: J. FEDERALIST SOC’Y PRAC. GROUPS*, Oct. 2013, at 50, 50.

96. Gregory S. McNeal, *Drones and the Future of Aerial Surveillance*, 84 *GEO. WASH. L. REV.* 354, 406 (2016). The abstract of the article states:

For the first time in American history a regulatory regime is about to allow for small aircraft without onboard pilots—drones—to fly in the national airspace. Legal and technological developments have thus made it all but certain that drones will be a catalyst for new ways of thinking about privacy and surveillance Thus, the battle over privacy and aerial surveillance will be fought in statehouses throughout the country. This Article seeks to frame future discussions about how states will handle the privacy issues associated with aerial surveillance.

The Article takes the counterintuitive position that technology has the potential to make unmanned aerial surveillance more protective of privacy than manned surveillance. It further argues that scholars and legislators should move beyond a warrant-based, technology centric approach to protecting privacy from aerial surveillance. Such an approach is unworkable, counterproductive, and may stifle efforts to enact more privacy protective legislative regimes. Instead, this Article proposes that legal reforms should focus on excluding low altitude flights and surveillance coupled with imposing limits on persistent surveillance, requiring enhanced accountability procedures for data retention and access, and creating new transparency, accountability and oversight measures.

Id. at 354.

97. Timothy T. Takahashi, *Drones and Privacy*, 14 *COLUM. SCI. & TECH. L. REV.* 72, 86 (2012).

increases battery life.⁹⁸ The drones utilizing perch and stare surveillance may be equipped with acoustical eavesdropping devices or laser optical microphones.⁹⁹

Because of their various sizes and altitude capacity, drones can fly undetected through a variety of environments. There are drones, for example, which have a wingspan of over 130 feet and weigh sixteen tons.¹⁰⁰ There are also drones the size of insects,¹⁰¹ or hummingbirds,¹⁰² which can move about unobserved. It is these smaller drones with the potential to fly undetected for long periods of time and mask their appearance that pose some of the largest threats to individual privacy.

Potential privacy concerns also increase once these drones are equipped with high-resolution cameras so that they can show detail imaging of “high resolution picture and video, peering inside high level windows, and through solid barriers, such as fences, trees, and even walls.”¹⁰³ Moreover, given that the pictures and video from these high resolution cameras can be transmitted in *real time* to the individual controlling the drone, the potential for intrusion of privacy becomes significantly greater.¹⁰⁴

The ever-advancing capabilities in drones along with the technology equipped to them implicate privacy concerns.¹⁰⁵ As I discuss in the next Section, the current FAA regulations and federal law fail to protect citizens from the inevitable privacy intrusions when more drones take flight.

98. *Id.*; see also Jonathan Olivito, *Beyond the Fourth Amendment: Limiting Drone Surveillance Through the Constitutional Right to Informational Privacy*, 74 OHIO ST. L. J. 669, 677 n.52 (2013) (noting that the “concept behind ‘perch-and-stare’ surveillance is to ‘avoid energy-intensive moving or hovering flight by securing itself to a vantage point and turning off its propulsion mechanism.’” (quoting Takahashi, *supra* note 97, at 86)).

99. Olivito, *supra* note 98, at 677; see also Takahashi, *supra* note 97, at 88 (“Acoustical systems function by day and by night while laser systems function on wavelengths not easily visible to humans. No physical trespass is necessary to record the sounds from inside a structure. The usable range of these devices may approach 1000 feet . . .” (internal citations omitted)).

100. *RQ-4 Global Hawk*, U.S. AIR FORCE (Oct. 27, 2014), <http://www.af.mil/About-Us/Fact-Sheets/Display/Article/104516/rq-4-global-hawk/> [<https://perma.cc/328Q-MGAK>].

101. THOMPSON, *supra* note 33, at 2.

102. Philip J. Hiltner, Comment, *The Drones Are Coming: Use of Unmanned Aerial Vehicles for Police Surveillance and Its Fourth Amendment Implications*, 3 WAKE FOREST J.L. & POL’Y 397, 400–01 (2013) (exploring numerous UAS capabilities); see also John Van Geffen, *Unmanned and Unafraid—Unmanned Aerial Vehicles in the National Airspace System*, UPCOUNSEL BLOG (Nov. 11, 2013), <http://blog.upcounsel.com/unmanned-and-unafraid-unmanned-aerial-vehicles-in-the-national-airspace-system> [<https://perma.cc/EMD2-AQNQ>].

103. *EPIC v. FAA: Challenging the FAA’s Failure to Establish Drone Privacy Rules*, ELECTRONIC PRIVACY INFO. CTR., <http://epic.org/privacy/litigation/apa/faq/drones> [<https://perma.cc/E5SZ-6JCQ>].

104. Villasenor, *supra* note 43, at 464.

105. “Drone technology is developing so quickly—and morphing into commercial uses never before contemplated—that aviation regulators are having trouble keeping pace.” Andy Pasztor & Robert Wall, *Drone Regulators Struggle to Keep Up with the Rapidly Growing Technology*, WALL ST. J. (July 10, 2016, 7:52 PM), <https://www.wsj.com/articles/drone-regulators-struggle-to-keep-up-with-the-rapidly-growing-technology-1468202371> [<https://perma.cc/7PCJ-NRE8>].

B. UAV Regulation

The Federal Aviation Administration (FAA) was first established by Congress in 1958 as part of the Federal Aviation Act.¹⁰⁶ The primary purpose of the FAA was to provide safe, efficient use of the national airspace by civilian aircraft.¹⁰⁷ In accordance with the Federal Aviation Administration Modernization and Reform Act (FMRA), in 2012, Congress mandated the FAA to regulate aircraft operations conducted in the National Air Space¹⁰⁸ and to promote safe flight of civil aircraft in air commerce.¹⁰⁹ Moreover, Congress defined “aircraft” as “any contrivance invented, used, or designed to navigate, or fly in, the air.”¹¹⁰ According to FAA guidance, because a drone is a “contrivance/device that is invented, used, and designed to fly in the air, it meets the definition of ‘aircraft’”¹¹¹ and is therefore subject to FMRA’s mandate.

The FAA’s existing drone regulations vary based on the user’s purpose: for recreation or for work.¹¹² Recreational operators must follow certain requirements and are limited in how they can utilize their drone. Regulations classify most recreational drones as model aircrafts. A drone is considered a model aircraft if it is “capable of sustained flight in the atmosphere[; it i]s flown within visual line-of-sight of the person operating it[; and it i]s flown for hobby or recreational purposes.”¹¹³ Further, to be registered for recreational purposes, the drone must weigh less than fifty-five pounds.¹¹⁴ The operator must register as a “modeler” and mark the drone with the registration number.¹¹⁵

106. Federal Aviation Act of 1958, Pub. L. No. 85-726, 72 Stat. 731 (current version at General Aviation Revitalization Act of 1994, Pub. L. No. 103-298, 108 Stat. 1552).

107. “Our continuing mission is to provide the safest, most efficient aerospace system in the world.” *Mission*, FED. AVIATION ADMIN. (Apr. 23, 2010, 9:37 AM), <https://www.faa.gov/about/mission/> [<https://perma.cc/UUF9-YQTP>]; see also *A Brief History of the FAA*, FED. AVIATION ADMIN. (Jan. 4, 2017, 4:42 PM), http://www.faa.gov/about/history/brief_history/#origins [<https://perma.cc/TRC3-E7KF>].

108. 49 U.S.C. § 40103 (2012). The National Air Space is “[t]he common network of U.S. airspace; air navigation facilities, equipment and services, airports or landing areas Included are system components shared jointly with the military.” FED. AVIATION ADMIN., PILOT/CONTROLLER GLOSSARY PCG N-1 (2014), https://www.faa.gov/air_traffic/publications/media/pcg_4-03-14.pdf [<https://perma.cc/JS42-7PTV>].

109. 49 U.S.C. § 44701(a) (2012); see also Olivito, *supra* note 98, at 671.

110. 49 U.S.C. § 40102(a)(6) (2012).

111. FED. AVIATION ADMIN., LAW ENFORCEMENT GUIDANCE FOR SUSPECTED UNAUTHORIZED UAS OPERATIONS 2 (2016).

112. *Getting Started*, FED. AVIATION ADMIN. (Oct. 18, 2018, 4:38 PM), https://www.faa.gov/uas/getting_started/ [<https://perma.cc/JS42-7PTV>].

113. *Frequently Asked Questions: Is a UAS the Same As a Model Aircraft?*, FED. AVIATION ADMIN. (Dec. 10, 2018, 11:28 AM), https://faa.custhelp.com/app/answers/detail/a_id/737/kw/General%20UAS%20or%20Drone%20Questions [<https://perma.cc/J7ZH-UTAQ>].

114. *FAA Drone Zone*, FED. AVIATION ADMIN., <https://faadronezone.faa.gov/#> [<https://perma.cc/B95L-397Y>].

115. See *Recreational Fliers & Modeler Community-Based Organizations*, FED. AVIATION ADMIN. (Dec. 12, 2018, 3:42 PM), https://www.faa.gov/uas/getting_started/model_aircraft/ [<https://perma.cc/GH3D-3MLL>].

In an effort to assist hobbyist and recreational drone users, the FAA released an application called B4UFLY.¹¹⁶ “B4UFLY is a free, easy-to-use smartphone app that helps drone operators learn where they can and can’t fly.”¹¹⁷ The application purportedly updates in real time, showing permanent flight restriction locations and temporary restrictions over wildfires.¹¹⁸ However, the application is voluntary, and while the FAA encourages users to send their flight information through the application, there is no requirement to do so.¹¹⁹

While the FAA attempted to regulate domestic drone use by implementing this registration process, the D.C. Circuit Court created a major roadblock by striking down the FAA’s rule requiring model aircrafts to be registered.¹²⁰ The court found that under FRMA, the FAA may not promulgate any rule regarding model aircrafts.¹²¹ As the court stated, “the Registration Rule is unlawful to the extent that it applies to model aircraft.”¹²²

Approximately every three months, the FAA releases updated sighting reports, averaging about 100 reports of sightings a month.¹²³ Many of the sightings include drones flying in restricted areas like near airports, and these users may be subject to fines and criminal charges by the FAA.¹²⁴ While this data may be helpful in assisting the FAA or local officials in holding these users accountable, most of the reports are made by pilots or other individuals involved in an air-space-related career, with little detail, and likely not immediately.¹²⁵

Moreover, operators using drones for commercial purposes must conform to other requirements. Drones not registered as model aircrafts, must be registered under 14 C.F.R. part 107 (“part 107”).¹²⁶ Pursuant to part 107, the drone must weigh less than 55 pounds, fly at or below 400 feet, fly at or under 100 mph, remain within visual line of sight, and may not fly directly over people or be flown out of a moving vehicle.¹²⁷ In June 2016, the FAA released operational rules for “routine commercial

116. *B4UFLY Mobile App*, FED. AVIATION ADMIN. (Nov. 30, 2018, 9:51 AM), https://www.faa.gov/uas/where_to_fly/b4ufly/ [https://perma.cc/2SGD-GEWE].

117. *Id.*

118. *See id.*

119. *B4UFLY General Questions & Answers*, FED. AVIATION ADMIN., https://www.faa.gov/uas/recreational_fliers/where_can_i_fly/b4ufly/media/UAS_B4UFLY_QandA.pdf [https://perma.cc/NA6Z-2ZXF].

120. *Taylor v. Huerta*, 856 F.3d 1089 (D.C. Cir. 2017).

121. *Id.*; *see* FAA Modernization and Reform Act of 2012, Pub. L. No. 112–95, 126 Stat. 11, 77 (2012) (codified as amended in scattered sections of 49 U.S.C.).

122. *Taylor*, 856 F.3d at 1092.

123. FED. AVIATION ADMIN., UAS SIGHTINGS REPORT (2018), https://www.faa.gov/uas/resources/public_records/uas_sightings_report/ [https://perma.cc/TZ36-VXW9].

124. *Id.*

125. *See, e.g.*, FED. AVIATION ADMIN., REPORTED UAS SIGHTINGS (JULY 2016-SEPT. 2016) (2017).

126. *Certificated Remote Pilots Including Commercial Operators*, FED. AVIATION ADMIN. (Dec. 18, 2018, 4:32 PM), https://www.faa.gov/uas/getting_started/part_107/ [https://perma.cc/A4NJ-A5AA].

127. FED. AVIATION ADMIN., SUMMARY OF SMALL UNMANNED AIRCRAFT RULE (PART 107) (2016) https://www.faa.gov/uas/media/Part_107_Summary.pdf [https://perma.cc/D8ZB-765D].

use of small” drones.¹²⁸ These rules “are designed to minimize risks to other aircraft and people and property on the ground.”¹²⁹ The rules require the operator of the drone to have a “remote pilot certificate with a small UAS rating.”¹³⁰

One of the major impediments to the use of drones is the complicated legal balance between FAA regulations and state laws. While the FAA’s control of registration, location restrictions, and restrictions related to safety may reign supreme over state laws, states are tasked with creating laws that protect the nondrone user on the ground, while not interfering with federal regulations. Significantly, the FAA has stated that although its rules “[do] not specifically deal with privacy issues in the use of drones, and the FAA does not regulate how UAS gather data on people or property, the FAA is acting to address privacy considerations in this area.”¹³¹ It then encourages “all UAS pilots to check local and state laws before gathering information through remote sensing technology or photography.”¹³² Therefore, until the FAA explicitly addresses privacy in its regulations, state statutes and common law will provide the only guidance for privacy causes of action. These laws are discussed in the next (two) Parts.

II. COMMON LAW TORTS AND PRIVACY

A. A Right to Privacy

Every state now recognizes the common law right to privacy in some fashion.¹³³ The earliest pronounced discussion of a legal right to privacy by an appellate court is found in *De May v. Roberts*,¹³⁴ where the Michigan Supreme Court granted a woman’s request for tort relief when, without her consent, the defendant observed her giving birth to her child.¹³⁵ The court found that the woman had “a legal right to the privacy of her apartment at such a time, and the law secures to her this right by requiring others to observe it, and to abstain from its violation.”¹³⁶

In 1890, Samuel D. Warren and Louis D. Brandeis, both private attorneys at the time, published *The Right to Privacy*.¹³⁷ Often considered the most important and influential article ever published,¹³⁸ most scholars generally agree that the article

128. Press Release, Fed. Aviation Admin., DOT and FAA Finalize Rules for Small Unmanned Aircraft Systems (June 21, 2016), https://www.faa.gov/news/press_releases/news_story.cfm?newsId=20515 [<https://perma.cc/BH7R-63NF>].

129. *Id.*

130. *Id.* If the operator does not have a certificate, he or she may be “directly supervised by someone with such a certificate.” *Id.*

131. *Id.*

132. *Id.*

133. See TURKINGTON & ALLEN, *supra* note 30, at 24–25.

134. *Id.* at 23.

135. 9 N.W. 146 (Mich. 1881).

136. *Id.* at 149.

137. Warren & Brandeis, *supra* note 1.

138. Kalven, *supra* note 29, at 327 (Warren and Brandeis’ *The Right to Privacy* is the “most influential law review article of all.”); Turkington, *supra* note 29, at 481 (“It is likely that *The Right to Privacy* has had as much impact on the development of law as any single publication in legal periodicals.”); see also MCCARTHY, *supra* note 28, at 16–21; Prosser, *supra* note 2, at

precipitated the development of common law privacy torts.¹³⁹ Prior to the publication of the article, no English or American court had granted relief expressly based upon the invasion of privacy.¹⁴⁰

In one prescient passage, Warren and Brandeis lamented the invention of cameras specifically because of the ability to take “instantaneous photographs”¹⁴¹ and thereby to “invade[] the sacred precincts of private and domestic life.”¹⁴² Warren and Brandeis concerned themselves with the “numerous mechanical devices [that] threaten to make good the prediction that ‘what is whispered in the closet shall be proclaimed from the house-tops.’”¹⁴³

Despite widespread recognition of the importance of Warren and Brandeis’ landmark article, a right of action for privacy was not widely recognized¹⁴⁴ in any state until 1903, when the New York state legislature enacted a statute recognizing a right to privacy in the use of one’s image:

Any person whose name, portrait, picture or voice is used within this state for advertising purposes or for the purposes of trade without . . . written consent . . . may maintain an equitable action . . . to prevent and restrain the use thereof; and may also sue and recover damages for any injuries sustained by reason of such use¹⁴⁵

The enactment of the New York state privacy statute was largely in response to the public condemnation of the New York Court of Appeals’s refusal to recognize such a tort in *Roberson v. Rochester Folding Box Co.*¹⁴⁶ In *Roberson*, a milling

383.

139. *Howard v. Antilla*, 294 F.3d 244, 247–48 (1st Cir. 2002) (“It is rare that the pedigree of a whole breed of common law tort claims can be traced with pinpoint accuracy,” such as in the case of the privacy torts.)

140. *See id.* at 247–48 (“But in the case of common law claims for invasion of the right of privacy, most sources agree that the broad contours of these legal theories were first outlined” in *The Right to Privacy*); *see also* *Roberson v. Rochester Folding Box Co.*, 64 N.E. 442 (N.Y. 1902).

141. Warren & Brandeis, *supra* note 1, at 195–96. The “instantaneous photographs” refers to advances in photography that took place in the 1880s that allowed for an individual to take snapshots. Prior to this point, it would take several minutes to take a photograph, with the individual sitting still the entire time. TURKINGTON & ALLEN, *supra* note 30, at 45; WESTIN, *supra* note 30, at 338. The telephone, microphone, and digital recorder, with ability to tap telephone lines were also invented/developed in the later decades of the nineteenth century. TURKINGTON & ALLEN, *supra* note 30, at 45.

142. Warren & Brandeis, *supra* note 1, at 195.

143. *Id.*

144. For a brief discussion of the British common law cases relied upon by Brandeis and Warren in their seminal *Privacy* article, see *Roberson*, 64 N.E. at 444–45, 447 (“An examination of the authorities leads us to the conclusion that the so-called ‘right of privacy’ has not as yet found an abiding place in our jurisprudence, and, as we view it, the doctrine cannot now be incorporated without doing violence to settled principles of law.”)

145. N.Y. CIV. RIGHTS LAW § 51 (McKinney 2009).

146. 64 N.E. at 447–48; *see* Neil M. Richards & Daniel J. Solove, *Prosser’s Privacy Law: A Mixed Legacy*, 98 CALIF. L. REV. 1887, 1892–93 (2010) (describing the “popular outcry” against *Roberson* that led to the New York State Legislature’s enactment of the right to

company appropriated a picture of the plaintiff as part of an advertisement for its flour.¹⁴⁷ The milling company printed out twenty-five thousand copies of the plaintiff's picture for the advertisement, which it then "conspicuously posted and displayed in stores, warehouses, saloons, and other public places."¹⁴⁸

The *Roberson* court divided four to three in its decision not to recognize a cause of action for the legal right of privacy.¹⁴⁹ Although the majority purportedly based its opinion on a lack of legal precedent recognizing a right to privacy absent a property right, Chief Judge Parker, who authored the opinion, implied that the plaintiff was making too much over the use of her photo, noting:

Such publicity, which some find agreeable, is to plaintiff very distasteful, and thus, because of defendants' impertinence in using her picture, without her consent, for their own business purposes, she has been caused to suffer mental distress *where others would have appreciated the compliment to their beauty implied in the selection of the picture for such purposes*.¹⁵⁰

Judge Gray, on behalf of himself and two other judges, wrote a scathing dissent, finding the majority's position that there was no basis for a right to privacy in the case

an inconceivable one that these defendants may, unauthorizedly, use the likeness of this young woman upon their advertisement as a method of attracting widespread public attention to their wares, and that she must submit to the mortifying notoriety, without right to invoke the exercise of the preventive power of a court of equity.¹⁵¹

It is against this backdrop that, two years later, the Supreme Court of Georgia recognized a common law right of privacy in *Pavesich v. New England Life Insurance Co.*¹⁵² *Pavesich*, the first major court case to recognize a right to privacy,¹⁵³ was largely seen as a rebuke of the majority opinion in *Roberson*. In *Pavesich*, the defendant appropriated a picture of the plaintiff for its advertising campaign, adding a quote to the advertisement stating that plaintiff had bought life insurance from the defendant.¹⁵⁴ Plaintiff had neither consented to the use of his photo nor had he purchased life insurance from the defendant.¹⁵⁵ The court held that

privacy statute); *see also* *Gautier v. Pro-Football, Inc.*, 107 N.E.2d 485, 487 (N.Y. 1952) (stating that as the *Roberson* case shows, "the statute was born of the need to protect the individual from selfish, commercial exploitation of his personality").

147. *Roberson*, 64 N.E. at 442.

148. *Id.*

149. *Id.* at 451.

150. *Id.* at 443 (emphasis added).

151. *Id.* at 450 (Gray, J., dissenting).

152. 50 S.E. 68 (Ga. 1905).

153. PETER B KUTNER & OSBORNE M. REYNOLDS, JR., *ADVANCED TORTS* 390 (4th ed. 2013).

154. 50 S.E. at 68.

155. *Id.*

publishing an individual's picture without his consent as part of an advertisement for a business violated the individual's right to privacy.¹⁵⁶

In 1960, seventy years after the seminal Warren and Brandeis *The Right to Privacy* article,¹⁵⁷ Professor William Prosser published a groundbreaking article on the common law privacy torts.¹⁵⁸ Prosser delineated over 300 appellate court cases addressing tort aspects of privacy law.¹⁵⁹ These cases, however, were primarily common law cases involving such issues as nuisance, trespass, and the right to be let alone.¹⁶⁰ Prosser sought to categorize the tort claims into four distinct torts each describing an invasion of a different privacy interest, but otherwise having "almost nothing in common except that each represents an interference with the right of the plaintiff, in the phrase coined by Judge Cooley, 'to be let alone.'"¹⁶¹ He proposed four separate and distinct torts that were to be considered the "right to privacy" torts,¹⁶² summarized as: "(1) intrusion upon a plaintiff's seclusion or solitude, (2) appropriation of the plaintiff's name or likeness, (3) public disclosure or embarrassing of a plaintiff's private facts, and (4) publicity placing plaintiff in false light in the public eye."¹⁶³ The torts were later codified into the Restatement (Second) of Torts¹⁶⁴ and collectively referred to as "the right to be let alone": (1) intrusion upon seclusion; (2) public disclosure of private facts; (3) false light; and (4) appropriation.¹⁶⁵

Individuals who believe a drone has violated their "right to be let alone" will most likely bring an action against the operator for intrusion upon seclusion. Because this tort does not require a physical intrusion to be actionable¹⁶⁶ or actual dissemination of information, as discussed below, this tort will most commonly apply when a drone operator interferes with an individual's privacy rights.

156. *Id.* See generally Annotation, Invasion of Privacy by Use of Plaintiff's Name or Likeness in Advertising, 23 A.L.R.3d 865, 873 (1969) (indexing "cases arising under statutes which specifically give a person whose name or picture is used for advertising purposes a right of action for invasion of privacy, as well as cases arising in those jurisdictions where the right of privacy is recognized as applying to all unauthorized uses of a person's name or picture").

157. Warren & Brandeis, *supra* note 1.

158. DANIEL J. SOLOVE & PAUL M. SCHWARTZ, PRIVACY, INFORMATION AND TECHNOLOGY 27 (3d ed. 2011); Prosser, *supra* note 2, at 383.

159. Prosser, *supra* note 2, at 388–89.

160. See *id.* at 389–92.

161. *Id.* at 389.

162. *Id.*

163. Tigran Palyan, Comment, *Common Law Privacy in a Not So Common World: Prospects for the Tort of Intrusion upon Seclusion in Virtual Worlds*, 38 SW. L. REV. 167, 171 (2008).

164. RESTATEMENT (SECOND) OF TORTS §§ 652A–652E (AM. LAW INST. 1977) (for which Prosser acted as reporter).

165. Palyan, *supra* note 163, at 171.

166. See RESTATEMENT (SECOND) OF TORTS § 652B cmt. b (AM. LAW INST. 1977). The tort may be committed through "the use of the defendant's senses, with or without mechanical aids, to oversee or overhear the plaintiff's private affairs, as by looking into his upstairs windows with binoculars . . ." *Id.*

B. Intrusion upon Seclusion

According to the Restatement (Second) of Torts section 652B, intrusion into a plaintiff's "solitude or seclusion" or "[i]ntrusion upon seclusion" as it has become more commonly known,¹⁶⁷ occurs when "[o]ne who intentionally intrudes, physically or otherwise, upon the solitude or seclusion of another or his private affairs or concerns, is subject to liability to the other for invasion of his privacy, if the intrusion would be highly offensive to a reasonable person."¹⁶⁸ Section 652B comment (b) to the Restatement distinguishes those intrusions it describes as "physical" and those it categorizes as "otherwise."¹⁶⁹

Courts first established liability for invasion of privacy in cases where devices were installed to listen to private conversations. For example, liability for invasion of privacy was found when a listening device was placed in a person's home.¹⁷⁰ On the other hand, installing a listening device in an area of an employer's premises where there is no reasonable expectation of privacy was not actionable.¹⁷¹ Similarly, courts have often found liability for intrusion upon seclusion when a hidden camera has been installed in an individual's home. This has been the case even when one spouse has installed a hidden camera into his or her own bedroom to record the other spouse's sexual activities in the bedroom.¹⁷²

167. All states except North Dakota and Wyoming have recognized the tort of intrusion upon seclusion. ROBERT M. O'NEIL, *THE FIRST AMENDMENT AND CIVIL LIABILITY* 77 (2001); Palyan, *supra* note 163, at 180 n.106; *see* *Hougum v. Valley Mem'l Homes*, 574 N.W.2d 812, 816 (N.D. 1998) (discussing the fact that the Supreme Court of North Dakota had not determined whether a right to privacy tort exists in North Dakota); *Jewell v. N. Big Horn Hosp. Dist.*, 953 P.2d 135, 139–140 (Wyo. 1998).

168. RESTATEMENT (SECOND) OF TORTS § 652B (AM. LAW INST. 1977). For example, the types of intrusions that have been recognized under the tort of intrusion upon seclusion include "physically invading a person's home or other private place, eavesdropping by wiretapping or microphones, peering through windows, persistent telephoning, unauthorized prying into a bank account, and opening personal mail of another." *Toomer v. Garrett*, 574 S.E.2d 76, 90 (N.C. Ct. App. 2002) (quoting *Hall v. Post*, 355 S.E.2d 819, 823 (N.C. Ct. App. 1987), *reversed on other grounds*, 372 S.E.2d 711 (N.C. 1988)). That said, some states have construed the intrusion upon seclusion tort more narrowly. *See* *Creel v. I.C.E. & Associates, Inc.*, 771 N.E.2d 1276, 1280 (Ind. Ct. App. 2002) (describing how "Indiana courts have narrowly construed the tort of invasion of privacy by intrusion").

169. RESTATEMENT (SECOND) OF TORTS § 652 cmt. b (AM. LAW INST. 1977).

170. *E.g.*, *Roach v. Harper*, 105 S.E.2d 564 (W. Va. 1958) (finding landlord liable for installing a listening device in tenant's apartment and listening into conversations). *But see* *Smith v. Cincinnati Post & Times-Star*, 475 F.2d 740 (6th Cir. 1973); *Chaplin v. Nat'l Broad. Co.*, 15 F.R.D. 134 (S.D.N.Y. 1953).

171. *Kemp v. Block*, 607 F. Supp. 1262 (D. Nev. 1985); *Elmore v. Atlantic Zayre, Inc.*, 341 S.E.2d 905 (Ga. App. 1986) (intrusion not actionable when store employees viewed a restroom through a ceiling crack because they suspected a customer was engaging in criminal activity in the restroom). *But see* *Koeppel v. Speirs*, 808 N.W.2d 177 (Iowa 2011) (holding the installation of camera in an office restroom was actionable, given the heightened expectation of privacy in a restroom).

172. *In re Marriage of Tigges*, 758 N.W.2d 824 (Iowa 2008); *Miller v. Brooks*, 472 S.E.2d 350 (N.C. App. 1996).

Courts have interpreted [Restatement (Second) of Torts] § 652B [as] requir[ing] a plaintiff to prove (1) an intentional intrusion into a private place, conversation, or matter (2) in a manner highly offensive to a reasonable person. To prevail on the first prong, the plaintiff must show (a) an actual, subjective expectation of seclusion or solitude in the place, conversation, or matter, and (b) that the expectation was objectively reasonable.¹⁷³

Thus, a plaintiff must prove two elements: the plaintiff had a reasonable expectation of privacy, and the intrusion would be highly offensive to a reasonable person.

The invasion may be by physical intrusion into a place in which the plaintiff has secluded himself, as when the defendant forces his way into the plaintiff's room in a hotel or insists over the plaintiff's objection in entering his home. It may also be by the use of the defendant's senses, with or without mechanical aids, to oversee or overhear the plaintiff's private affairs, as by looking into his upstairs windows with binoculars or tapping his telephone wires. It may be by some other form of investigation or examination into his private concerns, as by opening his private and personal mail, searching his safe or his wallet, examining his private bank account, or compelling him by a forged court order to permit an inspection of his personal documents. The intrusion itself makes the defendant subject to liability, even though there is no publication or other use of any kind of the photograph or information outlined.¹⁷⁴

Moreover, information does not need to be acquired to maintain an intrusion upon seclusion cause of action.¹⁷⁵ In fact, liability for intrusion upon seclusion "has nothing to do with the content of the information discovered."¹⁷⁶ The interest the intrusion upon seclusion tort protects is "the right to respite from observation and judgment so that, when we do participate socially, we can be more engaged and ethical participants."¹⁷⁷ Therefore, intrusion upon seclusion is "the quintessential example of a restriction on observation."¹⁷⁸ However, and as discussed in the next Section, the intrusion upon seclusion tort has been limited in its protection of privacy by requiring plaintiffs to have an actual subjective expectation of privacy that is also objectively reasonable.¹⁷⁹

173. *Med. Lab. Mgmt. Consultants v. Am. Broad. Cos.*, 306 F.3d 806, 812–13, 819 (9th Cir. 2002) (internal citations omitted) (finding that the "covert videotaping of a business conversation among strangers in business offices does not rise to the level of an exceptional prying into another's private affairs, which the Restatement's illustrations indicate is required for 'offensiveness'").

174. RESTATEMENT (SECOND) OF TORTS § 652B cmt. b (AM. LAW INST. 1977).

175. *Phillips v. Smalley Maint. Servs.*, 435 So. 2d 705, 709 (Ala. 1983) (citing cases that have held that information does not need to be acquired to maintain the cause of action); see Jane Yakowitz Bambauer, *The New Intrusion*, 88 NOTRE DAME L. REV. 205, 206 (2012).

176. Bambauer, *supra* note 175.

177. *Id.*

178. *Id.* at 209.

179. *Med. Lab. Mgmt. Consultants v. Am. Broad. Cos., Inc.*, 306 F.3d 806, 812–13 (9th Cir. 2002); *PETA v. Bobby Berosini, Ltd.*, 895 P.2d 1269, 1279 (Nev. 1995).

1. Reasonable Expectation of Privacy

For purposes of the intrusion tort, privacy “must be evaluated with respect to the identity of the alleged intruder and the nature of the intrusion.”¹⁸⁰ In determining whether one has a reasonable expectation of privacy, courts weigh various considerations including the location,¹⁸¹ time of day,¹⁸² relationship between the observer and the observed, etc.¹⁸³ of the intrusion.

Surveillance of an individual in the confines of the individual’s home constitutes an intrusion upon seclusion cause of action.¹⁸⁴ Courts, however, are divided on whether the mere installation of recording technology in inherently private places constitutes an intrusion. Some courts have held that, in inherently private places—one’s bedroom or the restroom—plaintiffs need not prove that a tortfeasor using technology to intrude actually listened or watched personally for an actionable claim.¹⁸⁵ The mere installation of recording technology constitutes an intrusion in such intimate places.¹⁸⁶ Other courts have held that to establish an intrusion claim, the defendant must have heard or observed another’s private activities using the installed technology for an actionable intrusion.¹⁸⁷ Additionally, individuals have a

180. *Sanders v. Am. Broad. Cos.*, 978 P.2d 67, 73 (Cal. 1999).

181. *Shulman v. Group W Prods., Inc.*, 955 P.2d 469, 490 (Cal. 1998) (noting that in evaluating an intrusion on seclusion claim, the court first asks “whether defendants ‘intentionally intrude[d], physically or otherwise, upon the solitude or seclusion of another,’ that is, into a place or conversation private to [the parties]”).

182. *Pittman v. J.J. Mac Intyre Co. of Nev.*, 969 F. Supp. 609, 614 (D. Nev. 1997) (finding that an employee had a reasonable expectation of privacy at work during working hours).

183. *See Miller v. Brooks*, 472 S.E.2d 350, 355 (N.C. App. 1996) (finding “a person’s reasonable expectation of privacy might, in some cases, be less for married persons than for single persons”); *see also Shulman*, 955 P.2d at 491–92 (“A patient’s conversation with a provider of medical care in the course of treatment, including emergency treatment, carries a traditional and legally well-established expectation of privacy.”).

184. *See, e.g., Wolfson v. Lewis*, 924 F. Supp. 1413, 1417–18 (E.D. Pa. 1996).

185. *See, e.g., Koepfel v. Speirs*, 808 N.W.2d 177 (Iowa 2011) (finding defendant liable for installing a camera in an office bathroom provided the camera could have been operated when plaintiff used the restroom, regardless of whether defendant viewed the camera images or not); *Harkey v. Abate*, 346 N.W.2d 74 (Mich. Ct. App. 1983) (holding that proof defendant observed plaintiffs when defendant had installed see-through panels in ceiling of restroom is relevant to the question of damages, but it is not fatal to the plaintiff’s case); *Hamberger v. Eastman*, 206 A.2d 239 (N.H. 1964) (finding that the plaintiffs were not required to prove the defendant overheard or viewed the activities in a secluded place to show an intrusion occurred when the landlord-defendant installed a recording device in the plaintiffs’ bedroom).

186. *Koepfel*, 808 N.W.2d at 184.

187. *See, e.g., Marks v. Bell Tel. Co.*, 331 A.2d 424, 431 (Pa. 1975) (finding no cause of action for intrusion upon seclusion because no evidence was presented that anyone had ever listened to the recorded conversations).

reasonable expectation of privacy at their place of work as to certain intrusions,¹⁸⁸ such as phone calls from debt collectors.¹⁸⁹

While individuals generally have a reasonable expectation of privacy from intrusions into their homes, there is a lesser expectation of privacy from being observed on one's property (outside the confines of the home).¹⁹⁰ Moreover, a successful intrusion upon seclusion claim is less likely when the intrusion occurs in public. An individual, generally, does not have an expectation of privacy regarding what is held out in public.¹⁹¹ However, "[a] person does not automatically make public everything he does merely by being in a public place."¹⁹² Thus, mere observations in public will not be actionable invasion of privacy, but under certain circumstances, "overzealous" observations in public may amount to sufficient intrusions.¹⁹³ For example, surveillance which aims to frighten or distress a plaintiff, even if in public, may still be actionable. Furthermore, courts have made clear that intrusion upon seclusion claims based on photographs or other data collection taken in "a place open to the general public," such as photographing an individual walking

188. *Kramer v. Downey*, 680 S.W.2d 524, 525 (Tex. App. 1984) (finding "the right to privacy is broad enough to include the right to be free of those willful intrusions into one's personal life at home and at work" when defendant followed, sent mail, and entered into "a pattern of conduct to thrust herself into his presence and otherwise to disrupt his domestic and professional life").

189. *See, e.g., Pittman v. J.J. Mac Intyre Co. of Nev.*, 969 F. Supp. 609, 614 (D. Nev. 1997) (finding an individual "had a reasonable expectation of privacy at her work during the working hours that arises from a desire to be left alone to perform the duties for which she was hired," (quoting *Kuhn v. Account Control Tech.*, 865 F. Supp. 1443, 1448 (D. Nev. 1994))).

190. *See, e.g., Aisenson v. Am. Broad. Co.*, 269 Cal. Rptr. 379, 388 (1990) (finding that a television broadcast of plaintiff while in his driveway and car was not an intrusion upon seclusion); *McLain v. Boise Cascade Corp.*, 533 P.2d 343, 347 (Or. 1975) (finding no viable intrusion upon seclusion claim when a hired private investigator surveilled plaintiff and trespassed on plaintiff's property because "[a]ll the surveillance . . . was done during daylight hours and when plaintiff was exposed to public view by his neighbors and passersby").

191. *Katz v. United States*, 389 U.S. 347, 351 (1967); RESTATEMENT (SECOND) OF TORTS § 652B cmt. c (AM. LAW INST. 1977) (stating there is no liability for observing a person, or even taking his photograph, while he is walking on the public highway, because "he is not then in seclusion, and his appearance is public and open to the public eye").

192. *Nader v. Gen. Motors Corp.*, 255 N.E.2d 765, 771 (N.Y. 1970).

193. *Id.* (surveilling plaintiff in bank in an "overzealous" manner); *see also, e.g., Summers v. Bailey*, 55 F.3d 1564, 1566 (11th Cir. 1995) ("Traditionally, watching or observing a person in a public place is not an intrusion upon one's privacy. However, Georgia courts have held that surveillance of an individual on public thoroughfares, where such surveillance aims to frighten or torment a person, is an unreasonable intrusion upon a person's privacy."); *Stessman v. Am. Black Hawk Broad. Co.*, 416 N.W.2d 685, 687-88 (Iowa 1987) (determining that the plaintiff stated a claim for intrusion upon her seclusion where defendant videotaped her eating in a restaurant).

on a public sidewalk or recording license plate numbers of parked cars in a public lot,¹⁹⁴ generally fail.¹⁹⁵

In certain situations, however, individuals have been found to have a reasonable expectation of privacy from observations conducted in public.¹⁹⁶ In *Daily Times Democrat v. Graham*, the Alabama Supreme Court upheld the plaintiff's invasion of privacy suit against a newspaper for publishing a photograph of her in public with her dress blown up.¹⁹⁷ The court stated that "[t]o hold that one who is involuntarily and instantaneously enmeshed in an embarrassing pose forfeits her right of privacy merely because she happened at the moment to be part of a public scene would be illogical, wrong, and unjust."¹⁹⁸ But it also noted:

One who is a part of a public scene may be lawfully photographed as an incidental part of that scene in his ordinary status. Where the status he expects to occupy is changed without his volition to a status embarrassing to an ordinary person of reasonable sensitivity, then he should not be deemed to have forfeited his right to be protected from an indecent and vulgar intrusion of his right of privacy merely because misfortune overtakes him in a public place.¹⁹⁹

Further, a federal district court in Illinois held that although a prisoner could be visible from a "publicly *visible* area," the prisoner's invasion of privacy claim against a news organization for filming him in the prison yard survived a motion to dismiss.²⁰⁰ The court stated that "[o]f course [the prisoner] *could* be seen by guards, prison personnel and inmates, and obviously he was in fact seen by [the defendant's] camera operator. But the mere fact a person can be seen by others does not mean that person cannot legally be 'secluded.'"²⁰¹ Although certain privacy intrusions

194. *Fogel v. Forbes*, 500 F. Supp. 1081, 1084, 1087 (E.D. Pa. 1980) (concluding no privacy claim when couple was photographed while waiting in line at an airport because it was taken in "a place open to the general public"); see *Int'l Union v. Garner*, 601 F. Supp. 187, 191–92 (M.D. Tenn. 1985); *Jackson v. Playboy Enters., Inc.*, 574 F. Supp. 10, 13 (S.D. Ohio 1983); see also *Schifano v. Green Cty. Greyhound Park, Inc.*, 624 So. 2d 178 (Ala. 1993) (dismissing a claim for wrongful intrusion for a photograph taken in the "winner's circle" at a track).

195. See, e.g., *Fogel*, 500 F. Supp. at 1084, 1087.

196. For example, in *Kramer v. Downey*, the Texas Court of Appeals held that "Although it has not previously been so held in this State, we now hold that the right to privacy is broad enough to include the right to be free of those willful intrusions into one's personal life at home and at work which occurred in this case." 680 S.W.2d 524, 525 (Tex. App. 1984) (holding that woman unwilling to accept the end of an affair followed him and sent items to his home and maintained "visual contact" of him even though she was always in public) (cited in Jordan M. Cash, Note, *Droning on and on: A Tort Approach to Regulating Hobbyist Drones*, 46 U. MEM. L. REV. 695, 727 n.174 (2016)).

197. 162 So. 2d 474 (Ala. 1964).

198. *Id.* at 478.

199. *Id.*

200. *Huskey v. Nat'l. Broad. Co.*, 632 F. Supp. 1282, 1286 (N.D. Ill. 1986) (emphasis added).

201. *Id.* at 1287–88.

occurring in public may be actionable, generally a plaintiff will have difficulty maintaining their privacy tort when the intrusion occurred in public.

But this concept of “what is held out to the public” has exceeded public streets and buildings as privacy claims where an individual on their own property has been observed, photographed, or videotaped from a public vantage point are often dismissed. For example, in *McClain v. Boise Cascade Corp.*, the Supreme Court of Oregon rejected the plaintiff’s intrusion upon seclusion claim by holding that an investigator’s trespass onto the plaintiff’s property to film him did not “constitute an unreasonable surveillance ‘highly offensive to a reasonable man’” because the plaintiff could have been viewed by the public.²⁰² Similarly, in *Aisenson v. American Broadcasting Co.*, a California appellate court held there was no intrusion upon seclusion claim for the broadcasting of a plaintiff while he was in his driveway and car.²⁰³ The Seventh Circuit held in *Munson v. Milwaukee Board of School Directors*, that the plaintiff failed to advance evidence of a legitimate expectation of privacy for the surveillance of the plaintiff on his property that was conducted from public streets.²⁰⁴

Further, regarding the location or place of the intrusion, states differ in statutory language and interpretation of intrusion upon seclusion tort claims. For example, Wisconsin’s statute deviates from the Restatement language by stating one is protected from intrusion “in a place”²⁰⁵ rather than “upon the solitude or seclusion of another or his private affairs or concerns.”²⁰⁶ An appellate court in Wisconsin therefore interpreted the statute to only protect the geographical location, thereby finding no viable cause of action in one’s medical records file.²⁰⁷ A federal district court in Wisconsin found this limited definition unpersuasive, holding that the statute “does not limit the intrusion to a person’s immediate physical environment but rather encompasses a person’s private belongings as long as the place these private belongings are intruded upon is one that a reasonable person would consider private.”²⁰⁸ Thus, depending on the state’s law, courts around the country reach different conclusions as to when and where an individual has a reasonable expectation of privacy sufficient to establish an intrusion upon seclusion cause of action.

Depending on the type of intrusion, courts have found that individuals have a reasonable expectation of privacy from intrusions during certain times of day or

202. 533 P.2d 343, 346 (Or. 1975). Notably, the court also relied on precedent that one who seeks damages for alleged injuries “waives his right of privacy to the extent of a reasonable investigation.” *Id.*

203. 269 Cal. Rptr. 379, 388 (Ct. App. 1990) (holding that broadcast of plaintiff while in his driveway and car was not an intrusion upon seclusion).

204. 969 F.2d 266, 271 (7th Cir. 1992).

205. WIS. STAT. ANN. § 995.50(2)(a) (West 2018).

206. RESTATEMENT (SECOND) OF TORTS § 652B (AM. LAW INST. 1977).

207. *Hillman v. Columbia Cty.*, 474 N.W.2d 913, 919 (Wis. Ct. App. 1991); *see also Allstate Ins. Co. v. Ginsberg*, 863 So. 2d 156, 162 (Fla. 2003) (“The intrusion to which this refers is into a ‘place’ in which there is a reasonable expectation of privacy and is not referring to a body part.”).

208. *Fischer v. Mt. Olive Lutheran Church, Inc.*, 207 F. Supp. 2d 914, 928 (W.D. Wis. 2002).

while participating in certain activities. For example, in debt collection cases, a debtor has a reasonable expectation not to be contacted at work by collectors.²⁰⁹ A young woman has a reasonable expectation of privacy when giving birth, even though she originally consented to the intruder's presence.²¹⁰

In addition to an analysis of the timing and nature of an activity, courts also look to the relationship between the observer and the observed, and this consideration may greatly diminish the plaintiff's ability to assert an intrusion upon seclusion cause of action. For example, in employment contexts, an employee may have a lesser expectation of privacy from intrusions by their employers because of the practical and procedural requirements of maintaining a workplace.²¹¹ Thus, plaintiffs must prove their employers intruded into very private places to establish the employer violated the employee's reasonable expectation of privacy.²¹² Additionally, one may be deemed to have consented to some intrusion into their private affairs when involved with litigation and even during processing insurance claims.²¹³ An

209. See, e.g., *Biser v. Mfrs. & Traders Tr. Co.*, 211 F. Supp. 3d 845, 858 (S.D. W. Va. 2016) (finding in favor of defendant's motion for summary judgment in a debt collection case because "[a]bsent evidence of repeated calls within a short time, calls at inappropriate hours, offensive language, or any other factor indicating an intent to intrude on the [plaintiff's] privacy" the plaintiff's privacy was not violated). In debt collection cases, courts often look to the number of phone calls and the time of day the debtor was contacted. Compare *Brandt v. I.C. Sys., Inc.*, No. 8:09-cv-126-T-26MAP, 2010 U.S. Dist. LEXIS 14588, at *12–13 (M.D. Fla. Feb. 19, 2010) (finding 101 calls over a two month period may constitute an invasion of privacy), with *Oppenheim v. I.C. Sys., Inc.*, 695 F. Supp. 2d 1303, 1310 (M.D. Fla. 2010) (finding thirty-five to forty debt collection calls over three months were "annoying and bothersome" but "did not rise to the requisite level of outrageous and unacceptable conduct contemplated by the tort of invasion of privacy based on intrusion").

210. *De May v. Roberts*, 9 N.W. 146, 149 (Mich. 1881) ("To the plaintiff the occasion was a most sacred one and no one had a right to intrude unless invited or because of some real and pressing necessity which it is not pretended existed in this case. The plaintiff had a legal right to the privacy of her apartment at such a time, and the law secures to her this right by requiring others to observe it, and to abstain from its violation.").

211. See, e.g., *O'Connor v. Ortega*, 480 U.S. 709, 717 (1987) (plurality opinion) ("Public employees' expectations of privacy in their offices, desks, and file cabinets, like similar expectations of employees in the private sector, may be reduced by virtue of actual office practices and procedures, or by legitimate regulation."); *Baggs v. Eagle-Picher Indus., Inc.*, 957 F.2d 268, 274–75 (6th Cir. 1992) (finding that while "mandatory workplace urine testing may well be an intrusion that a reasonable person would find objectionable," the defendant "did not invade a matter that the plaintiffs had a right to keep private" because it related to the plaintiff's employment).

212. *Corey A. Ciocchetti, The Eavesdropping Employer: A Twenty-First Century Framework for Employee Monitoring*, 48 AM. BUS. L.J. 285, 299 (2011); see also *Williams v. City of Tulsa*, 393 F. Supp. 2d 1124, 1131 (N.D. Okla. 2005) ("Because the Plaintiffs could not show interference with private affairs in other employees' offices or in open areas generally, the Court concludes that the only allegation the Plaintiffs make that could come within the scope of the tort is that of surveillance in the UCD restroom.").

213. See, e.g., *Forster v. Manchester*, 189 A.2d 147, 150 (Pa. 1963) ("Thus, by making a claim for personal injuries appellant must expect reasonable inquiry and investigation to be made of her claim and to this extent her interest in privacy is circumscribed. It should also be noted that all of the surveillances took place in the open on public thoroughfares where

individual's reasonable expectation of privacy may be outweighed when the subject of the parties' litigation justifies an intrusion. For example, the Supreme Court of Mississippi held that in a child custody dispute, the father was justified when he peered through the window of his former wife's cabin bedroom and took pictures of her and another woman engaged in sexual conduct for evidence that such a relationship existed, in an effort to prove that that environment might adversely affect their child.²¹⁴

Thus, courts charged with deciding whether a plaintiff bringing an intrusion upon seclusion claim has a reasonable expectation of privacy must contemplate numerous considerations with the specific facts before them. Moreover, as discussed in the next Section, the second element of an intrusion upon seclusion "tort applies a 'reasonable person standard'—that is, it tests whether a person of 'ordinary sensibilities' would be offended by the alleged invasion."²¹⁵

2. Intrusion that is Highly Offensive to a Reasonable Person

An intrusion occurs "when the defendant performs an act that had the potential to impair a person's peace of mind and comfort associated with the expectation of privacy."²¹⁶ Moreover, the intrusion must not only be offensive, but "*highly* offensive," or as one court put it, "outrageously unreasonable conduct."²¹⁷ The requirement that the conduct be "highly offensive to a reasonable person" requires a preliminary determination by the court of "offensiveness" to establish if there is indeed a cause of action for the jury to decide.²¹⁸ "A court determining the existence of 'offensiveness' would consider the degree of intrusion, the context, conduct and circumstances surrounding the intrusion as well as the intruder's motives and objectives, the setting into which he intrudes, and the expectations of those whose privacy is invaded."²¹⁹

appellant's activities could be observed by passers-by. To this extent appellant has exposed herself to public observation and therefore is not entitled to the same degree of privacy *that she would enjoy within the confines of her own home.*" (emphasis added).

214. *Plaxico v. Michael*, 735 So. 2d 1036, 1039–40 (Miss. 1999).

215. CONG. RESEARCH SERV., DOMESTIC DRONES AND PRIVACY: A PRIMER 15 (2015), <https://www.everycrsreport.com/reports/R43965.html> [hereinafter CRS, DOMESTIC DRONES AND PRIVACY] [<https://perma.cc/8J6M-34CP>]; see also, e.g., *Nix v. Hoke*, 139 F. Supp. 2d 125, 133 (D.D.C. 2001) (stating that the Supreme Court of Ohio described intrusion upon seclusion as "the wrongful intrusion into one's private activities in such a manner as to outrage or to cause mental suffering, shame, or humiliation to a person of ordinary sensibilities." (quoting *Sustin v. Fee*, 431 N.E.2d 992, 993 (Ohio 1982)); *Shorter v. Retail Credit Co.*, 251 F. Supp. 329, 331 (D.S.C. 1966) (stating "the acts complained of must be so gross and out of line as to offend one of ordinary sensibilities").

216. *Koeppel v. Speirs*, 808 N.W.2d 177, 182 (Iowa 2011) (citing *Hamberger v. Eastman*, 206 A.2d 239 (N.H. 1964)).

217. *N.O.C., Inc. v. Schaefer*, 484 A.2d 729, 733 (N.J. Super. Ct. Law Div. 1984) (emphasis added).

218. *Miller v. Nat'l Broad. Co.*, 232 Cal. Rptr. 668, 678 (Cal. Ct. App. 1986).

219. *Id.* at 679; see also, e.g., *Wolfson v. Lewis*, 924 F. Supp. 1413, 1421 (E.D. Pa. 1996).

Interference of seclusion must be substantial.²²⁰ Generally, a single incident will not suffice;²²¹ instead, the intrusion must be “repeated with such persistence and frequency as to amount to a course of hounding” and “becomes a substantial burden to his existence”²²² However, a single intrusion may be adequate when the intrusion is sufficiently outrageous.²²³ Moreover, the invasion of privacy must be intentional, meaning the defendant must desire that the intrusion would occur, or, as with other torts, know with a substantial certainty that such an invasion would result from his actions.²²⁴ An accidental intrusion is not actionable.²²⁵ This level of offensiveness may be equated to the standard required to prove an intentional infliction of emotional distress tort claim.²²⁶ “Finally, in some states, the intrusion must cause mental suffering, shame, or humiliation to permit recovery.”²²⁷ These common-law protections largely stem from theories about and expectations of privacy that were formed long before the potential for drone technology was conceived. As discussed in the next Part, the common-law intrusion upon seclusion tort is simply inadequate to address the potential privacy concerns posed by rapidly developing drone technology and surveillance. And while states have attempted to create statutes, these still need work.

220. RESTATEMENT (SECOND) OF TORTS § 652B cmt. d (AM. LAW INST. 1977).

221. *See, e.g.*, *Haller v. Phillips*, 591 N.E.2d 305, 307 (Ohio Ct. App. 1990) (finding one phone call where the caller called the plaintiff a “son of a bitch” did not rise to the level of intrusion).

222. RESTATEMENT (SECOND) OF TORTS § 652B cmt. d (AM. LAW INST. 1977). “Courts within the Ninth Circuit have held that repeated and continuous calls in an attempt to collect a debt give rise to a claim for intrusion upon seclusion.” *Panahiasl v. Gurney*, No. 04-04479 JF, 2007 WL 738642, at *3 (N.D. Cal. Mar. 8, 2007) (citing cases); *see also, e.g.*, *Stonum v. U.S. Airways, Inc.*, 83 F. Supp. 2d 894, 905–06 (S.D. Ohio 1999) (finding that an investigator’s four “innocuous telephone calls over a two-month period” nor plain view observations would “cause outrage, mental suffering, shame, or humiliation in a person of ordinary sensibilities”).

223. *See, e.g.*, *Miller v. Nat’l Broad. Co.*, 232 Cal. Rptr. 668, 680 (Cal. Ct. App. 1986) (finding that reasonable people could determine that video recording a man being resuscitated after a seizure in his own bedroom “at a time of vulnerability and confusion” was highly offensive conduct); *Swarthout v. Mut. Serv. Life Ins. Co.*, 632 N.W.2d 741 (Minn. Ct. App. 2001) (denying defendant’s motion for summary judgment on an intrusion upon seclusion claim where the defendant insurance company altered a signed medical release to obtain private medical information).

224. *See O’Donnell v. United States*, 891 F.2d 1079, 1083 (3d Cir. 1989) (upholding lower court’s grant of summary judgment for the defendant because there was no dispute of material fact that the defendant lacked the intention required for plaintiff’s intrusion into seclusion claim).

225. *See id.*

226. *See, e.g.*, *Stonum v. U.S. Airways, Inc.*, 83 F. Supp. 2d 894, 905 (S.D. Ohio 1999) (citing *Haller v. Phillips*, 591 N.E.2d 305, 307 (Ohio Ct. App. 1990)).

227. CRS, DOMESTIC DRONES AND PRIVACY, *supra* note 215, at 15.

III. RIGHT TO PRIVACY & DRONES

Scholars, legislators, and stakeholders generally agree drone operators may violate privacy interests, but their opinions vary on how to fix the problem. For example, Neil Richards and Daniel Solove criticize the rigidity of Prosser's classifications of the privacy tort and lament the harm such classification has done, particularly when it comes to advances in technology where such rigidity cannot keep up with new developments.²²⁸ They charge that Prosser's categorization "stunted [privacy law's] development in ways that have limited its ability to adapt to the problems of the Information Age."²²⁹ The question then becomes how should the common-law legal right of privacy apply in the drone context.

"Given small drones' dexterity in flight and ability to film inconspicuously, it is conceivable that drone operators might intrude in a plaintiff's private affairs in their attempt to gather information."²³⁰ Currently, Congress and the FAA have remained silent on implementing laws or regulations aimed at directly protecting individuals' privacy rights, especially from the peering eyes of nongovernmental drones. Congressman Edward J. Markey noted in 2012 the grave concerns and need for privacy safeguards in the age of drones:

Drones are already flying in U.S. airspace – with thousands more to come – but with no privacy protections or transparency measures in place. We are entering a brave new world, and just because a company soon will be able to register a drone license shouldn't mean that company can turn it into a cash register by selling consumer information. Currently, there are no privacy protections or guidelines and no way for the public to know who is flying drones, where, and why. The time to implement privacy protections is now. This discussion draft [for the Drone Aircraft Privacy and Transparency Act of 2012] will help ensure that pilotless aircraft isn't privacy-less aircraft and the strongest safeguards are put into place for Americans.²³¹

In February 2015, President Barack Obama charged the National Telecommunications and Information Administration (NTIA) with establishing a "multi-stakeholder engagement process to develop and communicate best practices for privacy, accountability, and transparency issues regarding commercial and private UAS use in the [National Airspace System]."²³² Stakeholders from the public

228. Richards & Solove, *supra* note 146, at 1924.

229. *Id.* at 1890, 1909–10 (advocating for a move to adopt the British approach to the tort of confidentiality).

230. Nabihah Syed & Michael Berry, *Journo-Drones: A Flight Over the Legal Landscape*, AM. BAR ASS'N: COMM. LAW (June 29, 2017), https://www.americanbar.org/groups/communications_law/publications/communications_lawyer/2014/june/journodrones_flight_over_legal_landscape/ [<https://perma.cc/GWR9-R5AR>].

231. Press Release, Rep. Edward J. Markey, Markey Releases Discussion Draft of Drone Privacy and Transparency Legislation (Aug. 1, 2012), <https://www.markey.senate.gov/news/press-releases/markey-releases-discussion-draft-of-drone-privacy-and-transparency-legislation> [<https://perma.cc/6QQS-7VWV>].

232. NAT'L TELECOMM. & INFO. ADMIN., VOLUNTARY BEST PRACTICES FOR UAS PRIVACY,

and private sector²³³ worked to develop a framework in an effort to protect citizens' privacy with emerging technologies, releasing a voluntary best practices guide on May 18, 2016.²³⁴

The focus of the best practices for UAS privacy guide is on data collected via UAS that “identifies a particular person. If data collected by UAS likely will not be linked to an individual’s name or other personally identifiable information, or if the data is altered so that a specific person is not recognizable, it is not covered data.”²³⁵ Both commercial and noncommercial drone operators must use reasonable care when employing technology with their drone that could collect other individual’s private and personal information.²³⁶ Commercial drone operators should notify the public if they are utilizing technology that may collect sensitive information by creating privacy policies, available for review by potentially affected parties.²³⁷ Depending on the specific user of the drone, notice may best be provided to neighbors on a flight-by-flight basis, or by posting an established policy available on a company website.²³⁸ If drone use may result in a collection of individuals’ identifying or personal data, the notices or policies should include information on the purpose for which the drone will collect the data, the kinds of data that may be collected, and

TRANSPARENCY, AND ACCOUNTABILITY 1 (2016), https://www.ntia.doc.gov/files/ntia/publications/uas_privacy_best_practices_6-21-16.pdf [<https://perma.cc/JN6C-LH94>] [hereinafer NTIA, VOLUNTARY BEST PRACTICES].

233. For a partial list of stakeholders involved, see *id.* at 11. “The best practices agreed to by a diverse group of stakeholders—including privacy and consumer advocates, industry, news organizations and trade associations—represent an important step in building consumer trust, giving users the tools to innovate in this space in a manner that respects privacy” Angela Simpson, *Finding Common Ground on UAS*, NAT’L TELECOMM. & INFO. ADMIN. (May 19, 2016), <https://www.ntia.doc.gov/blog/2016/finding-common-ground-uas> [<https://perma.cc/GP7J-WWFV>].

234. NTIA, VOLUNTARY BEST PRACTICES, *supra* note 232. The Voluntary Best Practices guide refers to the collection of information that identifies a particular person as “covered data,” which the guide urges operators to follow the best practices to protect the privacy of the covered data. *Id.* at 4. The Voluntary Best Practices Guide was updated on June 21, 2016 to include background information. *Multi-stakeholder Process: Unmanned Aircraft Systems*, NAT’L TELECOMM. & INFO. ADMIN. (June 21, 2016), <https://www.ntia.doc.gov/other-publication/2016/multistakeholder-process-unmanned-aircraft-systems> [<https://perma.cc/4LDZ-8KZQ>].

235. NTIA, VOLUNTARY BEST PRACTICES, *supra* note 232, at 4.

236. *Id.* at 5. The voluntary best practices guide refers to the collection of information that identifies a particular person as “covered data,” which the guide urges operators to follow the best practices to protect the privacy of the covered data. *Id.* at 3–4.

237. *Id.* at 5.

238. *Id.*

What qualifies as a practicable and reasonable effort to provide prior notice will depend on operators’ circumstances and the context of the UAS operation. For example, delivery UAS operators may provide customers with an estimated time of delivery. Real estate professionals using UAS may provide a home seller (and possibly immediate neighbors) with prior notice of the estimated date of UAS photography of the property. Hobbyist UAS operators may not need to notify nearby individuals of UAS flight in the vicinity.

Id. at 5 n.2.

how the information may be retained and who may have access to the information.²³⁹ Further, the drone operator should have a policy detailing how an individual may submit privacy and security concerns or grievances.²⁴⁰

Though providing notice or a detailed policy may be impracticable for commercial and noncommercial drone operators every time the drone is sent into the air, best practices suggest that each operator should at least show care when operating drones and storing potentially private information obtained using a drone.²⁴¹ Individuals should not employ drone technology to intentionally collect private or identifying information.²⁴² Identifying information that may be collected while operating a drone should not be unreasonably retained or shared by the operator.²⁴³ If potentially private information is retained for an intended purpose—based on the type of operator—particularly commercial operators should make a reasonable effort to secure the information by establishing security policies, monitoring their computer storage and system, and training employees with access.²⁴⁴ Complying with the evolving federal, state, and local laws and developing internal privacy policies will help protect drone operators from invading another citizen’s privacy.²⁴⁵

Notwithstanding this federal acknowledgment of the privacy concerns posed by drone technology, states are still responsible for drafting specific statutes protecting individual privacy. Several states have addressed the privacy issues related to the use of drones by private citizens. Idaho, for example, prohibits any “person or entity” from using a drone to photograph an individual for purposes of publishing or publicly disseminating such a photograph, without the individual’s consent.²⁴⁶ Nevada’s statute creates a cause of action for impermissible drone flights over one’s property through a trespass-based statute.²⁴⁷ Moreover, Florida’s criminal statutes prohibit the use of drones that interfere with an individual’s reasonable expectation of privacy.²⁴⁸ Specifically, the statute prohibits the use of drones by:

239. *Id.* at 5.

240. *Id.*

241. *Id.* at 6.

242. *Id.* Particularly, according to the voluntary best practices guide, “UAS operators should not use covered data for the following purposes without consent: employment eligibility, promotion, or retention; credit eligibility; or health care treatment eligibility other than when expressly permitted by and subject to the requirements of a sector-specific regulatory framework.” *Id.*

243. *Id.*

244. *Id.*

245. *See id.*

246. IDAHO CODE § 21-213 (2018) (creating a civil cause of action against any person in violation of this statute). It is possible, however, that this statute could violate the First Amendment. *See* WELLS C. BENNETT, BROOKINGS INST. CTR. FOR TECH. INNOVATION, CIVILIAN DRONES, PRIVACY, AND THE FEDERAL-STATE BALANCE 6 (2014), https://www.brookings.edu/wp-content/uploads/2016/07/civilian_drones_privacy_bennett.pdf [<https://perma.cc/BU8D-YRHT>] (“When at last the judiciary applies the law of ‘private’ privacy to drone surveillance, many statutory or common law rules could be narrowed, or even invalidated, on First Amendment grounds.”).

247. NEV. REV. STAT. ANN. § 493.103 (LexisNexis 2012 & Supp. 2016); *see also* OR. REV. STAT. § 837.380 (2017) (creating a cause of action for damages based in trespass).

248. FLA. STAT. ANN. § 934.50 (West 2015 & Supp. 2019). The statute carves out

(b) A person, a state agency, or a political subdivision . . . may not use a drone equipped with an imaging device to record an image of privately owned real property or of the owner, tenant, occupant, invitee, or licensee of such property with the intent to conduct surveillance on the individual or property captured in the image in violation of such person's reasonable expectation of privacy without his or her written consent. For purposes of this section, a person is presumed to have a reasonable expectation of privacy on his or her privately owned real property if he or she is not observable by persons located at ground level in a place where they have a legal right to be, regardless of whether he or she is observable from the air with the use of a drone.²⁴⁹

According to the Center for the Study of the Drone at Bard College, as of 2016, “[t]hirty one localities ban the use of drones to invade a person’s privacy by conducting surveillance or recording private activities, and . . . [f]orty eight localities restrict either the use of drones over private property or the use of drones to invade privacy in any way.”²⁵⁰

Reminiscent of common-law privacy torts, Wisconsin’s statute states that a private individual commits a misdemeanor by using a drone to “photograph, record, or otherwise observe another individual in a place or location where the individual has a reasonable expectation of privacy.”²⁵¹ Whereas Tennessee prohibits, with exceptions, the use of an “unmanned aircraft to capture an image of an individual or privately owned real property . . . with the intent to conduct surveillance on the individual or property captured in the image,” when the operator retains or publicizes the images.²⁵²

Moreover, “[t]he prohibitions against invading privacy, intruding upon seclusion, publishing private facts, and stalking all might be implicated when a drone, heavily

exceptions for various permissible uses of drones. *Id.* Notably, it allows drones to be used for business purposes if licensed, but “this exception does not apply to a profession in which the licensee’s authorized scope of practice includes obtaining information about the identity, habits, conduct, movements, whereabouts, affiliations, associations, transactions, reputation, or character of any society, person, or group of persons.” *Id.* § 934.50(4)(d). This caveat furthers the state’s initial goal of protecting individuals’ reasonable expectation of privacy while still allowing licensed businesses the ability to utilize the advantages of drones in Florida.

249. *Id.* § 934.50(3)(b).

250. ARTHUR HOLLAND MICHEL, CTR. FOR THE STUDY OF THE DRONE AT BARD COLL., DRONES AT HOME: LOCAL AND STATE DRONE LAWS 2 (2017), <http://dronecenter.bard.edu/files/2017/03/CSD-Local-and-State-Drone-Laws-1.pdf> [<https://perma.cc/DZ7F-EQ8H>].

251. WIS. STAT. ANN. § 942.10 (West 2018).

252. TENN. CODE ANN. § 39-13-903 (2014 & Supp. 2017). There is a defense to prosecution under this statute “for the possession of an image [if] the person destroyed the image as soon as the person had knowledge that the image was captured in violation of § 39-13-903.” *Id.* § 39-13-904. Moreover, the statute provides many exceptions where it is lawful to capture an image with an unmanned aircraft. *Id.* § 39-13-902(a)(1), (7) (listing exceptions, including “[f]or purposes of professional or scholarly research and development by a person acting on behalf of an institution of higher education” and “[w]ith the consent of the individual who owns or lawfully occupies the real property captured in the image”).

sensored up, hears or sees somebody who doesn't wish to be heard or seen."²⁵³ A traditional privacy-tort analysis does not sufficiently provide for the level of potential invasions when drones and accompanying technology are utilized. Thus, drone technology should be added to the court's considerations when determining privacy-tort cases. Specifically, the common-law intrusion tort²⁵⁴ is not sufficient for modern technology, which may leave plaintiffs without redress for invasive intrusions into their private affairs.²⁵⁵

While the existing statutory schemes provide some relief for victims of privacy invasions arising from the use of drone technology, many of these statutes are merely speculative since a private individual has not yet brought a sustainable case alleging a violation of privacy from nongovernmental drone use. As Wells C. Bennett of the Center for Technology Innovation at Brookings notes, without any "case[s] turning on the relationship between individual privacy rights and civilian drone surveillance," it is difficult to discern whether one state's drone-privacy statute is more effective than another state's.²⁵⁶ And while legislators have analogous cases with more established technologies—for example, helicopters equipped with cameras and everyday cell-phone use—and can make "some educated guesses about what rules will work best" for drone protections, the analogies only go so far.²⁵⁷ Bennett notes that "the efficacy and legality of new drone regulations will probably only come into relief once private drone flight and private drone surveillance become somewhat more commonplace."²⁵⁸

IV. CHALLENGES & RECOMMENDATIONS

A. Problems with Intrusion Upon Seclusion Tort Claims Involving Drones

Prosecuting Prosser's concept of the "right to be left alone" when a drone has intruded upon an individual's right to privacy comes with many challenges. This Section details the numerous issues, including (1) naming a defendant; (2) establishing intent; (3) determining what is held out in public to establish an individual's reasonable expectation of privacy; and (4) determining offensiveness of

253. BENNETT, *supra* note 246, at 3.

254. See Eli A. Meltz, Note, *No Harm, No Foul? "Attempted" Invasion of Privacy and the Tort of Intrusion Upon Seclusion*, 83 *FORDHAM L. REV.* 3431, 3440–43 (2015) (discussing states' laws of the tort of intrusion upon seclusion).

255. This Article notes that although current statutes and common-law privacy torts may not sufficiently protect individuals, there are other avenues for victims of drone-related invasions. For example, drones recording audio may be subject to wire-tapping laws and drone operators may be liable under Peeping Tom laws or similar harassment causes of action, or anti-paparazzi laws for photos captured when an individual has a reasonable expectation of privacy. See Syed & Berry, *supra* note 230. However, this Article focuses on the privacy tort of intrusion upon seclusion and similar statutes, and therefore, it does not discuss the potential interplay between common-law privacy torts and other avenues for relief.

256. BENNETT, *supra* note 246, at 5.

257. *Id.* at 6.

258. *Id.*

an intrusion. The following Section provides recommendations for states and courts to consider when the right to privacy and drones collide.

1. Naming a Defendant

Even without the luxury of foresight into the actual application of the state statutes, several concerns in even bringing forth a drone-related privacy claim are clear. For example, establishing the drone's owner in order to name a defendant appears to be almost impossible. Imagine being in the confines of your home where a drone floats above a public street but peers into your window as you dress for the day. Even if that happened every day like clockwork, unless the drone falls to the ground and can be retrieved, how is the victim of such an intrusion to determine the owner of the drone? While the FAA requires drones to be visibly outfitted with their registration number²⁵⁹ (unless the registration number can be placed elsewhere on the drone that does not require a tool to enter),²⁶⁰ an average person inside their home is likely unable to view the number to then conduct due diligence to uncover the owner. And even if they did connect a name to the registration number, federal regulations note that "registration is not evidence of aircraft ownership in any proceeding in which ownership of an unmanned aircraft by a particular person is in issue."²⁶¹ Furthermore, a drone sighting may still be an unusual and rare occurrence, but with drones rapidly increasing in popularity, it may become almost impossible to discern whether the drone spotted lingering yesterday is the same one looming in the same place today.

2. Establishing Intent

Another concern surrounding the prosecution of an intrusion upon seclusion tort under common law or statute when a drone is involved is the requirement that the plaintiff prove intent.²⁶² An intrusion must have been intentional, which requires that the operator desire the intrusion or know with substantial certainty that invasion would result from his actions.²⁶³ And some states are even more restrictive, requiring

259. 14 C.F.R. § 48.200 (2018) (stating that the aircraft must display a unique identifier, which is either the registration number of the individual or the aircraft given upon the completion of the registration, or if authorized, the serial number of a small drone).

260. *Id.* § 48.205 (stating that the identifier must be "legible," affixed "by any means necessary to ensure it will remain affixed" throughout the duration of the flight, and must be "readily accessible and visible upon inspection"). "A unique identifier enclosed in a compartment is readily accessible if it can be accessed without the use of any tool." *Id.* The FAA allows operators to mark their drone with their registration number by engraving, using a permanent label, or a permanent marker. *How to Label Your UAS, supra* note 67. Although the FAA states that the number must be visible, it notes that "[y]ou can mark inside the battery compartment if it doesn't require a tool to open." *Id.*

261. 14 C.F.R. § 48.25(c) (2018).

262. See Benjamin D. Mathews, Comment, *Potential Tort Liability for Personal Use of Drone Aircraft*, 46 ST. MARY'S L.J. 573, 587 (2015) ("Thus, a question for juries, and eventually lawmakers, will be whether the intentional act of flying a drone is sufficient to give rise to a claim of intrusion upon seclusion.").

263. RESTATEMENT (SECOND) OF TORTS § 652B (AM. LAW INST. 1977); 2 DAN B. DOBBS,

shame, mental suffering, or humiliation to be demonstrated to permit recovery.²⁶⁴ In reviewing selected legal issues regarding drones in domestic airspace, the Congressional Research Service posits that “the location of the target of the surveillance is, in many cases, determinative of whether someone has a viable claim for intrusion upon seclusion.”²⁶⁵ For example, generally, “conducting surveillance of a person while within the confines of his home will constitute an intrusion upon seclusion.”²⁶⁶ But with drones, intent is likely more difficult to prove. This is especially true when photographs, audio recordings, or other private data is not originally obtained intentionally during flight but is then later used or stored and realized to be collectively pervasive. Is “intent” couched in the desire to intrude over another’s property and whatever personal data is collected from the drone technology is likewise “intentional”? Or must an individual desire to obtain personal information or observe personal details when his or her drone takes off? Florida’s criminal drone statute, similar to an analogous common-law privacy tort claim, requires that the drone operator have “the intent to conduct surveillance on the individual or property captured in the image in violation of such person’s reasonable expectation of privacy without his or her written consent” for an actionable claim.²⁶⁷ Requiring specific intent renders captured images by mistake, accident, or incidentally nonactionable, which is likely to be a very high burden for a plaintiff to meet.²⁶⁸

3. Reasonable Expectation of Privacy

Furthermore, establishing a reasonable expectation of privacy in the age of drones equipped with advanced technology also poses a problem in the prosecution of an intrusion upon seclusion claim. The Uniform Law Commission and its Tort Law Relating to Drones Act Drafting Committee is in the early stages of drafting laws to harmonize tort law related to drones.²⁶⁹ But in its efforts, the Uniform Law Commission notes the potential concerns and needed consideration of “whether a flight in compliance with either Part 107 or Part 101 is ‘from a public vantage

PAUL T. HAYDEN & ELLEN M. BUBLICK, *THE LAW OF TORTS* § 29 (2d ed. 2011).

264. See, e.g., *Burns v. Masterbrand Cabinets, Inc.*, 574 N.E.2d 72, 77 (Ill. App. Ct. 2007); *DeAngelo v. Fortney*, 515 A.2d 594, 596 (Pa. Super. Ct. 1986).

265. ALISSA M. DOLAN & RICHARD M. THOMPSON II, CONG. RES. SERV., *INTEGRATION OF DRONES INTO DOMESTIC AIRSPACE: SELECTED LEGAL ISSUES* 13 (2013), https://law.ku.edu/sites/law.ku.edu/files/docs/media_law/Integration_of_Drones_into_Domestic_Airspace_Selected_Legal_Issues.pdf [<https://perma.cc/NQ6X-9372>].

266. *Id.* (citing *Wolfson v. Lewis*, 924 F. Supp. 1413 (E.D. Penn. 1996)); see also *RESTATEMENT (SECOND) OF TORTS* § 652B cmt. b, illus. 2 (AM. LAW INST. 1977); *Lovgren v. Citizens First Nat’l Bank of Princeton*, 534 N.E.2d 987 (Ill. 1989).

267. FLA. STAT. ANN. § 934.50(3)(b) (West 2015 & Supp. 2019).

268. *Florida’s New Drone Law: Fulltime Employment for Lawyers?*, DRONE L. (May 19, 2015), <http://dronelaw.com/2015/05/19/floridas-new-drone-law-fulltime-employment-for-lawyers/> [<https://perma.cc/D7RF-EY6J>].

269. Memorandum from Gregory S. McNeal to Committee Members and Observers of the Tort Law Relating to Drones Act Drafting Committee 2 (Nov. 9, 2017), https://web.archive.org/web/20180530201935/http://www.uniformlaws.org/shared/docs/drones,%20tort%20law%20relating%20to/2017dec_TLRD_Issues%20Memo.pdf [<https://perma.cc/MTC8-DWA4>].

point”²⁷⁰ for establishing a person’s reasonable expectation of privacy for prosecution of privacy tort claims. While this issue is more analogous to surveillance precedent, such as the helicopter used in *Florida v. Riley* to surveil, it remains unresolved and a serious concern when a drone is involved.²⁷¹

Florida’s drone statute appears to proactively address this concern. The statute prohibits the use of drones that interfere with an individual’s reasonable expectation of privacy and makes clear that:

a person is presumed to have a reasonable expectation of privacy on his or her privately owned real property if he or she is not observable by persons located at ground level in a place where they have a legal right to be, regardless of whether he or she is observable from the air with the use of a drone.²⁷²

In contrast, other states’ drone-privacy laws do not delve into what “reasonable expectation of privacy” includes and whether an individual is protected in a private setting even if the person can be viewed from where the drone is aloft.

Moreover, in determining whether a drone has intruded upon someone’s reasonable expectation of privacy, the victim’s location is relevant “to a determination of the sufficiency of the evidence of intrusiveness, [but] it is not determinative of whether an intrusion into one’s ‘solitude and seclusion’ has occurred.”²⁷³ Although individuals do not have a reasonable expectation of privacy for that which is held out to the public,²⁷⁴ the size, shape, longevity, maneuverability, and technological additions on drones make the question of “what is held out to the public” more complex.

Therefore, courts analyzing an individual’s reasonable expectation of privacy for an intrusion upon seclusion claim involving drones must focus on the location of the alleged intrusion. But they must also consider the drone technology and the added technological features and advancements. “An airborne droid might take in more information over a much longer period of time than a human eye or ear; and it might also find its way to areas where other aerial platforms might not be able to go.”²⁷⁵

270. *Id.* at 10.

271. 488 U.S. 445 (1989) (plurality opinion). In *Florida v. Riley*, the Supreme Court held that there was no Fourth Amendment violation when police flew a helicopter over defendant’s backyard at approximately 400 feet and took photographs of the marijuana growing below in a greenhouse. *Id.* at 451–52. The plurality determined that the two exposed sides of the greenhouse subjected Riley to a reasonably objective search from the public airspace above, despite his reasonable subjective expectation of privacy. *Id.* at 450–51. Although *Riley* involved the government’s use of a helicopter, it notes the similar concerns of “public airspace” that may arise in private right of actions. *Id.*

272. FLA. STAT. ANN. § 934.50(3)(b).

273. *Evans v. Detlefsen*, 857 F.2d 330, 338 (6th Cir. 1988).

274. See RESTATEMENT (SECOND) OF TORTS § 652B cmt. c. (AM. LAW. INST. 1977) (stating that there is generally no liability for photographing or observing a person while in public “since he is not then in seclusion, and his appearance is public and open to the public eye”); Prosser, *supra* note 2, at 383.

275. BENNETT, *supra* note 246, at 1.

4. Difficulty Meeting Intrusion that is Highly Offensive to a Reasonable Person

Furthermore, plaintiffs seeking relief under an intrusion upon seclusion theory involving a drone may have difficulty meeting the substantial interference and highly offensive standard required to recover. Courts must employ a fact-intensive analysis when considering whether an intrusion upon seclusion claim rises to the level of substantial interference. Courts already focus on the motive of the intruder and the context of the intrusion,²⁷⁶ and must also consider the type and extent of technology used in the intrusion.

Generally, interference of seclusion must be substantial²⁷⁷ and “repeated with such persistence and frequency as to amount to a course of hounding” and “becomes a substantial burden to his existence”²⁷⁸ This high burden is already difficult to establish in the prosecution of an intrusion upon seclusion claim, and it will likely be even more difficult when the privacy invasion involves drone technology. For example, plaintiffs in Texas failed to establish a claim for intrusion upon seclusion, and other claims, against Google after discovering that it had taken “colored imagery of their residence, including the swimming pool, from a vehicle in their residence driveway months earlier without obtaining any privacy waiver or authorization.”²⁷⁹ The court concluded that the plaintiffs did not suffer substantial and highly offensive intrusion upon seclusion from the continuous filming of their property captured by the camera’s fleeting presence, and the plaintiffs did not allege they were inside the home or personally observed.²⁸⁰

With drone technology, a reasonable jury may be more likely to find that a single intrusion was substantial interference and highly offensive.²⁸¹ An intrusion can be physical, or an intrusion may be from sensory invasions.²⁸² Thus, drones may not

276. DOLAN & THOMPSON, *supra* note 265, at 19.

277. RESTATEMENT (SECOND) OF TORTS § 652B cmt. d (AM. LAW INST. 1977).

278. *Id.* “Courts within the Ninth Circuit have held that repeated and continuous calls in an attempt to collect a debt give rise to a claim for intrusion upon seclusion.” *Panahiasl v. Gurney*, No. 04-04479 JF, 2007 WL 738642, at *3 (N.D. Cal. Mar. 8, 2007) (citing *Joseph v. J.J. Mac Intyre Cos.*, 281 F. Supp. 2d 1156, 1169 (N.D. Cal. 2003)); *see also, e.g., Stonum v. U.S. Airways, Inc.*, 83 F. Supp. 2d 894, 905–06 (S.D. Ohio 1999) (finding that neither an investigator’s “four innocuous telephone calls over a two-month period” nor plain view observations would “cause outrage, mental suffering, shame, or humiliation in a person of ordinary sensibilities”).

279. *Boring v. Google Inc.*, 362 F. App’x 273, 276 (3d Cir. 2010).

280. *Id.* at 279, 283 (Google taking photographs of people’s residence; “there are no facts suggesting that Google acted maliciously or recklessly or that Google intentionally disregarded the Borings’ rights.”).

281. In certain cases, a single intrusion has been sufficient to maintain a claim of intrusion upon seclusion. *See, e.g., Miller v. Nat’l Broad. Co.*, 232 Cal. Rptr. 668, 679 (Cal. Ct. App. 1986) (finding that reasonable people could determine that video recording a man being resuscitated after a seizure in his own bedroom “at a time of vulnerability and confusion” was highly offensive conduct); *Swarthout v. Mut. Serv. Life Ins. Co.*, 632 N.W.2d 741 (Minn. Ct. App. 2001) (denying defendant’s motion for summary judgment on an intrusion upon seclusion claim where the defendant insurance company altered a signed medical release to obtain private medical information).

282. RESTATEMENT (SECOND) OF TORTS § 652B cmt. b (AM. LAW INST. 1977).

only loom over someone's property but may also utilize numerous types of technology to intrude without physically intruding.²⁸³

B. Prosecuting an Intrusion Upon Seclusion Claim in the Context of Drones

Based on the numerous concerns above, one possible way to even the playing field in the prosecution of drone-related intrusion upon seclusion claims is for statutory schemes to implement a rebuttable presumption that a defendant has intruded upon the plaintiff's seclusion. This type of presumption is already found in Wisconsin's statute on "Damages by Aircraft or Spacecraft."²⁸⁴ Although this statute does not explicitly refer to drones, and instead relates more to liability of owners of aircrafts for physical damage caused by the flight of such aircraft, it is still a workable base for prosecuting drone-related privacy cases. Specifically, the statute states:

The liability of the owner, lessee and pilot of every aircraft or spacecraft operating over the lands or waters of this state for injuries or damage to persons or property on the land or water beneath, caused by the ascent, descent or flight of such aircraft or spacecraft, or the dropping or falling of the aircraft or spacecraft or of any object or material therefrom, shall be determined by the law applicable to torts on land, except that there shall be a presumption of liability on the part of the owner, lessee or pilot, as the case may be, where injury or damage is caused by the dropping or falling of the aircraft or spacecraft or of any object or material therefrom, which presumption may be rebutted by proof that the injury or damage was not caused by negligence on the part of the owner, lessee or pilot and the burden of proof in such case shall be upon such owner, lessee or pilot to show absence of negligence on his or her part.²⁸⁵

Additionally, Nevada has a similar liability statute where "[t]he owner of every aircraft which is operated over the lands or waters of this state is presumed liable for injuries to persons or property . . . beneath."²⁸⁶ It goes on to state:

The presumption of liability of the owner, or of the owner and lessee, may be rebutted by proof that the injury was not caused by negligence of the owner or lessee, or of any person operating the aircraft with the permission of the owner, lessee or any person maintaining or repairing the aircraft with the permission of the owner or lessee.²⁸⁷

283. Hillary B. Farber, *Keep Out! The Efficacy of Trespass, Nuisance and Privacy Torts As Applied to Drones*, 33 GA. ST. U. L. REV. 359, 402 (2017) ("Given the capabilities of drones, it is relatively easy for operators to capture images inside and outside of one's home without physically trespassing on to one's property.").

284. WIS. STAT. ANN. § 114.05 (West 2018).

285. *Id.*

286. NEV. REV. STAT. ANN. § 493.060 (LexisNexis 2012).

287. *Id.*

Thus, the Wisconsin and Nevada statutes impose a rebuttable presumption that the owner of the aircraft is liable for the damage caused by the torts committed against the persons or property beneath.

In applying this rule to privacy-tort claims, a plaintiff should first have to allege a prima facie case of intrusion upon seclusion. For example, a plaintiff may sufficiently establish a prima facie case by alleging sufficient facts that a drone (with a reasonable description of the drone) was hovering outside his or her bathroom window while he or she was changing (at the approximate time and date). If the plaintiff establishes a prima facie case, then the defendant shall be presumed to have intruded upon the plaintiff's seclusion. Then, utilizing Wisconsin's rebuttable presumption standard for physical damage caused by aircrafts, the defendant must rebut the presumption by proving that they did not intrude upon the plaintiff's seclusion. The defendant could establish this in a variety of ways, such as providing evidence of flight tracking data, video or photo footage taken, or establishing that a third-party pilot was in control and/or possession of the drone at the date and time alleged, because the defendant is in the best position to know whether his or her drone intruded. Moreover, a prudent drone owner would have the flight data information and access to any video/photo/audio recordings.

Rebutting such a presumption appears to be similar to the successful tactic used by the New York citizen discussed *inter alia*, who was arrested after taking photos and video of a medical group building using his drone.²⁸⁸ During the trial, he presented evidence rebutting his intent (flying his drone to take "videos and photos of the façade of the structure" while waiting for his mother's medical appointment to conclude) and the ability of the drone to intrude (establishing that the drone's camera was not equipped with a zoom lens, the building's windows were tinted, and the footage did not show the building's interior).²⁸⁹ Additionally, he presented the drone's footage to the jury to demonstrate that he did not invade the privacy rights of those in the medical building.²⁹⁰ The presentation of this evidence appears to have had some effect on the jury, as the man was acquitted.²⁹¹

In summary, incorporating a rebuttable presumption into privacy-tort statutes will likely resolve many of the practical difficulties in prosecuting such claims. Moreover, it is reasonable for a drone operator to rebut the presumption that he or she intruded into another's seclusion once the plaintiff alleges a prima facie case, as opposed to the burden remaining on the plaintiff to establish that the operator did in fact intrude. Because, generally, a plaintiff would not be able to establish where exactly the drone was located or what information the drone captured.

CONCLUSION

One of the most innovative technological advancements in recent years, drones present difficult, and unintended, challenges for plaintiffs attempting to prove common law privacy-tort claims. The common law invasion of privacy tort analysis

288. Zangla, *supra* note 10.

289. *Id.*

290. *Id.*

291. *Id.*

as it stands is simply not sufficient to protect an individual's right to privacy for torts committed using the modern and complex technology of drones. Thus, the consideration of drone technology must be weaved into analyzing whether the plaintiff had a reasonable expectation of privacy and whether the intrusion was highly offensive to a reasonable person. Only then will individuals who are the victims of drone surveillance be given the opportunity to establish their intrusion upon seclusion claims when the right to privacy and drones collide.