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KEEP OUT! THE EFFICACY OF TRESPASS, NUISANCE AND PRIVACY TORTS AS APPLIED TO DRONES

Hillary B. Farber*

INTRODUCTION

A few years ago one might have seen a small object flying overhead without any idea what it could be. Today, it is fairly commonplace to see drones flying around our neighborhood skies. The Federal Aviation Administration (FAA) predicts there will be seven million drones populating our skies by 2020.¹ In 2015 hobbyists, recreational users, and commercial businesses purchased unmanned aerial vehicles, commonly referred to as drones, in record-breaking numbers.² Estimates reveal that over 4.3 million drones were sold worldwide in 2015.³ Trade industry experts predicted that more than 2.8 million drones would be sold in the U.S. in 2016 and 4.8 million in 2017.⁴ The surge in drone sales means more drones in the sky. The FAA estimates that by the end of this decade 30,000 drones will occupy our skies.⁵ Drones are being used for commercial and recreational purposes.⁶ Commercial users such as real estate

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1. FED. AVIATION ADMIN., FAA AEROSPACE FORECAST 31 (2016).

2. *Id.* at 30.

3. Paul Bedard, *Drone Sales Surge 167% to 4.3 Million, U.S. Leads but China Catching Up*, WASH. EXAMINER (May 29, 2015, 12:31 PM), <http://www.washingtonexaminer.com/drone-sales-surge-167-to-4.3-million-u.s.-leads-but-china-catching-up/article/2565240>.

4. FED. AVIATION ADMIN., *supra* note 1, at 31; Joshua Brustein, *How Drones Are Adapting to New U.S. Rules*, BLOOMBERG TECH. (Jan. 6, 2016, 2:36 PM), <https://www.bloomberg.com/news/articles/2016-01-06/how-drones-are-adapting-to-new-u-s-rules>. At this year's annual Consumer Electronic Show (CES), the biggest electronic show in the world, "CES organizers said the U.S. market reached \$105 million in revenue last year, an increase of more than 50 percent from the year before." *Id.*

5. Ben Sclair, *30,000 Drones by 2020*, GEN. AVIATION NEWS (May 2, 2013), <http://generalaviationnews.com/2013/05/02/30000-drones-by-2020/>.

6. *Unmanned Aircraft Systems (UAS) Frequently Asked Questions/Help*, FED. AVIATION ADMIN., <https://www.faa.gov/uas/faqs/> (last visited Sept. 21, 2016).

agents, videographers, farmers, and engineers are capitalizing on this relatively inexpensive technology to take aerial photographs, monitor crops, and inspect infrastructure.⁷ Hobbyists and recreational drone users fly drones for the sheer fun of it—deploying out-of-the-box drones to shoot the most authentic “selfies” and building drones for competitions.⁸ There are endless civil applications for drones, and the possibilities will continue to grow at even higher rates as the technology develops and becomes more accessible to the public.

In response to this unprecedented growth, the FAA increased regulation and oversight of drone operation for not only commercial operators but recreational users, too. In December 2015, the FAA instituted a registration requirement for all recreational drone operators.⁹ The registration process is designed to make it easier for the FAA to keep track of and identify the thousands of drones populating our skies.¹⁰ On June 28, 2016, the FAA issued new rules for the operation of commercial drones weighing less than fifty-five pounds.¹¹ These new rules simplify the licensing process for commercial operators to fly unmanned aircraft at altitudes below four hundred feet.¹² Until these new rules took effect, commercial users could not operate drones without a Certificate of Authorization (COA) from the FAA.¹³ On average, applicants waited four to six

7. AMANDA ESSEX, NAT’L CONF. OF STATE LEG., TAKING OFF: STATE UNMANNED AIRCRAFT SYSTEMS (DRONES) POLICIES 5 (2016), <http://www.ncsl.org/research/transportation/taking-off-state-unmanned-aircraft-systems-policies.aspx>; See, e.g., Marc Jonathan Blitz et al., *Regulating Drones Under the First and Fourth Amendments*, 57 WM. & MARY L. REV. 49, 54 (2015) (“[F]irefighting and disaster recovery, precision agriculture and ranching, [and] pipeline and other utility inspection . . .”).

8. *Facial Recognition Drone Gives Your Selfie Stick Wings*, UAV EXPERT NEWS (Apr. 5, 2016), <http://www.uavexpertnews.com/facial-recognition-drone-gives-your-selfie-stick-wings/>; Mike Murphy, *The First US National Drone-Racing Competition Was Won by an Australian*, QUARTZ (July 18, 2015), <http://qz.com/457748/fpv-national-drone-racing-championship/>.

9. Press Release, FED. AVIATION ADMIN., FAA Announces Small UAS Registration Rule (Dec. 14, 2015), https://www.faa.gov/news/press_releases/news_story.cfm?newsId=19856.

10. See Cecilia Kang, *Drone Shopping? F.A.A. Rules May Hover Over Holidays*, N.Y. TIMES (Nov. 23, 2015), <http://www.nytimes.com/2015/11/24/technology/proposed-regulations-for-drones-are-released.html>.

11. See generally Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 61, et al.).

12. See *id.*

13. FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, § 333, 125 Stat. 11 (2012). Obtaining a COA from the FAA is a lengthy process whereby one must apply for an exemption under § 333 of the 2012 FAA Modernization and Reform Act. *Id.*

months to obtain a COA from the FAA once they submitted all documents.¹⁴ The new rules eliminate the waiting period and much of the bureaucratic process. Now that the rules have been finalized, the volume of drones in our skies will increase exponentially.

Drones are poised to bring endless commercial benefit to many industries. They are also fun recreational gadgets with more capabilities than their predecessors, remote-controlled helicopters. But along with the benefits of new technologies comes misuse. Concerns are mounting over drones snooping, spying, and crashing.¹⁵ News stories abound with reports of people observing drones buzzing by their windows, hovering over their backyards, and invading their privacy at parks, beaches, and sporting events.¹⁶ In some instances,

14. See Warren Rapp, *New FAA Rules Say Drones Can Take to the Skies—with Restrictions*, THE CONVERSATION (Feb. 20, 2015, 6:05 AM), <http://theconversation.com/new-faa-rules-say-drones-can-take-to-the-skies-with-restrictions-37782>; Ron Smith, *UAV Use Requires Training and Certification*, SW. FARM PRESS (July 5, 2016), <http://southwestfarmpress.com/cotton/uav-use-requires-training-and-certification>. Not only is time a factor under the current rules, but the FAA is the sole authority to determine how many exemptions to issue, to whom, and for what purpose. See Rapp, *supra*. The time period for evaluating petitions for exemptions is 120 days, and many businesses are forced to employ legal assistance to navigate the administrative process. See Jason Reagan, *UAV Group Offering Section 333 Legal Package*, DRONE LIFE (June 9, 2015), <http://dronelife.com/2015/06/09/uav-group-offering-section-333-legal-package/>. As of February 18, 2016, 3,459 petitions had been granted. Section 333, FED. AVIATION ADMIN., https://www.faa.gov/uas/beyond_the_basics/section_333/ (last visited Sept. 28, 2016).

15. E.g., Anita Ramasastry, *Drones as the New Peeping Toms?*, VERDICT (June 26, 2014), <https://verdict.justia.com/2014/06/26/drones-new-peeping-toms>; Daniel Victor, *F.A.A. Opens Inquiry After Baby Hurt in Drone Crash*, N.Y. TIMES (Sept. 23, 2015), http://www.nytimes.com/2015/09/23/business/drone-crash-injures-baby-highlighting-faa-concerns.html?_r=1; Jessica Heslam, *Guests Suing Groom Over Drone Crash*, BOSTON HERALD (Dec. 9, 2016), http://www.bostonherald.com/news/columnists/jessica_heslam/2016/12/heslam_guests_suing_groom_over_drone_crash.

16. E.g., *Drone Flying in Brooklyn Heights Startles Residents*, NBC 4 N.Y. (Aug. 15, 2015, 3:20 AM), <http://www.nbcnewyork.com/on-air/as-seen-on/Drone-Flying-in-Brooklyn-Heights-Startles-Residents-New-York-321937741.html>; *Leewood Man Says Peeping Tom Flew Drone next to Teen Daughter's Window*, FOX 4 NEWS KAN. CITY (Oct. 9, 2015, 10:37 PM), <http://fox4kc.com/2015/10/09/leewood-man-says-peeping-tom-flew-drone-next-to-teen-daughters-window/>; James Queally, *L.A. City Attorney Files First Criminal Charges Under New Drone Ordinance*, L.A. TIMES (Jan. 20, 2016, 2:31 PM), <http://www.latimes.com/local/lanow/la-me-ln-city-attorney-drones-20160120-story.html> (“Two men accused of flying drones in the vicinity of a hospital and police heliports will be the first to face criminal charges under Los Angeles’ new drone restrictions.”); Winnie Wright, *Valdosta Police Officer Fired, Arrested for Eavesdropping with Drone*, WCTV (Sept. 14, 2015), <http://www.wctv.tv/home/headlines/Valdosta-Police-Officer-Fired-Arrested-For-Eavesdropping-With-Drone.html> (reporting a Valdosta Police Department officer was arrested in Lanier County after neighbors reported he eavesdropped on them with a drone). Pop culture is even getting in to the mix, airing episodes on the ABC hit television show *Modern Family* and Comedy Central’s *South Park* involving drones relentlessly following people. *Modern Family: Drone Vs. Idiots*

residents call the police. Yet in many cities and towns, no pertinent laws exist to regulate this activity, leaving some people to resort to self-help remedies such as shooting the drone down or throwing objects at it.¹⁷

The privacy concerns relating to drones stem from their capabilities. These aerial observers enable operators to gather information about people and places via cameras, live video-streaming capability, and sensory-enhancing technologies that can be mounted to the drone.¹⁸ Once collected, information can be stored forever and broadly disseminated electronically.¹⁹ Moreover, the drones' aerial positioning makes it difficult for anyone without prior notice to avoid being caught on their cameras.²⁰

The FAA's mandate to integrate unmanned aircraft into U.S. airspace focuses on safety, not privacy.²¹ The sheer volume of drones

(ABC television broadcast Mar. 4, 2015); *South Park: The Magic Bush* (Comedy Central television broadcast Oct. 29, 2014).

17. See Complaint for Declaratory Judgment and Damages at 1, *Boggs v. Merideth*, No. 3:16-cv-6-DJH, 2016 WL 66951, at *1 (W.D. Ky. Jan. 4, 2016) (drone operator sues his neighbor for shooting down his drone flying at 200 feet above ground); Steven Hoffer, *Kentucky Man Arrested for Shooting Down Neighbor's Drone*, HUFFINGTON POST (Aug. 3, 2015, 12:36 PM), http://www.huffingtonpost.com/entry/man-shoots-neighbors-drone_us_55bf8127e4b0d4f33a034e31; see also Chris Matyszczyk, *Drone Shooter Pleads Guilty*, CNET (Feb. 14, 2016, 12:49 PM), <https://www.cnet.com/news/man-who-shot-down-drone-pleads-guilty/>; Ana Cabrera, *Colorado Town's Vote on Drone Ordinance Postponed*, CNN (Dec. 10, 2013, 9:44 AM), <http://www.cnn.com/2013/12/10/us/colorado-town-drone-ordinance/> (reporting a town in Colorado proposed a bounty for drones shot down).

18. JUST. TECH. INFO. CTR., LAW ENFORCEMENT GUIDANCE CONCERNING SUSPECTED UNAUTHORIZED UAS OPERATIONS 2 (2016), https://www.justnet.org/pdf/UAS-LEA-Guidance-White-Paper-7_8_16.pdf; see also Bill McNeil, *The Top Five Things You Need to Know About Drones and GIS*, DIRECTIONS MAGAZINE (Aug. 25, 2014), <http://www.directionsmag.com/entry/top-five-things-you-need-to-know-about-drones-and-gis/414810>; Joshua Goldman, *This Is What It's Like to Live Stream from a DIG Drone to Facebook*, CNET (May 24, 2016, 10:14 AM), <https://www.cnet.com/news/dji-drones-now-let-you-facebook-live-from-the-sky/>.

19. See *Droneware*, PROGRESSIVE TECH. FED. SYS., http://www.ptfs.com/library/public/PTFS-Collateral/PTFS_Droneware_Overview_web.pdf (last visited Sept. 21, 2016).

20. See Nick Bilton, *When Your Neighbor's Drone Pays an Unwelcome Visit*, N.Y. TIMES (Jan. 27, 2016), <http://www.nytimes.com/2016/01/28/style/neighbors-drones-invade-privacy.html>.

21. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064, 42,190 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 61, et al.) (“[T]he FAA notes that its mission is to provide the safest, most efficient aerospace system in the world, and does not include regulating privacy.”); Cecilia Kang, *F.A.A. Issues Commercial Drone Rules*, N.Y. TIMES (June 21, 2016), http://www.nytimes.com/2016/06/22/technology/drone-rules-commercial-use-faa.html?smprod=nytcare-ipad&smid=nytcare-ipad-share&_r=1 (“Pilots and privacy groups that pushed hard for greater safety provisions and strong surveillance rules expressed fear that clearing the way for more of the flying machines posed new dangers and few protections from spying.”).

in our skies makes accidents inevitable. At alarming rates, pilots of passenger jets are reporting drones flying near airports, flying in restricted airspace, and interfering with the flight paths of commercial airliners, especially during take-off and landing.²² There have been reports of drones malfunctioning and falling from the sky, causing injury and damage to people and property.²³ The insurance industry is beginning to respond to this new market as the number of manufacturers, commercial operators, and homeowners seeking to protect themselves from risk and liability grows.²⁴ Homeowner

22. See e.g., Katie Brace, *Drone Spotted Near Logan Airport for Second Time in a Week*, CBS BOSTON (Jan. 1, 2016, 10:32 PM), <http://boston.cbslocal.com/2016/01/01/drone-spotted-logan-airport-boston/> (two sightings within one week of drones flying in restricted airspace next to Boston's Logan Airport); Jad Mouawad, *Risk to Aircraft from Drones Being Debated*, N.Y. TIMES (Dec. 10, 2015), <http://www.nytimes.com/2015/12/11/business/risk-to-aircraft-from-drones-being-debated.html> (reports of a drone near Kennedy Airport in New York and a near miss between a California Highway Patrol helicopter and a drone); Joseph Serna, *LAPD Detains Man They Say Was Flying Drone Too Close to Police Helicopter*, L.A. TIMES (Aug. 28, 2015, 7:44 AM), <http://www.latimes.com/local/lanow/la-me-ln-lapd-detains-drone-pilot-20150828-story.html> (police helicopter in Los Angeles forced to take evasive maneuvers after a drone flies too close); Scott Sonner, *FAA Probes Drone Near-Miss with Reno Firefighting Copter*, WASH. TIMES (June 17, 2016), <http://www.washingtontimes.com/news/2016/jun/17/faa-probes-drone-near-miss-with-reno-firefighting/> (near miss between a drone and a firefighting helicopter near Reno, Nevada); Craig Whitlock, *Close Encounters on Rise as Small Drones Gain in Popularity*, WASH. POST (June 23, 2014), <http://www.washingtonpost.com/sf/investigative/2014/06/23/close-encounters-with-small-drones-on-rise/> (encounters between commercial jetliners and unmanned vehicles flying several thousand feet in the sky near LaGuardia and LAX airports).

23. Edgar Alvarez, *Drone Camera Almost Takes out a Skier on Live TV*, ENGADGET (Dec. 22, 2015), <http://www.engadget.com/2015/12/22/drone-camera-almost-crashes-into-skier/> (malfunctioning drone almost hits World champion skier at race in Italy); Ryan Kath, *Drone Crashes, Hits 2 People During Marblehead Parade*, CBS BOSTON (May 25, 2015, 5:54 PM), <http://boston.cbslocal.com/2015/05/25/drone-crashes-hits-2-people-during-marblehead-parade/> (drone crashes into building and injures two people at a Memorial Day parade in Marblehead, Massachusetts); Steve Miletich, *Drone Operator Charged with Knocking out Woman at Pride Parade*, SEATTLE TIMES (Oct. 28, 2015, 5:10 PM), <http://www.seattletimes.com/seattle-news/crime/drone-operator-charged-with-knocking-out-woman-at-pride-parade/> (drone crashes into building and knocks a woman unconscious during the Pride Parade in downtown Seattle); Julia Talanova, *Drone Slams into Seating Area at U.S. Open; Teacher Arrested*, CNN (Sept. 5, 2015, 11:31 AM), <http://www.cnn.com/2015/09/04/us/us-open-tennis-drone-arrest/> (New York City teacher arrested after his drone crashes into an empty section of seats during a match at the U.S. Open).

24. See, e.g., *UAS UAV Drone Insurance*, TRANSPORT RISK MGMT., www.transportrisk.com/uavrcfilm.html (last visited Sept. 22, 2016). UAS insurance is comparable to insurance for planes and helicopters. See *Drone Insurance Guide: UAV, UAS, & Quadcopter Liability Coverage*, UAV COACH, <http://uavcoach.com/drone-insurance-guide/> (last updated Oct. 2016). Insurance may include party property coverage for theft or damage to drones. *Id.* It may also include third party liability coverage for property damage and bodily injury caused by drones. *Id.* Manufacturers, retailers, service providers make may seek product liability insurance. *Id.* In other words, the insurance market for drones has enormous potential and is applicable to drones just as it is to many motorized vehicles with some additional coverage such as system hacking.

policies for community associations have started including “risks from drones” as an option in underwriting.²⁵ Eventually, insurance may become mandatory for unmanned aircraft, similar to insurance requirements for motorized vehicles in most states.²⁶ As claims for drone related accidents become more common, so too will the number of lawsuits filed against operators and manufacturers for not only injury to persons, but also for interference with the use and enjoyment of property and intrusions into privacy.²⁷

With the advent of drones, we have entered a new frontier of aerial observation with the unmanned aircraft.²⁸ Enthusiasts want to know which operations are lawful and which are prohibited.²⁹ Homeowners who are watching drones fly over their yards and peer into windows are asking what rights and remedies they have to curtail intrusive drone use.³⁰ The question on many lawmakers’ minds is whether existing laws provide adequate remedies or whether this technology falls through a legal gap.³¹ As is often the case with any new and prolific technology, unmanned aircraft is outpacing the law.³² Controversies over whether a drone can hover above one’s property at low altitudes, whether it is legal to capture images of those on the ground without consent, and whether one may destroy a drone intruding upon one’s privacy are mounting legal issues.³³ The question courts and lawmakers should be addressing is whether existing trespass, nuisance, and privacy laws provide adequate legal

25. *Recreational Drone Risk and Homeowners Insurance*, VERISK, <http://www.verisk.com/between-the-lines/april-2016/recreational-drone-risk-and-homeowners-insurance.html> (last visited Nov. 11, 2016).

26. See Troy A. Rule, *Airspace in an Age of Drones*, 95 B.U. L. REV. 155, 203 (2015).

27. See, e.g., Complaint for Declaratory Judgment and Damages, *supra* note 17; Geoffrey Christopher Rapp, *Unmanned Aerial Exposure: Civil Liability Concerns Arising from Domestic Law Enforcement Employment of Unmanned Aerial Systems*, 85 N.D. L. REV. 623, 632 (2009).

28. See *Should You Be Allowed to Prevent Drones From Flying Over Your Property?*, WALL STREET J. (May 22, 2016, 10:03 PM), <http://www.wsj.com/articles/should-you-be-allowed-to-prevent-drones-from-flying-over-your-property-1463968981>; See Blitz et al., *supra* note 7, at 53

29. *Id.*

30. Rule, *supra* note 26, at 170; ALISSA M. DOLAN & RICHARD THOMPSON II, CONG. RESEARCH SERV., *INTEGRATION OF DRONES INTO DOMESTIC AIRSPACE: SELECTED LEGAL ISSUES* (2013).

31. See Rule, *supra* note 26, at 157.

32. *Id.* at 163–64, 169–70.

33. See *id.* at 170; A. Michael Fromkin & P. Zak Colangelo, *Self Defense Against Robots and Drones*, 48 CONN. L. REV. 1, 3 (2015).

remedies.³⁴ If laws do not provide legal redress for those negatively impacted by drone operations, then people will assuredly take matters into their own hands.³⁵ In some instances where the law is perceived as a fairly blunt tool, people will increasingly resort to self-help remedies.³⁶ Not only are these measures dangerous, but many will result in criminal prosecutions and civil suits over damaged property.³⁷

This article sets out to answer these questions at a time when lawmakers are feverishly proposing drone specific legislation.³⁸ Presently, forty-nine states have considered legislation seeking to regulate drones.³⁹ Thirty-one states have passed laws that limit the use of drones.⁴⁰ The majority of these laws provide for civil penalties and causes of action for capturing images and recordings of individuals via drone without consent.⁴¹ Before the ink dries on these newly minted bills and incidents ripen into lawsuits, we should be asking whether our long-standing common law torts offer remedies of equal or greater value than these rapidly developing new laws. To the extent that common law torts fall short of providing adequate remedies at law, understanding their shortcomings will strengthen future drone legislation.

Part I of this article explains the FAA's current and proposed rules for drone operators in the wake of the massive popularity of drones.⁴²

34. Rapp, *supra* note 27, at 645.

35. Froomkin & Colangelo, *supra* note 33, at 6.

36. See Matyszczyk, *supra* note 17; Hoffer, *supra* note 17.

37. See Complaint for Declaratory Judgment and Damages, *supra* note 17; Ariel Zangla, *David Beesmer Acquitted in Town of Ulster Drone Surveillance Case*, DAILY FREEMAN POLICE NEWS (June 22, 2015, 11:55 AM), <http://www.dailyfreeman.com/general-news/20150622/david-beesmer-acquitted-in-town-of-ulster-drone-surveillance-case>.

38. Eyragon Eidam, *Report: Drone Legislation a Priority for States Across the U.S.*, GOV'T TECH. (July 11, 2016), <http://www.govtech.com/policy/Report-Drone-Legislation-a-Priority-for-States-Across-the-US.html>.

39. *Id.* Every state in the country, except for South Dakota, has considered some kind of rule-making. *Id.* Thirty-two states have taken legislative action to regulate unmanned aircraft. *Id.*

40. *Current Unmanned Aircraft State Law Landscape*, NAT'L CONF. OF STATE LEG. (Oct. 7, 2016), <http://www.ncsl.org/research/transportation/current-unmanned-aircraft-state-law-landscape.aspx>.

41. *State Drone Legislation Continues in Absence of Federal Regulations*, MULTISTATE INSIDER (Nov. 11, 2015), <https://www.multistate.com/insider/2015/11/state-drone-legislation-continues-in-absence-of-federal-regulations/>.

42. See *infra* Part I.

Part II describes the capabilities of unmanned aircraft to help understand the growing concern over privacy intrusions.⁴³ Part III examines the legislative activity among states seeking to limit drone use as a means of protecting privacy.⁴⁴ Part IV explains the application of the torts of trespass, nuisance, and invasion of privacy to drones, and those claims' limitations.⁴⁵ Part V suggests that state and local governments can implement regulations for low altitude airspace that are designed to safeguard privacy and not conflict with current FAA rules.⁴⁶

I. THE FAA AND THE SOARING PRESENCE OF DRONES

In 2015 drone sales worldwide hit an all-time record of 4.3 million.⁴⁷ This marks an increase of 167% in just two years.⁴⁸ Most drones sold in the U.S. retail for between \$400 and \$1400.⁴⁹ It is estimated that Americans bought 400,000 drones during the 2015 holiday season.⁵⁰ Trade industry experts estimated that more than 2.8 million drones were sold in the U.S. in 2016 and 4.8 million will be sold in 2017.⁵¹ At the 2016 Consumer Electronic Show (CES), the world's largest annual electronics show, CES organizers said the U.S. drone market revenue reached \$105 million in 2015, an increase of more than 50% from 2014.⁵² In 2015, the drone industry's revenue totaled \$261 million, a value expected to almost double in 2016.⁵³

43. *See infra* Part II.

44. *See infra* Part III.

45. *See infra* Part IV.

46. *See infra* Part V.

47. Bedard, *supra* note 3.

48. *Id.*

49. Steven A. Rosenberg, *Barnstable Bans Drones from Beaches*, BOSTON GLOBE (Apr. 25, 2016), <https://www.bostonglobe.com/metro/2016/04/25/barnstable-bans-drones-from-beaches/1lrN5zT38JJCnLHUdkOsqL/story.html>.

50. Brustein, *supra* note 4.

51. *Id.*

52. *Id.*

53. Greg Sandoval, *Sales of Commercial Drones Will Soar 84% in 2016—Despite Safety Concerns*, GEEKWIRE.COM (Jan. 18, 2016, 8:47 AM), <http://www.geekwire.com/2016/sales-of-commercially-used-drones-will-soar-84-in-2016-despite-safety-concerns/>.

Demand for drones in the commercial arena is constantly expanding.⁵⁴ The industries seeking permission from the FAA to use drones for commercial activities include businesses involved in agriculture, oil and gas, engineering, real estate, journalism, and filmmaking.⁵⁵ Several universities, such as Emory-Riddle Aeronautics University, Kansas State University, and the University of North Dakota, have begun to offer academic programs and degrees in the field of unmanned aerial vehicles.⁵⁶

In response to mounting private and government pressure to permit commercial enterprises to capitalize on the benefits of this new technology, the FAA released new regulations for persons sixteen years and older wishing to operate, for commercial purposes, a drone weighing less than fifty-five pounds.⁵⁷ Beginning in August 2016, the FAA no longer requires commercial users to seek exemption under section 333 of the 2012 Federal Modernization and Reform Act.⁵⁸ Rather, commercial operations may commence once the operator completes a written exam and is vetted by the TSA.⁵⁹ Commercial drones must stay within the visual line of sight of the pilot or the pilot's "visual observer."⁶⁰ The pilot must avoid controlled space such as airports and must operate only in daylight, under 400 feet above ground level, and with a maximum speed of no more than 100 mph.⁶¹ Drones may not operate above any person not directly participating in the operation.⁶² Additionally, all drones must be

54. Barrie Barber, *Drone-Related Job Growth to Outpace Predictions*, GOV'T TECH. (Aug. 26, 2015), <http://www.govtech.com/budget-finance/Drone-Related-Job-Growth-to-Outpace-Predictions.html>.

55. *Commercial Drone Shipments to Surpass 2.6 Million Units Annually by 2025*, TRACTICA (July 21, 2015), <https://www.tractica.com/newsroom/press-releases/commercial-drone-shipments-to-surpass-2-6-million-units-annually-by-2025-according-to-tractica/>.

56. Dominic Basulto, *Graduates with Drone Skills Are Going to Be in Demand Soon. Here's Why.*, WASH. POST (May 13, 2014), <https://www.washingtonpost.com/news/innovations/wp/2014/05/13/graduates-with-drone-skills-are-going-to-be-in-demand-soon-heres-why/>.

57. *See* Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064, 42,066–76 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 61, et al.).

58. *Id.* at 42,142–43.

59. *Id.* at 42,156.

60. *Id.* at 42,092–97.

61. *Id.* at 42,066 (400 feet ceiling), 42,102 (daytime hours), 42,111 (airspace restrictions), 42,121 (100 mph maximum speed).

62. *Id.* at 42,066.

labeled with the appropriate markings and registration.⁶³ These new rules will save significant time and money, and will spur thousands of businesses to begin executing their plans to use small drones for commercial activities.⁶⁴

Amidst the 2015 holiday shopping season, which prominently featured the latest consumer drones, the FAA instituted rules for small drones used for personal interest and enjoyment.⁶⁵ The rules require that the drone: must not fly within five miles of an airport; must stay out of “drone free zones,” such as sporting events; must stay below 400 feet and within the visual line of sight of the operator; and must comply with all state and local laws.⁶⁶ The mandate also requires the operator to register his drone with the FAA before taking flight.⁶⁷ Registration includes providing a current address and email and paying a five dollar fee.⁶⁸ This registration requirement applies to any operator thirteen years or older.⁶⁹ The registration requirement is meant to make it easier to track down drone owners should an incident requiring investigation arise.⁷⁰ Officials are spending time and resources with increased frequency trying to track down owners whose drones were spotted flying too close to commercial airliners or within restricted airspace, were involved in a crash, or were

63. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064, 42,174–75 (June 28, 2016) (to be codified at 14 C.F.R. pt. 21, 43, 61, et al.).

64. *See id.* at 42,067. The new rule provides a relatively limited authorization for commercial drones to transport property for compensation. *Id.* at 42,074–77. Notably, the flight must occur within the bounds of one state and the flight must be conducted within the visual line of sight of the remote pilot in command or of a visual observer. *Id.* at 42,076. To be clear, the delivery options are limited and do not open the skies to deliver of products by autonomous drones. *Id.*

65. FAA Announces Small UAS Registration Rule, *supra* note 9.

66. Registration and Marking Requirements for Small Unmanned Aircraft, 80 Fed. Reg. 78,593, (Dec. 16, 2015) (to be codified at 14 C.F.R. pts. 1, 45, 47, et al.); *see also* FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, § 336, 125 Stat. 11, 77 (codified as amended in scattered sections of 49 U.S.C.).

67. FAA Announces Small UAS Registration Rule, *supra* note 9. As of February 2016, the FAA reported 370,000 such drones were registered. @FAANews, TWITTER (Feb. 23 2016, 11:08 AM), <https://twitter.com/FAANews/status/702208529818636288>.

68. FAA Announces Small UAS Registration Rule, *supra* note 9.

69. *Id.*

70. Hillary B. Farber, *Let's Make It Easy to Be Responsible with Drones*, PROVIDENCE J. (Dec. 29, 2015, 2:01 AM), <http://www.providencejournal.com/article/20151229/OPINION/151229411> [hereinafter Farber, *Let's Make It Easy*].

conducting unlawful surveillance.⁷¹ If an operator fails to follow these rules or operates in a careless or reckless manner, the operator can be fined by the FAA.⁷²

With the vast number of drones taking flight, it is untenable for the FAA to patrol the skies and monitor compliance with the regulations. Simply put, the FAA does not have the resources to undertake both of these tasks.⁷³ As a result, local law enforcement will likely be the first to respond to complaints about drones flying too close to people and property.⁷⁴ Quite likely, the FAA will only become aware of alleged infractions after someone reports an incident.⁷⁵ Individuals seeking damages for harm caused by a drone will seek recourse from the courts, despite any investigation the FAA may initiate.⁷⁶ With the new regulations permitting many more drones to take to the skies,

71. Jim Moore, *Drones vs. FAA*, AIRCRAFT OWNERS AND PILOTS ASS'N (Jan. 7, 2016), <https://www.aopa.org/news-and-media/all-news/2016/january/07/drones-v-faa>.

72. See 14 C.F.R. § 91.13(a) (2016). According to one news agency, the FAA has issued fines to 24 drone operators or companies for alleged infractions with the regulations. Jason Koebler, *The FAA Gave Us a List of Every Drone Pilot Who Has Ever Been Fined*, MOTHERBOARD (June 1, 2016, 2:20 PM), <http://motherboard.vice.com/read/faa-drone-fines>. Fines imposed by the FAA range from \$400 to \$5,500. *Id.* In August 2015, a Minnesota man was fined \$55,000 by the FAA for flying his drone in a reckless and careless manner. Melissa Quinn, *He Flew a Drone to Take Photos for a Friend. Now He Faces \$55K in Government Fines*, DAILY SIGNAL (June 12, 2016), <http://dailysignal.com/2016/06/12/he-flew-a-drone-to-take-photos-for-a-friend-now-hes-facing-55k-in-government-fines/>. In 2012, Raphael Pirker was fined \$10,000 by the FAA for flying a powered glider around the University of Virginia in violation of FAA rules that prohibits careless and reckless operation of an aircraft. Jack Nicas, *U.S. Federal Aviation Administration Settles with Videographer over Drones*, WALL STREET J. (Jan. 22, 2015, 6:32 PM), <http://www.wsj.com/articles/u-s-federal-aviation-administration-settles-with-videographer-over-drones-1421960972>.

73. *FAA Issues UAS Guidance for Law Enforcement*, FED. AVIATION ADMIN. (Jan. 8, 2015), <https://www.faa.gov/news/updates/?newsId=81244>; Scott Kraus, *Shifting Landscape for Drones in the Lehigh Valley*, MORNING CALL (Nov. 21, 2015, 6:55 PM), <http://www.mcall.com/news/local/mc-lehigh-valley-drones-20151121-story.html>; Steven Nelson, *FAA Wants Local Cops to Be Drone Police*, U.S. NEWS (Feb. 24, 2015, 5:27 PM), <http://www.usnews.com/news/articles/2015/02/24/faa-wants-local-cops-to-be-drone-police>.

74. JUST. TECH. INFO. CTR., *supra* note 18, at 1; see also *FAA Issues UAS Guidance for Law Enforcement*, *supra* note 73.

75. See Nelson, *supra* note 73. Proving these infractions to the FAA may be difficult in that there may be a lack of evidence that the drone was operating in a prohibited manner, delays in response time from the FAA and substantial time lapse in resolving the alleged violation. See *FAA Issues UAS Guidance for Law Enforcement*, *supra* note 73. In many instances the FAA investigation may be thwarted by lack of evidence pertaining to the manner of operation, and even identifying the operator. See *id.*

76. Frederick E. Blakelock, *Drone Wars: Will the Litigation Awaken?*, LEXOLOGY (Feb. 16, 2016), <http://www.lexology.com/library/detail.aspx?g=f8c9887f-d70a-4a25-98f4-abbbd8161e32>.

courts will soon be involved in adjudicating matters involving drones.⁷⁷

II. UAS CAPABILITIES RAISE SAFETY AND PRIVACY CONCERNS

Unmanned aircraft systems (“UAS”) are versatile, efficient, and often designed to be undetectable.⁷⁸ In light of their aerial perspective, UAS can cheaply and efficiently amass vast amounts of information about people and places.⁷⁹ The unmanned aerial vehicle is simply the platform for enabling surveillance; the on-board instruments gather, store, and transmit the data.⁸⁰ Most UAS are equipped with cameras with high-powered zoom lenses and photo sensors for high-resolution imagery.⁸¹ The more sophisticated systems offer more advanced on-board instruments, such as infrared sensors, night vision cameras, GPS systems, wi-fi sniffers, and automated license plate readers.⁸² They range in weight from tons to grams, depending on their design and purpose.⁸³ These systems are easily operable from a ground control unit—often a smartphone or tablet.⁸⁴ They can hover and fly in all directions.⁸⁵ Many drones can sustain flight times of up to twenty minutes.⁸⁶ As the technology develops, the flight time will increase exponentially.⁸⁷ Most drones are battery-powered, although some are powered by fuel or solar.⁸⁸

77. *See id.*

78. Hillary B. Farber, *Sensing and Surveillance: Constitutional Privacy Issues of Unmanned Aircraft in UNMANNED AIRCRAFT IN THE NATIONAL AIRSPACE: CRITICAL ISSUES, TECHNOLOGY, AND THE LAW* 225, 228 (Donna A. Dulo ed., 2015).

79. *Id.* at 229.

80. *Id.* at 228.

81. *Id.*

82. *Id.* at 228–29.

83. *Id.* at 228.

84. JUST. TECH. INFO. CTR., *supra* note 18, at 2; *see also* Briley Kenney, *5 Remote Control Drones You Can Take to the Skies with*, CHEATSHEET (Sept. 30, 2015), <http://www.cheatsheet.com/gear-style/5-remote-control-drones-you-can-take-to-the-skies-with.html?a=viewall>.

85. JUST. TECH. INFO. CTR., *supra* note 18, at 2; Farber, *supra* note 78, at 228.

86. *10 Drones with the Best Flight Times*, DRONES GLOBE (Mar. 2, 2016), <http://www.dronesglobe.com/guide/long-flight-time/>. The Justice Technology Information Center reports that flight times range anywhere from ten to forty-five minutes. JUST. TECH. INFO. CTR., *supra* note 18, at 2.

87. *E.g.*, Sumit Passary, *Hydrogen-Powered Drone Flies 6 Times Longer than Drones Using Normal Battery*, TECH TIMES (Mar. 29, 2016, 10:08 AM), <http://www.techtimes.com/articles/144925/20160329/>

Many operators fly drones around their neighborhoods, over fenced-in backyards, near windows, and even around medical facilities.⁸⁹ With its mounted camera, the drone can capture images and transmit video simultaneously to the ground unit.⁹⁰ All of the data collected by the drone can be downloaded, stored, and disseminated like any other digital data.⁹¹ Unmanned aerial surveillance can be surreptitious and nefarious.⁹² Compared to their manned counterparts, drones are almost silent and cannot easily be detected at several hundred feet in the sky.⁹³

In 2015, New York had its first criminal prosecution of a drone user for attempted unlawful surveillance.⁹⁴ The case involved a New York resident, David Beesmer, charged with flying his lightweight, quad-copter drone around the premises of the Mid-Hudson Valley Medical Facility.⁹⁵ After dropping his mother off for a medical appointment, Beesmer launched his drone from the facility parking lot.⁹⁶ When staff observed an object flying outside the windows of the examination rooms, they called police.⁹⁷ Beesmer was charged with felony unlawful surveillance under the New York Penal Code.⁹⁸

hydrogen-powered-drone-flies-6-times-longer-than-drones-using-normal-battery.htm.

88. Adi Arriansyah, *The 6 Known Ways to Power a Drone*, TECH IN ASIA (Jun. 23, 2016, 8:58 AM), <https://www.techinasia.com/talk/6-known-ways-power-a-drone>.

89. Kellan Howell, *Drone Hovers Outside Hawaii Woman's Window; No Crime Committed*, WASH. TIMES (Aug. 12, 2015), <http://www.washingtontimes.com/news/2015/aug/12/drone-hovers-outside-hawaii-womans-window-no-crime/>; *Leewood Man Says Peeping Tom Flew Drone Next to Teen Daughter's Window*, *supra* note 16; Chris Matyszczyk, *Peeping Drone Captures Woman Sunbathing Topless*, CNET (Nov. 17, 2014, 8:55 AM), <https://www.cnet.com/news/peeping-drone-captures-woman-sunbathing-topless/>; Zangla, *supra* note 37.

90. See JUST. TECH. INFO. CTR., *supra* note 18, at 2; see also *FPV Video Transmitter Buying Guide*, DRONETREST (Dec. 6, 2015), <http://www.dronetrest.com/t/fpv-video-transmitter-buying-guide/1470>.

91. JUST. TECH. INFO. CTR., *supra* note 18, at 2; Farber, *supra* note 78, at 228.

92. MATTHEW T. DEGARMO, MITRE CTR. FOR ADVANCED AVIATION SYS. DEV., ISSUES CONCERNING INTEGRATION OF UNMANNED AERIAL VEHICLES IN CIVIL AIRSPACE 2–23 (2004), https://www.mitre.org/sites/default/files/pdf/04_1232.pdf.

93. See Farber, *supra* note 78 at 225.

94. See Zangla, *supra* note 37.

95. *Photographer Acquitted on UAV Charges*, AERO NEWS NETWORK (Jun. 24, 2015), <http://www.aero-news.net/index.cfm?do=main.textpost&id=03e3afe2-1cbc-4132-a42b-25a956ac7421>.

96. *Id.*

97. Paula A. Mitchell, *Suspect in Town of Ulster Drone Case Rejects Plea Deal*, DAILY FREEMAN (Nov. 18, 2014, 5:13 PM), <http://www.dailyfreeman.com/article/DF/20141118/NEWS/141119646>.

98. *Id.*; N.Y. PENAL LAW § 250.45 (McKinney 2014).

Ultimately, Beesmer was acquitted by a jury.⁹⁹ The statute under which Beesmer was charged requires the government prove beyond a reasonable doubt that Beesmer had the intent to see inside the structure.¹⁰⁰ However, the tinted windows of the medical facility made it virtually impossible to see inside.¹⁰¹ Nonetheless, the Beesmer case raises questions as to how much privacy people can expect with aerial vehicles equipped with cameras flying around our skies.¹⁰² The Beesmer case is hardly an isolated incident. Some municipalities initiated drone-free zones for particular events and structures due to concerns over low-flying cameras hovering over persons and private property.¹⁰³

The privacy concerns extend beyond the collection of information by the drone. The digital data a drone collects can be easily downloaded and shared with others instantaneously.¹⁰⁴ Suppose Beesmer was able to capture images of those inside the facility. Furthermore, suppose Beesmer then uploaded those images to a social media site and shared them with others. Would that constitute a violation of federal or state law? Would it matter if the images of people were captured outside the medical facility? The U.S. Supreme

99. See Zangla, *supra* note 37.

100. See N.Y. PENAL LAW § 250.45 (McKinney 2014).

101. Zangla, *supra* note 37.

102. To be sure, government use of drones raises significant privacy issues and unresolved questions about whether the government can conduct unmanned aerial surveillance without complying with Fourth Amendment requirements. See generally Hillary B. Farber, *Eyes in the Sky: Constitutional and Regulatory Approaches to Domestic Drone Deployment*, 64 Syracuse L. Rev. 1, at 4 [hereinafter Farber, *Eyes in the Sky*]; John Villasenor, *Observation from Above: Unmanned Aircraft Systems and Privacy*, 36 HARV. J.L. & PUB. POL'Y 457 (2013). But non-governmental actors using drones for recreational or commercial purposes does not implicate Fourth Amendment protections against unreasonable searches and seizures. See Farber, *supra* note 78, at 241–42; Villasenor, *supra*, at 498. A person seeking a remedy for an alleged intrusion to one's privacy must rely on a private cause of action. These types of claims will be grounded in tort law, using the traditional common law torts of trespass, nuisance, and privacy torts to mount a claim against a drone operator. See Villasenor, *supra*, at 498–505.

103. E.g., Aaron Mamiit, *Sorry, No Drones Allowed for Pope's US Visit*, TECH TIMES (Sept. 16, 2015, 7:54 AM), <http://www.techtimes.com/articles/85120/20150916/sorry-no-drones-allowed-for-popes-us-visit.htm> (prohibiting drones in the Pope's vicinity during his U.S. visit); Rosenberg, *supra* note 49 (banning drones over Cape Cod beaches); *Security in Cleveland for GOP Convention Likely Ramping Up, Expert Says*, WTOP (July 12, 2016, 2:56 AM), <http://wtop.com/politics/2016/07/security-in-cleveland-for-gop-convention-likely-ramping-up-expert-says/> (banning drones in Cleveland during the Republican National Convention).

104. See *Data Sharing*, DRONEDEPLOY, <http://support.dronedeploy.com/docs/data-sharing> (last visited Sept. 28, 2015).

Court poignantly acknowledged that a significant amount can be learned about a person just by tracking his movements in public.¹⁰⁵ Simply aggregating the coordinates of a person's location can reveal information such as the state of one's physical health, familial status, recreational habits, education level, social and political affiliations, financial status, religiosity, and employment.¹⁰⁶ The type of technology the Court discussed in *United States v. Jones* was a global positioning system used to track one individual.¹⁰⁷ The breadth and scope of information that can be amassed by aerial surveillance tracking large numbers of people is far greater.¹⁰⁸

The Beesmer case raises questions as to whether existing criminal laws are adequate to protect the privacy interests of individuals in the face of this powerful technology. Many states have criminal statutes similar to the one under which Beesmer was charged.¹⁰⁹ Some of these criminal statutes are known as voyeurism laws.¹¹⁰ All require proof of the defendant's intent to capture information pertaining to the target of the surveillance.¹¹¹ The *mens rea* requirement poses difficulties for the prosecution if a drone operator cannot see what he is filming and only learns of the existence of the images after the flight concludes.

105. *United States v. Jones*, 565 U.S. 400, 415–16 (2012) (Sotomayor, J., concurring) (citations omitted).

GPS monitoring generates a precise, comprehensive record of a person's public movements that reflects a wealth of detail about her familial, political, professional, religious, and sexual associations. . . . The Government can store such records and efficiently mine them for information years into the future. And because GPS monitoring is cheap in comparison to conventional surveillance techniques and, by design, proceeds surreptitiously, it evades the ordinary checks that constrain abusive law enforcement practices[.]

Id.

106. *See id.*

107. *Id.* at 402–03.

108. *See* Farber, *Eyes in the Sky*, *supra* note 102, at 6.

109. *See generally* NAT'L DIST. ATTORNEYS ASS'N, NDAA VOYEURISM COMPILATION (2010), <http://www.ndaajustice.org/pdf/Voyeurism%202010.pdf> (compiling surveillance states across the United States). Statutes may have different names such as "Video Voyeurism" and "Unlawful Surveillance." *Id.*

110. *See id.*

111. *See id.*

III. UAS LEGISLATION THROUGHOUT THE UNITED STATES

In response to the vast privacy concerns over these aerial observers, lawmakers created legislation limiting the use of unmanned aircraft systems. Since 2013 a flurry of state legislative activity has restricted how, and by whom, unmanned aircraft can be operated.¹¹² Between 2013 and 2016, every state with the exception of South Dakota has considered legislation on drone use.¹¹³ Presently, thirty-one states have laws that expressly regulate the operation of unmanned aircraft.¹¹⁴ These restrictions limit the collection, retention, and dissemination of information gathered by unmanned aircraft systems.¹¹⁵ The first states to adopt legislation on UAS confined their bills to restrict government use of UAS.¹¹⁶ Florida and Idaho were two of the first states to pass legislation specific to UAS.¹¹⁷ The main purpose of these laws was to require law enforcement to obtain a warrant prior to using drones for criminal investigations unless exigent circumstances apply.¹¹⁸ Other states followed suit, almost all of which included exceptions for emergencies, search and rescue missions, and terrorist threats.¹¹⁹

By 2014 states were widening the scope of their UAS restrictions to include private use of unmanned aircraft. Among the thirty-one states with drone laws, sixteen include restrictions on private

112. *Current Unmanned Aircraft State Law Landscape*, *supra* note 40.

113. *ESSEX*, *supra* note 7, at 5

114. *See* Farber, *Let's Make It Easy*, *supra* note 70.

115. *See* *Current Unmanned Aircraft State Law Landscape*, *supra* note 40.

116. *See* 2013 State Unmanned Aircraft Systems Legislation, NAT'L CONF. OF STATE LEG. (July 2, 2015), <http://www.ncsl.org/research/transportation/2013-state-unmanned-aircraft-systems-uas-legislation.aspx>.

117. *See* S.B. 92, 115th Leg., Reg. Sess. (Fla. 2013); S.B. 1134, 62d Leg., 1st Reg. Sess. (Idaho 2013).

118. *See, e.g.*, H.B. 255, 28th Leg. (Alaska 2014); S.B. 92, 2013 Leg., 115th Reg. Sess. (Fla. 2013); S.B. 1134, 62d Leg., 1st Reg. Sess. (Idaho 2013); S.B. 1587, 98th Gen. Assemb., 1st Reg. Sess. (Ill. 2013); S.B. 1331, 2013 Gen. Assemb., Reg. Sess. (Va. 2013); S.B. 196, 2013–2014 Reg. Sess. (Wis. 2014).

119. *See, e.g.*, S.B. 744, 2013 Gen. Assemb. (N.C. 2014); H.B. 2710, 77th Leg. Assemb. (Or. 2013); S.B. 796, 108th Gen. Assemb., 1st Reg. Sess. (Tenn. 2013); H.B. 912, 83d Leg. (Tex. 2013); S.B. 167, 2014 Gen. Sess. (Utah 2014); S.B. 1331, 2013 Gen. Assemb., Reg. Sess. (Va. 2013); S.B. 196, 2013–2014 Reg. Sess. (Wis. 2014).

operators.¹²⁰ Because unmanned aircraft systems are relatively inexpensive, hugely popular, and capable of capturing images from hundreds of feet in the sky, the most common restriction for private users is the prohibition on recording a person without his or her consent.¹²¹ Florida was one of the first states to pass legislation restricting government use of unmanned aircraft.¹²² Two years later, the Florida legislature voted to prohibit private individuals from using drones to record images of persons or property without prior consent.¹²³ The law grants a cause of action against anyone who, without prior consent, uses a drone to capture images of persons or objects on private property if a reasonable expectation of privacy exists.¹²⁴ The Florida statute defines reasonable expectation of privacy as being when a person cannot be seen by others at ground level where they have a legal right to be regardless of whether he or she is observable from the sky.¹²⁵ Many of these new laws also include altitude restrictions, the requirement that the operator maintain a visual line of sight with the device at all times, and prohibitions on nighttime use.¹²⁶

Oregon and Nevada take a property rights approach to airspace.¹²⁷ Oregon passed a law granting landowners a civil cause of action against anyone who flies a drone over another's property at a height of less than 400 feet.¹²⁸ The law allows treble damages for any injury to person or property caused by the drone.¹²⁹ Moreover, one provision of the statute grants authority to the Attorney General to

120. *See, e.g.*, H.B. 255, 28th Leg. (Alaska 2014); FLA. STAT. § 934.50 (2015); S.B. 1134, 62d Leg., 1st Reg. Sess. (Idaho 2013); H.B. 1009, 118th Gen. Assemb. (Ind. 2014); H.B. 2289, 85th Gen. Assemb. (Iowa 2014); H.B. 1029, 2014 Reg. Sess. (La. 2014); S.B. 744, 2013 Gen. Assemb. (N.C. 2014); H.B. 2710, 77th Leg. Assemb. (Or. 2013); H.B. 912, 83d Leg. (Tex. 2013); S.B. 167, 2014 Gen. Sess. (Utah 2014); S.B. 1331, S.B. 1331, 2013 Gen. Assemb., Reg. Sess. (Va. 2013); S.B. 196, 2013–2014 Reg. Sess. (Wis. 2014); *see also Current Unmanned Aircraft State Law Landscape, supra* note 40.

121. *See e.g.*, CAL. CIV. CODE § 1708.8(b) (2015); FLA. STAT. § 934.50(3)(b) (2015).

122. S.B. 92, 2013 Leg., 115th Reg. Sess. (Fla. 2013).

123. FLA. STAT. § 934.50(3)(b) (2015).

124. *Id.*

125. *Id.*

126. Rapp, *supra* note 14.

127. *See* OR. REV. STAT. § 837.380 (2016); Assemb. B. 239, 78th Leg., Reg. Sess. (Nev. 2015).

128. OR. REV. STAT. § 837.380.

129. *Id.* § 837.380(4).

bring a nuisance or trespass suit against a drone operator.¹³⁰ Similarly, every property owner in Nevada is authorized to prohibit a drone from entering the airspace up to 250 feet above the owner's property.¹³¹ Nevada's law creates an action in trespass for anyone flying a drone less than 250 feet over another person's property without permission.¹³² This law took effect in October 2015.¹³³

Hawaii proposed an amendment to its nuisance law by adding a reference to unmanned aircraft to avoid the interpretation that the statute did not apply to unmanned aerial vehicles.¹³⁴ The proposed language included, "[i]t shall be unlawful for any person to operate an unmanned aircraft system across or above the state in a manner that constitutes a nuisance to the public, a person or the property of another."¹³⁵ Another recently proposed law grants a cause of action to anyone who, without consent, is photographed or is the subject of surveillance or observation against the unmanned systems operator.¹³⁶

In October 2015, the California legislature passed AB 856—otherwise known as the “anti-paparazzi statute.”¹³⁷ The law prohibits using a drone to capture an image or recording of a person engaging in a private, personal, or familial activity without permission.¹³⁸

Many states are proposing new criminal laws specific to drones.¹³⁹ For instance, the Rhode Island General Assembly introduced a law making it a felony to use a drone to look into a dwelling or other building.¹⁴⁰ Similarly, Michigan proposes to make it a crime to

130. *Id.* § 837.380(6).

131. NEV. REV. STAT § 493.103 (2015).

132. *Id.*; *see also infra* note 250.

133. 2015 Nev. Stat. 327.

134. H.B. 1657, 27th Leg. (Haw. 2014).

135. *Id.*

136. H.B. 609 § 2, 28th Leg. (Haw. 2015).

137. CAL. CIV. CODE § 1708.8(a) (2015); *Current Unmanned Aircraft State Law Landscape, supra* note 40.

138. CAL. CIV. CODE § 1708.8(a); *Current Unmanned Aircraft State Law Landscape, supra* note 40. As has been mentioned, the aerial perspective poses challenges for anyone seeking to conceal himself from view via conventional approaches such as installing a tall fence, gates around one's property and security personnel to keep out the fan base. Farber, *supra* note 78, at 225.

139. *See* H.B. 7334, 2016 Leg. (R.I. 2016); H.B. 4868 § 98(1)(D), 98th Leg. (Mich. 2016); H.B. 609, 28th Leg. (Haw. 2015).

140. H.B. 7334, 2016 Leg. (R.I. 2016).

knowingly operate an unmanned aircraft to trespass above the land of another person with the intent to subject them to eavesdropping or surveillance.¹⁴¹ Finally, Hawaii initiated legislation curtailing unmanned aircraft surveillance by private entities out of concern for the privacy of its citizens and the freedom from unwanted surveillance.¹⁴² The proposed law makes it a criminal offense for any private entity to use an unmanned aircraft to conduct surveillance, observe, or photograph a person or dwelling in a non-public setting without prior written consent.¹⁴³

The catalyst for the precipitous rise in drone legislation is privacy.¹⁴⁴ Lawmakers are largely concerned with the potential threat to personal privacy presented by the proliferation of these aerial observers.¹⁴⁵ Efforts to create an enforceable privacy interest are evinced in the titles of the legislation: the Florida Freedom from Unwanted Surveillance Act;¹⁴⁶ the Idaho Preserving Freedom from Unwarranted Surveillance Act;¹⁴⁷ and the Illinois Freedom from Drone Surveillance Act.¹⁴⁸ Georgia's preamble to an act regulating flights over land and waters also contains strong privacy language.¹⁴⁹

141. H.B. 4868 § 98(1)(D), 98th Leg. (Mich. 2016).

142. H.B. 609 § 1, 28th Leg. (Haw. 2015).

143. *Id.* § 2.

144. Robert Holly, *States Restrict Drone Use Because of Privacy Concerns*, MIDWEST CTR. FOR INVESTIGATIVE REPORTING (Mar. 21, 2014), <http://investigatemidwest.org/2014/03/21/states-restrict-drone-use-because-of-privacy-concerns/>.

145. *See id.*

146. Florida Freedom From Unwanted Surveillance Act, FLA. STAT. § 934.50 (2013).

147. Preserving Freedom from Unwarranted Surveillance Act, IDAHO CODE § 21-213 (2013).

148. Freedom from Drone Surveillance Act, 725 ILL. COMP. STAT. 167 (2013).

149. H.B. 157, 153rd Gen. Assemb., Reg. Sess. (Ga. 2015).

The right to privacy is fundamental in a free and civilized society. Persons within the state of Georgia have a reasonable and justifiable expectation of privacy that they will not be monitored by unmanned aerial vehicles (UAVs) by law enforcement agents of the United States or the State of Georgia without a warrant based upon probable cause first being issued. The potential benefit to law enforcement and criminal justice from the use of UAVs without a warrant first being issued is far outweighed by the degradation to the fundamental right to privacy secured by the Constitution of the United States and the Constitution of Georgia that will result from law enforcement use of UAVs without first obtaining a warrant.

Id.

Maintaining one's privacy has grown increasingly complicated with advancements in technology. Reliance on third parties to provide the means by which people communicate and transact business—personal or professional—is unavoidable.¹⁵⁰ Every day we relinquish and store a multitude of personal information using our digital devices.¹⁵¹ Lawmakers have focused their sights on drones because of how quickly they have proliferated throughout society.¹⁵² The legislative approach has been to design laws that aim to protect individual privacy by regulating how the technology should be used.¹⁵³ In some instances, these legislative measures have filled a gap in the law in order to curtail abuses of the technology.¹⁵⁴ Some critics of this approach argue that it is inefficient—even short-sighted—to legislate drone technology as opposed to legislating conduct and then assessing on a case-by-case basis whether the technology being used to bring about the harm—for example, pervasive surveillance—fits within the statute.¹⁵⁵ One scholar argues that “this technology-centric approach creates perverse results, allowing the use of extremely sophisticated and pervasive surveillance technologies from manned aircraft, while potentially disallowing benign—non-privacy-invasive—uses of drones for mundane tasks like accident and crime scene documentation, or monitoring of industrial pollution and other environmental harms.”¹⁵⁶

150. *United States v. Jones*, 132 S.Ct. 945, 957 (2012) (Sotomayor, J., concurring).

[I]t may be necessary to reconsider the premise that an individual has no reasonable expectation of privacy in information voluntarily disclosed to third parties This approach is ill-suited to the digital age, in which people reveal a great deal of information about themselves to third parties in the course of carrying out mundane tasks.

Id.

151. *See* Farber, *Eyes in the Sky*, *supra* note 102, at 17. “For instance, online banking, online payment systems, renewing a driver’s license or registration, making airline reservations, and paying bar dues are all necessary tasks that require disclosure of confidential information.” *Id.*

152. *See* Holly, *supra* note 144.

153. *See e.g.*, H.B. 1349, 90th Gen. Assemb., Reg. Sess. (Ariz. 2015); S.B. 856, 2015 Reg. Sess. (Cal. 2015); S.B. 2022, 2015 Reg. Sess. (Miss. 2015).

154. *See, e.g.*, Electronic Communications Privacy Act, 18 U.S.C. §§ 2510-2522 (2012).

155. Roger Clarke & Lyria Bennett Moses, *The Regulation of Civilian Drones’ Impacts on Public Safety*, 30 COMPUTER L. & SECURITY REV. 263, 267 (2014); Gregory S. McNeal, *Drones and the Future of Aerial Surveillance*, 84 GEO. WASH. L. REV. 354, 360, 365 (2016).

156. McNeal, *supra* note 155, at 360.

While it is true that other emerging technologies pose risks of intrusions into one's private matters, none are as prolific as drones at the present time. Currently, there is no other technology that is as accessible to the general public and poses as tangible a threat to privacy and safety as the drone.¹⁵⁷ Millions of people own drones and many want to know how and where they can use them before they operate them.¹⁵⁸ From a legislative perspective it is hard to deny the temptation and motivation to craft laws designed specifically to address the concerns and questions that so many in the public have about drone use.¹⁵⁹

As lawmakers consider new legislation aimed at narrowing the permissible use of drones, it is prudent to ask whether existing laws already prohibit the targeted conduct.¹⁶⁰ If flying a drone over someone's backyard at a relatively low altitude constitutes a trespass or a nuisance, then what is the utility of passing another law that specifically forbids drones from engaging in such conduct? If taking a photograph of someone without consent can constitute an invasion of privacy, depending on whether an expectation of privacy exists, then why pass a new law that states it is illegal to do that same thing with a drone?

IV. COMMON LAW TORTS AND THEIR APPLICABILITY TO NEW TECHNOLOGY—DRONES

The capability of drones, now and in the future, appears to extend beyond the reach of traditional common law torts designed to protect

157. See JUST. TECH. INFO. CTR., *supra* note 18, at 2–3; see also Carol Cratty, *FBI Uses Drones for Surveillance in U.S.*, CNN: POLITICS (June 20, 2013, 7:27 AM), www.cnn.com/2013/06/19/politics/fbi-drone/ (“I think the greatest threat to the privacy of Americans is the drone” (quoting Senate Intelligence Comm. Chairman Dianne Feinstein)); see also Farber, *Eyes in the Sky*, *supra* note 102, at 7.

158. See Rule, *supra* note 26, at 165; Craig Whitlock, *Rogue Drones a Growing Nuisance Across the U.S.*, WASH. POST, (Aug. 10, 2015), https://www.washingtonpost.com/world/national-security/how-rogue-drones-are-rapidly-becoming-a-national-nuisance/2015/08/10/9c05d63c-3f61-11e5-8d45-d815146f81fa_story.html.

159. See, e.g., Freedom from Unwarranted Surveillance Act, FLA. STAT. § 934.50 (2016). The plethora of proposed legislation among all the states is testament to the belief among lawmakers that they need to legislate drones specifically. See generally ESSEX, *supra* note 7.

160. For a description of state laws that might address improper drone conduct see JUST. TECH. INFO. CTR., *supra* note 18, at 5–7.

privacy and property rights. Torts such as trespass, nuisance, and intrusion upon seclusion are limited in significant ways when applied to drone technology.¹⁶¹ This is due in large part to a drone's versatility to operate at lower and higher elevations without compromising its ability to capture the quality of the imagery at ground level.¹⁶² Highly sophisticated, sensory enhancing instruments that are equipped to the drone's platform make proximity to the target of the surveillance hardly relevant.¹⁶³ On the other hand, physical proximity is a key element in trespass and intrusion upon seclusion claims.¹⁶⁴ Moreover, because of their size, drones will not typically whip up soil, scare livestock, or disturb one's use and enjoyment of land in ways that courts have traditionally found to constitute a nuisance.¹⁶⁵ In this regard, a plaintiff's circumstances in the drone context may be factually distinct from traditional claims under these three torts. This may well undermine any reliance on our current tort scheme to provide relief on controversies involving drones. Identifying the limitations of these traditional torts when applied to unmanned aircraft may well strengthen the laws that are being drafted specifically for drones.

A. *Trespass*

The tort of trespass is recognized in every jurisdiction.¹⁶⁶ Trespass is a cause of action enabling a plaintiff to protect a possessory interest in land.¹⁶⁷ The Restatement Second of Torts distinguishes

161. See Villasenor, *supra* note 102, at 499–503.

162. See, e.g., *Phantom 4 Specs*, DJI, <https://www.dji.com/phantom-4/info> (last visited Oct. 3, 2016). For instance, a drone may hover over a property at elevations above 400 feet and capture high-resolution photographs of the same quality as if it were flying at fifty feet above ground. *Id.*

163. See RICHARD M. THOMPSON II, CONG. RESEARCH SERV., DOMESTIC DRONES AND PRIVACY: A PRIMER 3 (2015).

164. See RESTATEMENT (SECOND) OF TORTS § 159 cmt. j (AM. LAW INST. 1979).

165. See *Id.* § 821D cmt. b.

166. Rebecca L. Rausch, *Reframing ROE: Property Over Privacy*, 27 BERKLEY J. GENDER L. & JUST. 28, 51 (2012).

167. RESTATEMENT (SECOND) OF TORTS § 158 (AM. LAW INST. 1979). Although the Restatement imposes the burden that the interference be substantial, it is unclear how substantial the interference need be, because as the comments to the Restatement point out—even waving your arm over a fence and into a neighbor's property constitutes a trespass. *Id.* § 159 cmt. f. illus. 3; see e.g., *Herrin v. Sutherland*, 241 P. 328, 329, 332 (Mont. 1925) (finding that a bullet disturbed the plaintiff's "quiet,

between real property and airspace above one's land.¹⁶⁸ Section 158 of the Restatement establishes the elements for physical trespass to land.¹⁶⁹ For a claim to be successful, the plaintiff must show that the defendant: (1) entered the land without authorization, or "cause[d] a thing or a third person to do so"; (2) "remain[ed] on the land"; or (3) "fail[ed] to remove from the land a thing which he [had] a duty to remove."¹⁷⁰ A person who intentionally invades another's possessory property interest may be liable even if the person did not cause any particular harm.¹⁷¹ As early as 1835, the Supreme Court of North Carolina recognized that every intentional unauthorized entry onto someone else's land is a trespass.¹⁷² The court reasoned that every such entry results in some damage, whether actual or inferred.¹⁷³

Trespass actions may also include incursions beneath the surface of the ground or in the airspace above the land *to a reasonable extent*.¹⁷⁴ Flight by an aircraft in the air space above the land of another is trespass if (1) "[the aircraft] enters into the immediate reaches of the air space next to the land, and (2) [it] interferes substantially with the other's use and enjoyment of the land."¹⁷⁵ Flying at a low altitude may constitute a trespass even when the object never touches down on the property.¹⁷⁶ Courts will consider

undisturbed, peaceful enjoyment" of land and was thus a trespass where defendant was standing still and fired his shotgun at ducks, and the bullet flew over the plaintiff's land without touching down).

168. See RESTATEMENT (SECOND) OF TORTS § 159 (AM. LAW INST. 1979).

169. *Id.* § 158. Courts have found defendants liable under trespass theory when an object has invaded plaintiff's property, whether that object is tangible or intangible. See *e.g.*, *Martin v. Reynolds Metal Co.*, 342 P.2d 790, 797 (1959) (finding non-tangible gaseous fluorides from defendant's machinery constituted a trespass even though the "thing" that entered plaintiff's land was not tangible).

170. RESTATEMENT (SECOND) OF TORTS § 158 (AM. LAW INST. 1979).

171. See *id.*

172. *Dougherty v. Stepp*, 18 N.C. 371, 372 (1835).

173. *Id.* (reasoning that just by treading onto the plaintiff's grass, the defendant caused harm); see also *Forest City Cotton Co. v. Mills*, 10 S.E.2d 806, 806 (N.C. 1940) ("In trespass, the plaintiff is entitled to recover nominal damages if he only show that the defendant broke his close."); *Lee v. Stewart*, 10 S.E.2d 804, 805-06 (N.C. 1940) (holding that the defendant walking onto the farmland of the plaintiff presents an issue of trespass for the jury).

174. See RESTATEMENT (SECOND) OF TORTS § 159 (AM. LAW INST. 1979).

175. See *id.* § 159(2). Interestingly, the Restatement (Second) of Torts includes as part of its definition principles commonly found in nuisance law. See *id.* Specifically, the Restatement provides that over-flights are trespasses if: (1) they are in the immediate reaches of the land, and (2) they interfere with the use and enjoyment. *Id.*

176. See *id.*

the proximity of the flying object to the land or structure and the reach of one's possessory interest in airspace.¹⁷⁷

The vexing problem emerging since drones took to the skies is where a landowner's airspace rights begin and end.¹⁷⁸ Prior to the mid-twentieth century, landowners in the United States were said to own everything on their land "from the depths of the Earth to the Heavens above."¹⁷⁹ This principle—first articulated by Lord Edward Coke and later by William Blackstone—became known as the "ad coelum" doctrine and came to represent pre-twentieth century American law on airspace rights.¹⁸⁰

Toward the early part of the twentieth century, modern aviation and the ad coelum doctrine began to conflict.¹⁸¹ As airplanes populated our skies, it became clear that granting landowners rights to airspace would make it virtually impossible for an aircraft to fly without first seeking authority from every landowner whose property it traveled over.¹⁸² Congress enacted the Air Commerce Act in 1926, and later the Civil Aeronautics Act in 1938.¹⁸³ This federal legislation authorized aircraft to fly at or above safe minimum altitudes, which became known as "navigable airspace."¹⁸⁴ By 1958, the FAA defined navigable airspace as airspace above 500 feet, along

177. RESTATEMENT (SECOND) OF TORTS § 159 cmt. 1 (AM. LAW INST. 1979). The comments to the Restatement (Second) of Torts explain how courts have interpreted "immediate reaches":

"Immediate reaches" of the land has not been defined as yet, except to mean that "the aircraft flights were at such altitudes as to interfere substantially with the landowner's possession and use of the airspace above the surface." No more definite line can be drawn than is suggested by the word "immediate." In the ordinary case, flight at 500 feet or more above the surface is not within the "immediate reaches," while flight within 50 feet, which interferes with actual use, clearly is, and flight within 150 feet, which also so interferes, may present a question of fact.

Id.

178. Jack Nicas, *Drones Boom Raises New Question: Who Owns Your Airspace?*, WALL STREET J. (May 13, 2015, 12:43 PM), <http://www.wsj.com/articles/drones-boom-raises-new-question-who-owns-your-airspace-1431535417>.

179. *United States v. Causby*, 328 U.S. 256, 260–61 (1946); *Cujus est solum, ejus est usque ad coelum et ad inferos*, BLACK'S LAW DICTIONARY (6th ed. 1990).

180. STUART BANNER, WHO OWNS THE SKY?: THE STRUGGLE TO CONTROL AIRSPACE FROM THE WRIGHT BROTHERS ON 16–17 (2008); Rule, *supra* note 26, at 166.

181. Rule, *supra* note 26, at 166.

182. *Id.*

183. *Id.*

184. *Id.*

with any lower “airspace needed to insure safety for take-off and landing[s].”¹⁸⁵ The net result of these laws limited the scope of the *ad coelum* doctrine to airspace below 500 feet.¹⁸⁶

Even before the FAA issued its definition of navigable space, the United States Supreme Court essentially dismantled what was left of the *ad coelum* doctrine.¹⁸⁷ *United States v. Causby* declared the doctrine “has no place in the modern world,” and determined that “[t]he air is a public highway.”¹⁸⁸ *Causby* squarely placed the issue of landowners’ property interests in airspace before the Court.¹⁸⁹ In *Causby*, the landowners operated a chicken farm next to a municipal airport that was being used by the Army and Navy during World War II.¹⁹⁰ The flight path for the aircrafts, depending on the wind conditions, would take them directly over the Causbys’ property at an elevation of eighty-three feet, and sometimes as low at sixty-seven feet above the house.¹⁹¹ The Causbys’ chickens were so frightened by the airplane noise that they would fly into walls and die.¹⁹² The plaintiffs lost on average between six to ten chickens per day.¹⁹³ As a result, the chicken farm closed, and the Causbys sued the U.S. government, alleging the government’s flight path and the subsequent loss of their chicken business resulted in a taking of their property.¹⁹⁴

The Supreme Court held that most flights over private lands are not a taking, because the airspace is “part of the public domain,” aside from the airspace within the immediate reaches of a property owner’s land.¹⁹⁵ Most importantly for this discussion, the Court explained that a landowner owns “at least as much of the space above

185. Federal Aviation Act of 1958, Pub. L. No. 85-726, § 101(24), 72 Stat. 731.

186. See Rule, *supra* note 26, at 168.

187. See *United States v. Causby*, 328 U.S. 256 (1946).

188. *Id.* at 261.

189. Richard A. Repp, *Wrongs and Rights in Superterraneous Airspace: Causby and the Courts*, 9 WM. & MARY L. REV. 460, 463 (1967).

190. *Causby*, 328 U.S. at 258.

191. *Id.*

192. *Id.* at 259.

193. *Id.*

194. See *id.* at 258.

195. *Id.* at 266.

the ground as he can occupy or use in connection with the land”.¹⁹⁶ As a result, a plaintiff may have an actionable claim for aerial trespass when the aircraft is flying at a particularly low altitude. As seen in *Causby*, where large military planes flew well below normal altitude for this type of aircraft and caused frequent disruption to the livestock, the landowner suffered a taking for which he was entitled to compensation.¹⁹⁷

In the years since *Causby*, many states, either through statute or court decisions, have protected aircraft from liability for trespass unless the aircraft “interferes substantially” with the landowner’s use of the property.¹⁹⁸ In addition, some cases have gone further, holding that mere interference with bare use or possession is not enough.¹⁹⁹ For a landowner to recover in an action for trespass against an aircraft, the landowner must show substantial interference with his actual use of the land, even in cases where the aircraft were flying below federally-regulated altitudes.²⁰⁰

The types of drones populating our skies today, whether for recreational or commercial use, frequently fly below 500 feet.²⁰¹ Depending on their intended use, they will generally operate between 50 and 500 feet above ground.²⁰² Typically they weigh less than five

196. *Causby*, 328 U.S. at 264.

197. *Id.* at 267.

198. RESTATEMENT (SECOND) OF TORTS § 159 (AM. LAW INST. 1979); *see also* Gardner v. County of Allegheny, 114 A.2d 491, 499 (Pa. 1955) (“Flight in aircraft over the lands and waters of this Commonwealth is lawful, unless at such low altitude as to interfere with the then existing use to which the land or water, or the space over the land or water, is put by the owner” (quoting Pennsylvania Aeronautical Code of 1933, § 402)); Anderson v. Souza, 243 P.2d 497, 505 (Cal. 1952) (“Flight in aircraft over the lands and waters of this State is lawful, unless at altitudes below those prescribed by federal authority, or unless so conducted as to be imminently dangerous to persons or property lawfully on the land or water beneath.” (quoting California Aeronautics Commission Act of 1947, § 2(d))).

199. Smart v. City of Los Angeles, 112 Cal. App. 3d 232, 237 (1980) (finding that the noise of overhead aircraft did not interfere with plaintiff’s use and enjoyment until he attempted to sell the land); Drennen v. County of Ventura, 38 Cal. App. 3d 84, 87–88 (1974) (declining to find trespass where the plaintiff did not actually use the land during the time that aircraft was flying over the property); Pueblo of Sandia *ex rel.* Chaves v. Smith, 497 F.2d 1043, 1046 (10th Cir. 1974) (holding no substantial interference took place because the plaintiff’s land was uninhabited and put to no use whatsoever).

200. *See* RESTATEMENT (SECOND) OF TORTS § 159 (AM. LAW INST. 1979). Cases since *Causby* have “limited the trespass liability to instances where, even though there is a flight below the prescribed minimum altitude, there is no trespass unless there is such interference with actual, as distinguished from potential, use.” *Id.* § 159 cmt. k.

201. *See* Whitlock, *supra* note 158.

202. *See id.*

pounds and are relatively quiet compared to planes and helicopters.²⁰³ Instances of low-flying drones over and around private property are not uncommon, nor are instances of drones disturbing property owners by their presence. In Leawood, Kansas, a man called police after seeing a neighbor's drone flying just outside his teenage daughter's bedroom window.²⁰⁴ In a high-rise apartment building in downtown Miami, a woman saw a drone peering in through her living room window while breastfeeding her son.²⁰⁵ According to reports, the drone was so close to the window she was almost able to "swat" it from her balcony.²⁰⁶ In Seattle, a woman saw a drone hovering outside her window on the twenty-sixth floor while she was getting dressed.²⁰⁷ Journalists at a local newspaper in Brooklyn spotted a drone hovering outside their office window on the thirtieth floor with its camera pointing at them.²⁰⁸ Police investigation revealed that the drone was operated by an architect who claimed to be surveilling the property for potential development.²⁰⁹ He was served a criminal summons for illegally flying a drone in a prohibited area.²¹⁰ In upstate New York, David Beesmer was charged with attempted unlawful surveillance and later acquitted for flying his drone around the windows of a medical facility where patients and staff became alarmed and called police.²¹¹

These instances raise questions about who owns the rights to airspace just outside the confines of one's dwelling. One way to think about airspace rights drawing upon property law and Fourth

203. See Farber, *supra* note 78, at 225. Many of the best-selling drones on the market weigh less than one pound, have a flight duration up to twenty-two minutes and can fly approximately twenty-nine miles per hour. Kenney, *supra* note 84.

204. *Leawood Man Says Peeping Tom Flew Drone next to Teen Daughter's Window*, *supra* note 16.

205. Carey Codd, *Brickell Key Woman Says Drone Spied on Her as She Breastfed*, CBS MIAMI (May 20, 2015, 11:00 PM), <http://miami.cbslocal.com/2015/05/20/brickell-key-woman-says-drone-spied-on-her-as-she-breastfed/>.

206. *Id.*

207. Christina Sterbenz, *Should We Freak Out About Drones Looking in Our Windows?*, BUS. INSIDER (Sept. 24, 2014, 2:22 PM), <http://www.businessinsider.com/privacy-issues-with-commercial-drones-2014-9>.

208. Claude Scales, *Drones Spotted Outside Eagle Offices*, BROOKLYN HEIGHTS BLOG (Aug. 15, 2015, 11:33 PM), <http://brooklynheightsblog.com/archives/76132>.

209. *Id.*

210. *Id.*

211. Zangla, *supra* note 37.

Amendment jurisprudence is that low altitude airspace immediately above one's land should be treated much the same as the curtilage around one's home.²¹² In this way, a landowner would have enforceable rights to refuse entry to anyone within this vertical curtilage.²¹³ Although devoid of this terminology, the Restatement Second of Torts adopts this principle.²¹⁴ Comment 1 explains that flights fifty feet above one's property substantially interfere with a landowner's use and enjoyment of his property thus constituting an aerial trespass.²¹⁵

The application of the aerial trespass doctrine becomes less clear when an object is flying at an altitude greater than fifty feet.²¹⁶ The further the distance between the flying object and the land the more difficult it will be for a plaintiff to prove that the aircraft was within the "immediate reaches of the land."²¹⁷ In *Causby*, there was no dispute that planes flying just eighty-three feet above plaintiff's property were within the immediate reaches of his land and substantially interfering with his use of the property.²¹⁸ Large aircraft flying at such a low altitude except for takeoff and landing is out of the ordinary.²¹⁹ But according to the Restatement, distances greater than fifty feet are less certain to be construed as within the immediate reaches of one's property.²²⁰ It is well settled that 500 feet above the

212. See *California v. Ciraolo*, 476 U.S. 207, 212–13 (1986). Curtilage is the property immediately adjacent to one's dwelling, including physical structures and land immediately associated with the use of the dwelling. *Id.* The curtilage of one's home is afforded the same protections and property rights as the home itself, including the right to exclude others. *Id.*

213. See *id.*

214. RESTATEMENT (SECOND) OF TORTS § 159 cmt. 1 (AM. LAW INST. 1979).

215. *Id.*; see *Griggs v. County of Allegheny*, 369 U.S. 84, 87–88 (1962) (noting that flights 30 to 300 feet above petitioner's residence interfered with daily activities); *Adaman Mut. Water Co. v. United States*, 181 F. Supp. 658, 660 (Ct. Cl. 1958); *Herring v. United States*, 162 F. Supp. 769, 771 (Ct. Cl. 1958) (holding a flight at 45 feet above a residence interferes with the owner's use and enjoyment of his property); see also *Commonwealth v. Oglialoro*, 547 A.2d 387, 391 (Pa. Super. Ct. 1988) (finding police helicopter flying 50 feet above curtilage of defendant's property was in non-navigable airspace and overly intrusive).

216. See *United States v. Causby*, 328 U.S. 256, 266 (1946); RESTATEMENT (SECOND) OF TORTS § 159 cmt. 1 (AM. LAW INST. 1979).

217. See *Causby*, 328 U.S. at 266; RESTATEMENT (SECOND) OF TORTS § 159 cmt. 1 (AM. LAW INST. 1979).

218. *Causby*, 328 U.S. at 263–64.

219. *Id.* at 264.

220. RESTATEMENT (SECOND) OF TORTS § 159 cmt. 1 (AM. LAW INST. 1979).

surface of the ground is considered public or navigable airspace.²²¹ For aircraft operating in this nebulous airspace between 50 and 500 feet, the determination as to whether the aircraft is within the immediate reaches of the property will turn on how much interference the aircraft is actually causing to the use of the land.²²² Unlike the chickens' suicidal reaction to the loud noise and significant winds caused by large planes flying low to the ground, drones do not pose the same physical annoyances and hazards.²²³ Drones are comparably quiet, small, and relatively undetectable.²²⁴ To be sure, the loudest objection being voiced about drones flying over private property is a perceived intrusion into one's privacy.²²⁵ The ability of the drone to use its surveillance gear to record and capture intimate details of people's lives is of more concern than the loud noises, smells, or other intrusions and annoyances caused by manned aircraft.²²⁶ Assessing the gravity of the harm caused by drones will require a different set of considerations and factors to determine if a one-pound drone hovering 150 feet over someone's backyard will constitute an aerial trespass.

Finally, the situation is even less advantageous to the landowner when the aircraft is flying at elevations 500 feet and higher above ground.²²⁷ Courts and federal regulators have historically declared an altitude of 500 feet or higher to be navigable airspace.²²⁸ The law is

221. Florida v. Riley, 488 U.S. 445, 445 (1989).

222. See *Causby*, 328 U.S. at 266.

223. *Id.* at 259.

224. Farber, *supra* note 78, at 225.

225. MARI SAKIYAMA ET AL., NEVADA VS. U.S. RESIDENTS' ATTITUDES TOWARD SURVEILLANCE USING AERIAL DRONES 3 (2014), https://www.unlv.edu/sites/default/files/page_files/27/NevadaU.S.Residents'Attitudes.pdf. A 2014 study by researchers at the University of Las Vegas, Nevada Center for Crime and Justice Policy conducted an on-line survey of 534 adults in the U.S. and their perceptions and attitudes toward unmanned aerial vehicles. *Id.* The results showed that 88% of U.S. adults viewed drone use as an invasion of personal privacy. *Id.* This far surpassed the concerns expressed about public and personal safety. *Id.*

226. See *id.*

227. RESTATEMENT (SECOND) OF TORTS § 159 cmt. at 1 (AM. LAW INST. 1979).

228. Florida v. Riley, 488 U.S. 445, 445 (1989); see also Complaint for Declaratory Judgment and Damages, *supra* note 17, at 3. The most significant issue in this lawsuit deals with whether Boggs' drone flying at two hundred feet is within the immediate reaches of Merideth's property or whether the airspace at that altitude is considered navigable airspace controlled by the FAA. See *id.* If the drone was flying in navigable airspace than Merideth had no right to shoot it down because the drone was not intruding on his property. See *United States v. Causby*, 328 U.S. 256, 266 (1946).

well settled that if the aircraft is in navigable airspace it is solidly within the jurisdiction of the FAA and landowners have no possessory rights to this airspace.²²⁹ Courts have treated navigable airspace as public thoroughfares just the same as roads and highways.²³⁰ In other words, if those flying in navigable airspace make observations of anything on the ground they are doing so from a public vantage point.²³¹ Information obtained from a lawful vantage point, such as public airspace, does not unreasonably intrude upon one's expectation of privacy.²³² This is precisely why law enforcement does not need a warrant to fly 500 feet above someone's property and commercial aircraft do not need permission from landowners to fly 500 feet above their property.²³³

But drones are not dependent on close proximity to their target for surveillance purposes.²³⁴ A drone can hover and fly hundreds of feet in the sky and still capture and record images of people and places on the ground.²³⁵ A drone simply acts as the platform enabling the visual surveillance.²³⁶ The sensory enhancing instruments equipped to the drone determine the quality and reach of the data that can be collected.²³⁷ A drone is capable of hovering over an area long enough to allow the instruments to capture and disseminate information to the ground control unit.²³⁸ Drones all but eviscerate the physical proximity issue due to their capabilities and on board instruments.

229. 49 U.S.C. § 40103(a)(1) (2012) (“The United States government has exclusive sovereignty of airspace of the United States.”). According to 49 U.S.C. § 40103(b)(1), Congress delegated the ability to define navigable airspace to the FAA. 49 U.S.C. § 40103(b)(1).

230. See *Riley*, 488 U.S. at 451 (1989) (finding that a police helicopter flying at 400 feet over private property was in navigable airspace when officers made observations of cultivation of marijuana occurring in backyard). Even still, the line between non-navigable airspace and navigable airspace is not a definite one. Federal regulators have made navigable airspace contingent on location. See 14 C.F.R. § 91.119(a)-(c) (2010).

231. See *id.* at 451.

232. *Id.* at 451–52; *California v. Ciraolo*, 476 U.S. 207, 213–14 (1986); *Dow Chem. Co. v. United States*, 476 U.S. 227, 239 (1986); see also Farber, *Eyes in the Sky*, *supra* note 102, at 19.

233. *Riley*, 488 U.S. at 451–52; *Ciraolo*, 476 U.S. at 213–14; *Dow Chem.*, 476 U.S. at 239.

234. See Farber, *supra* note 78, at 225; see also Froomkin & Colangelo, *supra* note 33, at 30. Froomkin and Colangelo suggest that the intrusions that stem from the use of the sensory enhancing devices are themselves the damages regardless of whether or not a technical intrusion is found. *Id.*

235. See Farber, *supra* note 78, at 225, 228–29.

236. See *id.*

237. See *id.*; see generally Blitz et al., *supra* note 7, at 54–55.

238. See *id.*

Technologies such as wi-fi sniffers, license plates readers, night vision cameras, facial recognition technology and other biometric devices, and high-powered telephoto lenses make distance a fairly blunt obstacle to the collection of information.²³⁹ Indeed, a cause of action that is dependent on proximity to real property is of little or no utility in the drone context.²⁴⁰

One approach to giving more force and effect to the trespass doctrine is for states to grant landowners a possessory right to airspace above their property.²⁴¹ Until recently, airspace below 500 feet has been left largely to the states to govern.²⁴² A state or municipality can grant landowners a possessory interest in the airspace above their property up to navigable airspace.²⁴³ In effect, states would be legislatively assigning a column of airspace to every landowner. This approach would clarify a landowner's airspace rights and simplify the determination of whether an aerial trespass has been committed. Presumably, the legislative intent of prescribing a specific altitude would be *prima facie* evidence that unauthorized flight within that airspace constitutes interference with the use and

239. See Alan Boyle, *Night-Vision Drones Are Coming from DJI and FLIR—But Don't Try This at Home*, GEEKWIRE (Dec. 11, 2015, 10:40 AM), <http://www.geekwire.com/2015/night-vision-drones-coming-dji-flir-dont-try-home/> (night vision); A. Barton Hinkle, *How Police Drones and License-Plate Readers Threaten Liberty*, REASON (Apr. 15, 2015), <http://reason.com/archives/2015/04/15/how-police-drones-and-license-plate-read> (license-plate readers); Jason Koebler, *This Drone Zoom Lens Can Identify Your Face from 1,000 Feet Away*, MOTHERBOARD (Feb. 25, 2015, 3:39 PM), <http://motherboard.vice.com/read/this-drone-zoom-lens-can-identify-your-face-from-1000-feet-away> (telephoto lens); Barry Levine, *Drones Overhead in L.A.'s Valley Are Tracking Mobile Devices' Locations*, VENTUREBEAT (Feb. 23, 2015, 6:11 AM), <http://venturebeat.com/2015/02/23/drones-overhead-in-las-valley-are-tracking-mobile-devices-locations/> (wi-fi sniffing); Madison Ruppert, *Nowhere to Run: Drones, Facial Recognition, Soft Biometrics and Threat Assessments*, ACTIVIST POST (Sept. 30, 2011), <http://www.activistpost.com/2011/09/nowhere-to-run-drones-facial.html> (facial recognition technology).

240. A property owner may have an actionable claim against a drone operator in instances where a drone flies within fifty feet of a house, but the same drone flying autonomously at a higher altitude can see through windows and skylights and listen in on wi-fi signals. See RESTATEMENT (SECOND) OF TORTS § 159 cmt. 1 (AM. LAW INST. 1979) (“[F]light within 50 feet, which interferes with actual use, clearly is, and flight within 150 feet, which also so interferes, may present a question of fact.”).

241. See Rule, *supra* note 26, at 187. Rule recommends legislation to define these rights all the way up to the 500-foot navigable airspace line. *Id.*

242. See Michael Hiltzik, *California Struggles to Lead the Way on Drone Regulation*, L.A. TIMES (Aug. 5, 2016, 11:15 AM), <http://www.latimes.com/business/hiltzik/la-fi-hiltzik-drones-20160807-snap-story.html>.

243. See Rule, *supra* note 26, at 187, 202–03.

enjoyment of one's land. All a landowner would need to show to establish a claim of aerial trespass would be that the drone flew in to the owner's airspace without permission.²⁴⁴

Indeed, this is precisely the approach Oregon and Nevada have taken, passing laws designed specifically to restrict operation of low flying drones over private property.²⁴⁵ In June 2015, Nevada's law took effect, which allows a landowner to bring an action in trespass against the owner or operator of an unmanned aerial vehicle that is flown fewer than 250 feet over the landowner's property without permission.²⁴⁶ This newly minted statute, in effect, creates a defined column of airspace for every landowner who has the authority, notwithstanding the statute's exceptions, to refuse entry into this designated airspace above his property.²⁴⁷

244. *Id.* at 187.

245. OR. REV. STAT. §§ 837.380(4)–(6) (2016); Assemb. B. 239 § 18.5(a), §§ 19.1(a)–(b), 78th Leg., Reg. Sess. (Nev. 2015).

246. Assemb. B. 239, 78th Leg., Reg. Sess. (Nev. 2015).

247. Subsection 1 of Nev. Rev. Stat. § 493.103 creates the property right. It reads as follows:

Except as otherwise provided in subsection 2, a person who owns or lawfully occupies real property in this State may bring an action for trespass against the owner or operator of an unmanned aerial vehicle that is flown at a height of less than 250 feet over the property if: (a) the owner or operator of the unmanned aerial vehicle has flown the unmanned aerial vehicle over the property at a height of less than 250 feet on at least one previous occasion; and (b) the person who owns or occupies the real property notified the owner or operator of the unmanned aerial vehicle that the person did not authorize the flight of the unmanned aerial vehicle over the property at a height of less than 250 feet. For the purposes of this paragraph, a person may place the owner or operator of an unmanned aerial vehicle on notice in the manner prescribed in subsection 2 of NRS 207.200.

Subsection 2 lists the exceptions:

A person may not bring an action pursuant to subsection 1 if: (a) the unmanned aerial vehicle is lawfully in the flight path for landing at an airport, airfield or runway; (b) the unmanned aerial vehicle is in the process of taking off or landing; (c) the unmanned aerial vehicle was under the lawful operation of: (1) a law enforcement agency in accordance with section 20 of this act; and (2) a public agency in accordance with section 21 of this act; or (d) The unmanned aerial vehicle was under the lawful operation of a business licensed in this State or a land surveyor if: (1) the operator is licensed or otherwise approved to operate the unmanned aerial vehicle by the Federal Aviation Administration; (2) the unmanned aerial vehicle is being operated within the scope of the lawful activities of the business or surveyor; and (3) the operation of the unmanned aerial vehicle does not unreasonably interfere with the existing use of the real property.

The difficulty with states granting airspace rights to landowners, as in the cases of Nevada and Oregon, is that the FAA has the authority to regulate aircraft at any altitude.²⁴⁸ Since the beginning of modern aviation, the FAA has generally left the ability to control the airspace up to 500 feet—the minimum altitude for safe air travel because manned aircraft did not use low elevation airspace except for takeoff and landing—to the states.²⁴⁹ But with the proliferation of drones and the pressure on the FAA to integrate drones into our national airspace, the FAA has extended its jurisdiction below 500 feet for the purpose of regulating the safe operation of unmanned aircraft.²⁵⁰ The new rules for small commercial drones are designed to ensure safety, rather than to protect privacy.²⁵¹ In fact, the FAA plainly stated that its mission is “to provide the safest, most efficient aerospace system in the world, and does not include regulating privacy.”²⁵² This is good news for the hundreds of cities and towns banning drones and the thirty-one states that recently passed statutes to protect residents from snooping drones.²⁵³ The FAA recognizes that while it is the sole authority when it comes to ensuring safety in our skies, state and

Additionally, subsection 3 allows a plaintiff who prevails in an action for trespass brought pursuant to subsection 1 to recover triple damages for any injury to person or property, as well as reasonable attorney’s fees and court costs. The plaintiff can also be awarded injunctive relief. *Id.* Georgia has proposed a similar approach in its pending legislation for civil cause of action for trespass by unmanned aircraft, except that it has designated 100 feet above ground as the marker. H.B. 157th Gen. Assemb., Reg. Sess. (Ga. 2015).

248. *Busting Myths about the FAA and Unmanned Aircraft*, FAA (Feb. 26, 2015), <https://www.faa.gov/news/updates/?newsId=76240>; see also Mark J. Connot & Jason J. Zummo, *Navigable Airspace: Where Private Property Rights End and Navigable Airspace Begins*, FOX ROTHSCHILD LLP (Jan. 15, 2016), <https://ontheradar.foxrothschild.com/2016/01/articles/auvsi/navigable-airspace-where-private-property-rights-end-and-navigable-airspace-begins/>.

249. See Hiltzik, *supra* note 242.

250. See Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064, 42,066 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 61, et al.).

251. See *id.*

252. *Safety: The Foundation of Everything We Do*, FED. AVIATION ADMIN., http://www.faa.gov/about/safety_efficiency/ (last visited Oct. 10, 2016) (“[O]ur mission [is] to provide the safest, most efficient aerospace system in the world.”); Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064, 42,191 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 61, et al.) (“[T]he FAA’s rulemaking authority neither mandates nor permits the FAA to issue or enforce regulations specifically aimed at protecting privacy interests between third parties.”).

253. See Christopher Burns, *FAA to States, Cities: Back Away from the Drone (Regulations)*, BANGOR DAILY NEWS (Jan. 2, 2016, 8:12 AM), <http://bangordailynews.com/2016/01/02/the-point/faa-to-states-cities-back-away-from-the-drone-regulations/>.

local governments have taken steps to bolster privacy protections from unwanted aerial observers.²⁵⁴ The FAA does not seek to preempt state and local privacy laws, as those interests fall outside the agency's mandate.²⁵⁵ Hence, after much speculation and consternation among lawmakers, the FAA did not include a preemption clause in its final rules pertaining to small commercial UAS.²⁵⁶

B. Nuisance

The tort of nuisance may be better suited to address overhead flight at any altitude because nuisance actions are not dependent on an intrusion of one's possessory interest in real property. Simply put, conduct that interferes with the use and enjoyment of the land is actionable under a nuisance theory.²⁵⁷ There are two types of nuisance, private and public.²⁵⁸ A private nuisance requires the unreasonable interference with the use and enjoyment of one's land.²⁵⁹ A public nuisance requires that the harm be greater than to one individual, rather it must constitute a "public harm," an activity

254. See ESSEX, *supra* note 7, at 10.

255. See *id.* at 13; see also Kang, *supra* note 21 ("The new F.A.A. rules do not necessarily preclude a hodgepodge of state and local drone regulations that have popped up in recent years. The administration sent a letter to states and cities saying they recommend everyone follow their lead. But it is only a recommendation.").

256. See Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064, 42,066 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 61, et al.). Until the FAA's issuance of its final rules on June 21, 2016, there was great concern among state and local lawmakers regarding whether the thirty-one states with laws aimed at restricting drone use to protect privacy would be preempted by the agency's intent to control the field. See Cecilia Kang, *F.A.A. Drone Laws Start to Clash with Stricter Local Rules*, N.Y. TIMES (Dec. 27, 2015), <http://www.nytimes.com/2015/12/28/technology/faa-drone-laws-start-to-clash-with-stricter-local-rules.html> [hereinafter Kang, *F.A.A. Drone Laws*]. Had the federal agency's jurisdiction extended that broadly, it would have had a crippling effect on laws like the one recently passed in Nevada. See Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064, 42,066 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 61, et al.). A drone operator being sued could successfully argue that he was operating in public airspace as evidenced by the FAA's exclusive jurisdiction of the contested airspace. See Kang, *F.A.A. Drone Laws*, *supra*. Essentially, any claim of trespass would be nullified unless the drone touched down on the land of the plaintiff. Many of these laws go further than the FAA regulations, specifically imposing fines and criminal violations for lack of compliance. ESSEX, *supra* note 7, at 23–25.

257. RESTATEMENT (SECOND) OF TORTS § 822 (AM. LAW INST. 1979).

258. *Id.* § 821A.

259. *Id.* § 821D.

that is harmful to public health or safety.²⁶⁰ Moreover, a plaintiff in a private nuisance suit need not own the property so long as he is a lawful occupant or user of the property.²⁶¹ In either case, a plaintiff must prove that the interference was intentional or due to a defendant's negligence.²⁶² Nuisance claims often involve instances where the defendant's conduct creates a condition such as a noise, vibration, odor, or light that unreasonably interferes with the plaintiff's use and enjoyment of his land.²⁶³ Disturbance of peace of mind is also actionable.²⁶⁴ There could be overlap between nuisance and trespass; where an object both invades the property and interferes with the use and enjoyment of land.²⁶⁵ In nuisance cases, courts tend

260. *Id.* § 821B.

261. *Webel v. Yale Univ.*, 7 A.2d 215, 219 (Conn. 1939) ("In the modern authorities it [private nuisance] includes all injuries to an owner or occupier in the enjoyment of the property of which he is in possession, without regard to the quality of the tenure." (citing *FOWLER V. HARPER, FLEMING JAMES, JR. & OSCAR S. GRAY, HARPER, JAMES AND GRAY ON TORTS* § 179 (3rd ed. 2009))); *FREDERICK SIR POLLOCK, POLLACK'S LAW OF TORTS* § 422 (13th ed. 1939); *W. T. S. STALLYBRASS, SALMOND ON THE LAW OF TORTS* § 235 *Torts* (8th ed. 1936).

262. *RESTATEMENT (SECOND) OF TORTS* § 822 (AM. LAW INST. 1979).

263. *See Transcon. Gas Pipe Line Co. v. Gault*, 198 F.2d 196, 198 (4th Cir. 1952) (finding that vibration and noise from plant greatly disturbed plaintiffs' enjoyment of their homes); *Holmberg v. Bergin*, 172 N.W.2d 739, 744 (Minn. 1969) (finding that tree roots from neighbor's tree growing under sidewalk and creating drainage problems caused harm to plaintiff's property); *McClung v. Louisville & Nashville R.R. Co.*, 51 So.2d 371, 373, 375 (Ala. 1951) (finding a nuisance to residents in the immediate vicinity because unloading metal sand cars into bins frequently and during the early morning made loud noise and churned up dust).

264. *See Puritan Holding Co. v. Holloschitz*, 372 N.Y.S.2d 500, 501 (1975) (dilapidated building across street); *Everett v. Paschall*, 61 Wash. 47, 51 (1910) (sanitarium for treatment of tuberculosis); *City of Baltimore v. Fairfield Imp. Co.*, 87 Md. 352, 360, 367–68 (1898) (fear of contagion from housing a leper on adjacent property).

265. *See RESTATEMENT (SECOND) OF TORTS* § 821D cmt. e (AM. LAW INST. 1979). The Restatement of Torts describes the difference with this illustration:

Thus the flooding of the plaintiff's land, which is a trespass, is also a nuisance if it is repeated or of long duration; and when the defendant's dog howls under the plaintiff's window night after night and deprives him of sleep, there is a nuisance whether the dog is outside the plaintiff's land or has entered upon it, and the defendant's negligence in looking after the dog would make him liable either for trespass if there was an entry or for nuisance whether there was entry or not.

Id. One key difference between nuisance and trespass is in the remedy. Nuisance could lead to an injunction and damages, whereas trespass would typically lead to just damages. *See, e.g., New Mexico v. Gen. Elec. Co.*, 335 F. Supp. 2d 1185, 1243 (D.N.M. 2004) ("The equitable remedy of injunction to enjoin a public nuisance developed early in the history of the development of equity jurisprudence" (citing *W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS* § 90 at 643 (5th ed. 1984))); *Kornoff v. Kingsburg Cotton Oil Co.*, 288 P.2d 507, 511 (Cal. 1955) ("Once a cause of action for trespass or nuisance is established, an occupant of land may recover damages for annoyance and discomfort that would naturally ensue therefrom." (quoting *Herzog v. Grosso*, 259 P.2d 429, 433 (Cal.

to focus on the diminution of usability of the land, which includes but is not limited to recovery for diminution of the property's market value, personal discomfort to its occupants, and interference with the pleasure and comfort a person normally derives from their land.²⁶⁶ According to the Rhode Island Supreme Court, the essential element of an actionable nuisance is that persons have suffered harm or are threatened with injuries that they ought not have to bear.²⁶⁷

Under the tort of nuisance, a plaintiff must prove that the harm was not only substantial but unreasonable.²⁶⁸ Neighborhood characteristics and customs are factors in determining whether a defendant's conduct constitutes unreasonable and substantial harm.²⁶⁹ For instance, the ringing of church bells and the fragrance of baking bread are not likely to be found unreasonable.²⁷⁰ On the other hand, activities that are out of character with the neighborhood, such as loudly unloading metal sand cars into bins frequently and during the early morning, will constitute a nuisance.²⁷¹ At common law, it is widely held that noises or vibrations that interfere with one's ability to use or enjoy one's property constitute private nuisances.²⁷²

Courts also look to the frequency, magnitude, and duration when assessing reasonableness of a defendant's conduct.²⁷³ Occasional invasions may not constitute unreasonable interference whereas continuous, repeated, and frequent activities may.²⁷⁴ Potential harm to the plaintiff caused by a defendant's activity, as well as harm to adjoining property owners and inhabitants, is relevant to a finding of

1953))).

266. See RESTATEMENT (SECOND) OF TORTS § 821D (AM. LAW INST. 1979). The interference must be one that a normal person would find offensive. See *id.* If the inference is only harmful to especially sensitive persons than courts are unlikely to find interference actionable. See *id.*

267. Wood v. Picillo, 443 A.2d 1244, 1247 (R.I. 1982) (“[L]iability in nuisance is predicated upon unreasonable injury rather than unreasonable conduct.”).

268. RESTATEMENT (SECOND) OF TORTS § 822 (AM. LAW INST. 1979).

269. DAN B. DOBBS, PAUL T. HAYDEN, & ELLEN M. BUBLICK, DOBBS' LAW OF TORTS § 401 (2nd ed. Supp. 2016).

270. *Id.*

271. *E.g.*, McClung v. Louisville & Nashville R.R. Co., 51 So. 2d 371, 373 (Ala. 1951).

272. *E.g.*, Transcon. Gas Pipe Line Co. v. Gault, 198 F.2d 196, 198 (4th Cir. 1952).

273. See DOBBS, *supra* note 269.

274. *Id.*

nuisance.²⁷⁵ The utility of a defendant's conduct is certainly relevant to a nuisance assessment.²⁷⁶ A defendant's activity could have high social value to the community but constitute a nuisance if it is outweighed by the gravity of the harm caused to the plaintiff.²⁷⁷ On the other hand, where a defendant's conduct bears no utility for the greater good and poses tangible risks to the public, it will likely count as a nuisance.²⁷⁸

Consider a situation where an operator flies his drone over another person's home and records the activities of the occupants on their property—perhaps sunbathing or enjoying a family meal. Alternatively, the drone flies around the dwelling with its high-resolution camera peering into windows. The homeowner may be able to make out a *prima facie* case for nuisance by demonstrating that the drone's presence is preventing him from enjoying the premises or going near the windows for fear of being recorded.²⁷⁹ Quite likely, the homeowner's response would be deemed reasonable.²⁸⁰ But other considerations will come into play, such as the frequency and duration of these over-flights, the time of day and the altitude of the drone flights, if the operator is recording people and events on the ground, how densely populated the neighborhood, and if there are other means of viewing the space inside and around the home that compromise the privacy of the homeowner regardless of the drone's presence.²⁸¹

The presence of drones in the sky is a relatively new phenomenon, distinct from conduct courts have traditionally deemed a nuisance.²⁸² As drones populate our sky more people will look for relief from existing tort law. Where these laws fall short of providing redress, public pressure will mount to reform such laws or create new ones.

275. RESTATEMENT (SECOND) OF TORTS § 827 (AM. LAW INST. 1979).

276. *Id.* at § 828.

277. *See id.* at § 827.

278. *See id.*

279. *See id.* at § 822.

280. *See id.* If the drone is operating in compliance with federal regulations and local laws, such evidence will weigh against plaintiff's claim that the interference is unreasonable. RESTATEMENT (SECOND) OF TORTS § 822 (AM. LAW INST. 1979).

281. *Id.* at §§ 827–828.

282. *See id.* at § 821D.

C. Privacy Torts

Samuel D. Warren and Louis D. Brandeis first gave voice to legal notions of invasion of privacy in their groundbreaking article *The Right to Privacy*.²⁸³ In this turn-of-the-century masterpiece, Warren and Brandeis characterized privacy as “the right to be let alone,” and they identified technology as one of the major threats to privacy.²⁸⁴ More than half a century later, William Prosser categorized privacy torts into four separate causes of action.²⁸⁵ These four torts were later adopted by the Restatement (Second) of Torts.²⁸⁶

The privacy torts that are most relevant to unmanned aerial surveillance are intrusion upon seclusion and the public disclosure of private facts.²⁸⁷ Intrusion upon seclusion focuses on the collection of personal information.²⁸⁸ The tort has two key elements: (1) an intentional intrusion on the plaintiff’s solitude, seclusion, or private affairs, and (2) that the intrusion would be highly offensive to a reasonable person.²⁸⁹ To permit recovery, some states require that the intrusion cause mental suffering, shame, or humiliation.²⁹⁰ Privacy intrusions that give rise to tortious liability seek to vindicate the freedom to act in one’s home or other private place without observation.²⁹¹

Intrusion upon seclusion has some limiting principles. First, the intrusion must have been intentional, meaning the defendant must have desired that the intrusion occur or must have known with a substantial certainty that an intrusion would result from his

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

284. *Id.* at 193, 195 (“[N]umerous mechanical devices threaten to make good the prediction that ‘what is whispered in the closet shall be proclaimed from the house-tops.’”).

285. William L. Prosser, *Privacy*, 48 CAL L. REV. 381, 389 (1960).

286. RESTATEMENT (SECOND) OF TORTS § 652B-E (AM. LAW INST. 1979).

287. *See* Villasenor, *supra* note 102 at 500–05.

288. *See* Benjamin Zhu, *A Traditional Tort for a Modern Threat: Applying Intrusion upon Seclusion to Dataveillance Observations*, 89 N.Y.U. L. REV. 2381, 2395 (2014).

289. RESTATEMENT (SECOND) OF TORTS § 652B (AM. LAW INST. 1979).

290. *See, e.g.*, DeAngelo v. Fortney, 515 A.2d 594, 595 (Pa. Super. Ct. 1986) (finding defendant’s conduct of filling out solicitation cards with plaintiff’s name on them, causing companies to solicit plaintiff via telephone and mail two times, did not amount to a “substantial and highly offensive” intrusion).

291. Hill v. Nat’l Collegiate Athletic Ass’n, 865 P.2d 633, 647 (Cal. 1994).

conduct.²⁹² Thus, an accidental or innocent intrusion is not actionable.²⁹³ Second, there is no tortious conduct if the defendant did not intrude into a legally-cognizable private place or sphere belonging to the plaintiff.²⁹⁴ Observing a person in a public place or taking a photograph of a person who can be viewed from a public vantage point is generally not considered an invasion of privacy.²⁹⁵ Intrusions upon seclusion are often determined by whether the plaintiff had a reasonable expectation of privacy at the time and in the place of the alleged intrusion.²⁹⁶ Individuals have a reasonable expectation of privacy in shielded areas where they have ownership or control over the property, such as the home and its curtilage,²⁹⁷ or in locations dealing with intimate details of one's health, such as hospitals or ambulances.²⁹⁸ The intrusion does not have to be physical and can occur through the use of the "defendant's senses, with or without mechanical aids, to oversee or overhear the plaintiff's private affairs."²⁹⁹ As illustrated by the Restatement, a private

292. RESTATEMENT (SECOND) OF TORTS § 8A (AM. LAW INST. 1979).

293. *See id.* In many of the reported instances of drones flying around homes, operators have claimed they had no intention of looking inside the residence. *See Sterbenz, supra* note 207. Proving intent by an operator may be quite difficult, particularly by those claiming they were flying for recreation and had no intent to spy. *See id.*; *see also Zangla, supra* note 37.

294. *See* RESTATEMENT (SECOND) OF TORTS § 652B cmt. c (AM. LAW INST. 1979).

295. *See, e.g.,* *Dempsey v. Nat'l Enquirer*, 702 F. Supp. 927, 931 (D. Me. 1988) ("The reporter's presence on a public thoroughfare and in a restaurant open to the public cannot constitute an intrusion upon seclusion of another."); *Machleder v. Diaz*, 538 F. Supp. 1364, 1374 (S.D.N.Y. 1982) (finding no liability for intrusion upon seclusion when defendant accosted and filmed plaintiff on the property of a corporation, a "semi-public" place, where he was visible to the public eye). However, the Restatement recognizes that conduct that is repeated with such persistence and frequency as to amount to a "course of hounding the plaintiff" and "a substantial burden to his existence" may constitute an invasion of privacy. RESTATEMENT (SECOND) OF TORTS § 652B cmt. d (AM. LAW INST. 1979).

296. *See, e.g.,* *Med. Lab. Mgmt. Consultants v. ABC*, 306 F.3d 806, 818–19 (9th Cir. 2002) (finding no reasonable expectation of privacy in the offices where plaintiff worked because it was not a private place of his, nor in defendant's conversations with ABC's undercover journalists because the conversations were business-related and did not implicate plaintiff's personal affairs); *Opperman v. Path, Inc.*, 87 F. Supp. 3d 1018, 1059 (N.D. Cal. 2014) (holding that an intrusion upon seclusion claim "is not viable unless the plaintiff had an 'objectively reasonable expectation of seclusion or solitude in the place, conversation or data source'").

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

298. RESTATEMENT (SECOND) OF TORTS § 652B cmt. b, illus. 1 (AM. LAW INST. 1979); *see also* *Miller v. Nat'l Broad. Co.*, 232 Cal. Rptr. 668, 670 (Cal. Ct. App. 1986) (television producer and camera crew entered home without permission to film unsuccessful efforts of paramedics to save the life of plaintiff's husband who had suffered heart attack); *Noble v. Sears, Roebuck & Co.* 109 Cal. Rptr. 269, 271 (Cal. Ct. App. 1973) (private investigator entered hospital room to interrogate patient).

299. RESTATEMENT (SECOND) OF TORTS § 652B cmt. b (AM. LAW INST. 1979).

detective using binoculars to peer into a person's bedroom window and take pictures violates that individual's expectation of privacy.³⁰⁰ In *Wolfson v. Lewis*, a television crew surveilled the home of a healthcare executive for several hours using both high-powered cameras and microphones.³⁰¹ In doing so, the defendants were able to see inside the home as well as hear conversations happening inside.³⁰² Despite the fact that the defendants did not enter the plaintiffs' premises, the court found the defendants intruded upon the plaintiffs' seclusion and solitude.³⁰³ In contrast, broadcasting a picture of a residence which shows only what can be observed from a public vantage point is not an invasion of privacy.³⁰⁴

The third limitation is that there is no liability unless the interference with the plaintiff's seclusion is substantial enough to offend a person of "ordinary sensibilities."³⁰⁵ Courts interpreting this standard have required the intrusion be highly offensive,³⁰⁶ repugnant,³⁰⁷ or "outrageously unreasonable conduct."³⁰⁸ Usually, a single incident will not suffice; rather, the intrusions must be

300. *Id.* § 652B cmt. b, illus. 2.

301. *Wolfson*, 924 F. Supp. at 1428.

302. *Id.* at 1428–30.

303. *Id.* at 1432.

A reasonable jury could well find that Mr. Wilson and Mr. Lewis intentionally intruded, in a manner that would be highly offensive to a reasonable person, upon the solitude and seclusion of the Wolfsons by engaging in a course of conduct apparently designed to hound, harass, intimidate and frighten them. The intrusions committed by Mr. Wilson and Mr. Lewis consisted of a pattern of conduct involving physical and sensory invasions into Mr. and Mrs. Wolfson's privacy. Mr. Wilson's and Mr. Lewis's actions deprived the Wolfsons of the right to live their life quietly and peacefully.

Id.

304. *See* *Wehling v. CBS*, 721 F.2d 506, 509 (5th Cir. 1983) (holding broadcasting a picture of a plaintiff's residence which showed nothing more than what could be seen from a public street is not an invasion of privacy).

305. *See* RESTATEMENT (SECOND) OF TORTS § 652B cmt. d (AM. LAW INST. 1979); *see also* *Shorter v. Retail Credit Co.*, 251 F. Supp. 329, 331 (D.S.C. 1966) ("[T]he acts complained of must be so gross and out of line as to offend one of ordinary sensibilities.").

306. RESTATEMENT (SECOND) OF TORTS § 652B cmt. d (AM. LAW INST. 1979).

307. *Fabio v. Credit Bureau of Hutchinson, Inc.*, 210 F.R.D. 688, 692 (D. Minn. 2002).

308. *Noble Oil Co., v. Schaefer*, 484 A.2d 729, 733 (N.J. Super. Ct. 1984). However, courts have also recognized cases where a single intrusion was sufficient given the nature of the activities filmed or the overzealous nature of surveillance itself. *See, e.g., Miller v. Nat'l Broad. Co.*, 232 Cal. Rptr. 668, 679 (Cal. Ct. App. 1986) (finding a single instance of videotaping a man having a seizure in his bedroom constitutes "highly offensive conduct").

“repeated with such persistence and frequency as to amount to a course of hounding of the plaintiff, that becomes a substantial burden to his existence.”³⁰⁹ Courts will consider circumstances including “the degree of the 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.”³¹⁰ Likewise, if a plaintiff was not acting in a manner consistent with an actual expectation of privacy, a defendant’s conduct will rarely justify liability.³¹¹ Plaintiff’s expectation of privacy must be objectively reasonable.³¹² Normative assessments of private expectations are informed by shared norms and social values.³¹³ Judicial determinations about what constitutes reasonable expectations of privacy change over time and are significantly impacted by technology.³¹⁴

309. RESTATEMENT (SECOND) OF TORTS § 652B cmt. b (AM. LAW. INST. 1979).

310. *Miller*, 232 Cal. Rptr. at 679.

311. *See e.g.*, *Jacobson v. CBS*, 19 N.E.3d 1165, 1180–81 (Ill. App. Ct. 2014) (finding no reasonable expectation of privacy where a reporter went swimming in the backyard pool of a person she was reporting on knowing news media were in the neighborhood); *Swerdlick v. Koch*, 721 A.2d 849, 853, 857–58 (R.I. 1998) (finding no reasonable expectation of privacy where plaintiffs were conducting a business out of their home and shipping activities occurred in front of the home in full view of the neighbors); *see also Aisenson v. ABC*, 220 Cal.App.3d 146, 162 (1990) (“One factor relevant to whether an intrusion is ‘highly offensive to a reasonable person’ is the extent to which the person whose privacy is at issue voluntarily entered into the public sphere.”).

312. *See* RESTATEMENT (SECOND) OF TORTS § 652A(2)(a), 652B (AM. LAW. INST. 1979); *see also e.g.*, *Opperman v. Path, Inc.*, 87 F. Supp. 3d 1018, 1059 (N.D. Cal. 2014) (“The tort is proven only if the plaintiff had an objectively reasonable expectation of seclusion or solitude in the place, conversation or data source.”).

313. *See e.g.*, *Georgia v. Randolph*, 547 U.S. 103, 120–21 (2006) (“customary social understanding” used as guide to evaluate reasonableness). Robert Post described this relationship between the elements of a privacy tort and society’s expectations:

The [common law invasion of privacy] tort safeguards the interests of individuals in the maintenance of rules of civility [In everyday life we experience privacy] as an inherently normative set of social practices that constitute a way of life, our way of life In the tort, “privacy” is simply a label we use to identify one aspect of the many forms of respect by which we maintain a community. It is less important that the purity of the label be maintained, than that the forms of community life of which it is a part be preserved.

Robert C. Post, *The Social Foundations of Privacy: Community and Self in the Common Law Tort*, 77 CALIF. L. REV. 957, 1008–09 (1989).

314. *See e.g.*, *Riley v. California*, 134 S. Ct. 2473, 2495 (U.S. 2014) (invalidating a warrantless search of a smartphone relying in part on the fact that a vast majority of Americans own smartphones in which they store their “privacies of life”); *United States v. Jones*, 565 U.S. 400, 403, 431 (2012) (unanimously holding that warrantless police tracking of the defendant for twenty-eight days using a global positioning system constituted a violation of the Fourth Amendment); *Kyllo v. United States*, 533 U.S.

Courts have consistently found no tortious conduct when observing or taking a photograph of an individual when his or her “appearance is public and open to the public eye.”³¹⁵ In *Fogel v. Forbes, Inc.*, the plaintiffs claimed that their privacy was invaded when their picture was taken and included in an issue of Forbes Magazine without their consent.³¹⁶ However, because the photograph was taken at the Miami Airport, a place open to the general public, the court dismissed the plaintiff’s claim due to the lack of a reasonable expectation of privacy in the place they were recorded.³¹⁷ Similarly in *Jackson v. Playboy*, plaintiffs could not claim intrusion of privacy when an image of them standing on a city sidewalk was taken.³¹⁸ In *Shulman v. Group W Productions*, a cameraman filmed plaintiffs’ extrication from a car following a crash.³¹⁹ Finding no liability, the court explained that the plaintiffs had no control over the premises and could not have reasonably expected members of the media would be prevented from covering a highway accident.³²⁰

Even plaintiffs who were surveilled while on their own property have generally been unsuccessful under an intrusion theory if they could be viewed from a public or adjacent vantage point.³²¹ In *GTE Mobilnet v. Pascouet*, the plaintiffs alleged an intrusion into their privacy when GTE workers on a neighboring plot looked out over the plaintiffs’ fence and into their backyard.³²² The court held that the

27, 40 (2001) (holding the use of a thermal imaging device not available to general public constituted a search).

315. RESTATEMENT (SECOND) OF TORTS § 652B cmt. c (AM. LAW. INST. 1979); *see also* Wehling v. CBS, 721 F.2d 506, 509 (5th Cir. 1983); *Dempsey v. Nat’l Enquirer*, 702 F. Supp. 927, 931 (D. Me. 1988).

316. *Fogel v. Forbes, Inc.*, 500 F. Supp. 1081, 1083 (E.D. Pa. 1980).

317. *Id.* at 1087.

318. *Jackson v. Playboy Enters.*, 574 F. Supp. 10, 13 (S.D. Ohio 1983).

319. *Shulman v. Group W Prods.*, 955 P.2d 469, 474 (Cal. 1998).

320. *Id.* at 477. The court, however, held that a jury could reasonably find that the plaintiffs had a reasonable expectation of privacy within the helicopter because the helicopter served as an ambulance, which is inherently private, and it is not customary for the media to film the medical treatment of a stranger. *Id.* at 490–91 (“Certainly, if there is any right of privacy at all, it should include the right to obtain medical treatment at home or in a hospital . . . without personal publicity.” (quoting *Barber v. Time, Inc.*, 159 S.W.2d 291, 295 (Mo. 1942))).

321. *McLain v. Boise Cascade Corp.*, 533 P.2d 343, 347 (Or. 1975); *GTE Mobilnet of S. Tex. Ltd. P’Ship v. Pascouet*, 61 S.W.3d 599, 618 (Tex. App. 2001).

322. *GTE Mobilnet*, 61 S.W.3d at 606.

mere fact that maintenance workers looked over into the adjoining yard was insufficient in proving “highly offensive” conduct.³²³ In *McLain v. Boise Cascade Corp.*, the plaintiff alleged that the defendants intruded upon his privacy when they filmed the plaintiff from neighboring property and saw him mowing the lawn and gardening.³²⁴ The court held that the surveillance did not intrude on the plaintiff’s privacy because his activities could have been observed by neighbors or passersby, and the surveillance was neither unreasonable nor unobtrusive.³²⁵ Similarly, in *Florida v. Riley*, the United States Supreme Court concluded that the defendant did not have a reasonable expectation of privacy pertaining to activity in his backyard that was open and visible from a police helicopter flying 400 feet above his property.³²⁶

There are limited circumstances where, even in a public place, information about a person, if accidentally exposed, should not be photographed or recorded.³²⁷ In *Daily Times Democrat v. Graham*, a plaintiff claimed the defendant intruded into her privacy when it published a photograph of her dress blown up as she was leaving a fun house at a county fair.³²⁸ The court held that it would be “illogical, wrong, and unjust” for an individual caught in an embarrassing image to forfeit her right to privacy merely because she was in a public place.³²⁹ Therefore, “where one’s status is changed without [her] volition to a status embarrassing to an ordinary person,” she has a right to be protected from intrusion of privacy.³³⁰ Likewise, in *Huskey v. NBC*, a prisoner claimed that the NBC television company intruded into his privacy when they filmed him without his consent from inside the prison.³³¹ NBC countered that the plaintiff was visible to the public eye and had no reasonable expectation of

323. *Id.* at 618.

324. *McLain*, 533 P.2d at 345.

325. *Id.* at 346 (“If the surveillance is conducted in a reasonable and unobtrusive manner, the defendant will incur no liability for invasion of privacy.”).

326. *See Florida v. Riley*, 488 U.S. 445, 450 (1989).

327. *See* RESTATEMENT (SECOND) OF TORTS § 652B cmt. c, illus. 7 (AM. LAW. INST. 1979).

328. *Daily Times Democrat v. Graham*, 162 So. 2d 474, 475–76 (Ala. 1964).

329. *Id.* at 478.

330. *Id.*

331. *Huskey v. NBC*, 632 F. Supp. 1282, 1285 (N.D. Ill. 1986).

privacy because he could be seen by guards and other inmates.³³² The court allowed the plaintiff's intrusion claim to go forward, noting that the mere fact that a person can be seen by others does not mean that the person cannot be legally "secluded."³³³ Nonetheless, as the majority of cases make clear, liability seems to be an exception as the law favors less restriction in public places.

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.³³⁴ If there is proof of intent, then a drone capturing images inside one's home may give rise to liability assuming that the target of the surveillance was not in public view or visible from adjacent property.³³⁵ On the other hand, the tort may offer no relief if the drone flies over someone's fenced-in backyard and records him.³³⁶ Unsurprisingly, of the few surveys measuring public attitudes towards drones, there is mounting discomfort with drones flying over private property.³³⁷ Legislators are responding to public concern, but it will take time before the law recognizes a privacy expectation when it comes to aerial surveillance. Until then, individuals will receive little legal recourse from unmanned aerial surveillance under a theory of intrusion upon seclusion.

A second theory of liability for drone operators under the umbrella of the privacy torts is the public disclosure of private facts.³³⁸ It is conceivable that drone operators who capture images or gather information regarding matters of private concern could be held liable for disseminating this information to third parties through social

332. *Id.* at 1287.

333. *Id.* at 1287–88 (finding that a prisoner working out in the exercise room of a prison did not reasonably expect to be filmed because he could not be viewed from a public location such as a street or sidewalk).

334. *See* Farber, *supra* note 78, at 225, 228–29.

335. *See, e.g.*, Wolfson v. Lewis, 924 F. Supp. 1413, 1419–20 (E.D. Pa. 1996).

336. *See e.g.*, Jackson v. Playboy Enters., 574 F. Supp. 10, 13 (S.D. Ohio 1983); Fogel v. Forbes, Inc., 500 F. Supp. 1081, 1087 (E.D. Pa. 1980). *But see* Shulman v. Group W Prods., 955 P.2d. 469, 474 (Cal. 1998).

337. SAKIYAMA, *supra* note 225, at 1.

338. RESTATEMENT (SECOND) OF TORTS § 652D (AM. LAW INST. 1979).

media or other means.³³⁹ A person is liable for the publication of private facts when she “gives publicity to a matter concerning the private life of another” so long as “the matter publicized is of a kind that (a) would be highly offensive to a reasonable person, and (b) is not of legitimate concern to the public.”³⁴⁰

“Publicity” means that the matter is communicated to the public at large or to “so many persons” that the matter must be regarded as “substantially certain” to become public knowledge.³⁴¹ Disseminating the information by newspaper, small circulation, or orally to a group is sufficient to give publicity.³⁴² Courts have held that postings to social media pages, despite the potential privacy or setting limitations of the audience, open up the information to the public at large.³⁴³

The information publicized must also be private; publication is protected for matters already in the public domain.³⁴⁴ It is not enough that someone considers the information private.³⁴⁵ To be deemed “private,” there must not be, or have been, records documenting the information as available to the public.³⁴⁶ In *G.D. v. Kenny*, the plaintiff, running for political office, had a past conviction expunged from his record.³⁴⁷ Opponents of the campaign distributed flyers exposing his prior conviction.³⁴⁸ The court found no invasion of privacy when the defendant revealed the plaintiff’s criminal past even though the record was expunged because the matter was once part of the public record.³⁴⁹

339. *See id.*

340. *Id.*

341. *Id.* § 652D cmt. a; *see also* *Cole v. Chandler*, 752 A.2d 1189, 1197 (Me. 2000).

342. RESTATEMENT (SECOND) OF TORTS § 652D cmt. a (AM. LAW INST. 1979). Generally, however, it is not enough to communicate private facts to a single person even if that single person could pass the information on to other people. *See Robins v. Conesco Fin. Loan Co.*, 656 N.W.2d 241, 245 (Minn. Ct. App. 2003).

343. *Moreno v. Hanford Sentinel, Inc.*, 91 Cal. Rptr. 3d 858, 862 (Cal. Ct. App. 2009).

344. *Diaz v. Oakland Tribune*, 188 Cal. Rptr. 762, 771 (Cal. Ct. App. 1983).

345. *See, e.g., G.D. v. Kenny*, 15 A.3d 300, 319–22 (N.J. 2010).

346. *Id.* at 320–21.

347. *Id.* at 304.

348. *Id.* at 305–06.

349. *Id.* at 304, 321.

To establish that the matter publicized would be highly offensive courts look to the “context, conduct, and circumstances”³⁵⁰ surrounding the publication to evaluate whether it would make a reasonable person feel “seriously aggrieved.”³⁵¹ In *Green v. Chicago Tribune Co.*, the defendant published an article about the plaintiffs’ murdered son, which contained unauthorized statements and photographs regarding medical treatment.³⁵² The court held that due to the nature of the information and lack of authorization, a reasonable jury could find that the publication was highly offensive to a reasonable person.³⁵³

The last element, the absence of legitimate public concern regarding the matter, is generally a question of newsworthiness.³⁵⁴ Newsworthiness bars common law liability, since there is typically substantial social value regarding matters of public concern.³⁵⁵ When determining whether a matter is newsworthy, courts weigh “the social value of the facts published, the depth of intrusion into ostensibly private affairs, and the extent to which the party voluntarily acceded to a position of public notoriety.”³⁵⁶ Thus, nearly any truthful information regarding public persons or public affairs, no matter how serious the invasion, will likely be protected.³⁵⁷ However, this protection is not unlimited.³⁵⁸ It disappears when the information ceases to be that “to which the public is entitled, and becomes morbid and sensational prying into the private lives for its own sake.”³⁵⁹ For instance, in *Bimbo v. Viking Press, Inc.*, the court held that—regardless of its truth—a publication depicting incestuous relationships of the Plaintiff did not bear such societal significance as to render it a matter of public concern.³⁶⁰

350. *Green v. Chicago Tribune Co.*, 675 N.E.2d 249, 254 (Ill. App. Ct. 1996).

351. RESTATEMENT (SECOND) OF TORTS § 625D cmt. c (AM. LAW. INST. 1979).

352. *Green*, 675 N.E.2d at 254.

353. *Id.* at 255.

354. *See Shulman v. Group W Prods.*, 955 P.2d. 469, 478 (Cal. 1998).

355. *Id.* at 478, 482.

356. *Briscoe v. Reader’s Digest Ass’n*, 483 P.2d 34, 43 (Cal. 1971).

357. *Id.* at 38 n.5.

358. *Virgil v. Time, Inc.*, 527 F.2d 1122, 1129 (9th Cir. 1975).

359. *Id.* (quoting RESTATEMENT (SECOND) OF TORTS § 625D cmt. f (AM. LAW. INST. 1979)).

360. *Bimbo v. Viking Press, Inc.*, No. 76-3445-S, 1981 U.S. Dist. LEXIS 12180, at *12 (D. Mass.

Conceivably, a drone operator could be held liable for publication of private facts for recording images inside and outside of another's home and disseminating the images via social media or other means of publication.³⁶¹ The surveillance target's location will largely determine liability.³⁶² Google's Street View Program is a scenario with similar features to unmanned aerial surveillance, and has been tested in the courts.³⁶³ Creating the digital images accessible through Google's Street View Program requires Google employees using panoramic cameras mounted to the tops of their vehicles to drive around neighborhoods taking photographs of houses and landmarks.³⁶⁴ Plaintiffs Christine and Aaron Boring sued Google on theories of intrusion upon seclusion and dissemination of private facts for photographs taken of their home and swimming pool viewable from their driveway.³⁶⁵ The Third Circuit reasoned that "no person of ordinary sensibilities would be shamed, humiliated, or have suffered mentally as a result of a vehicle entering in his or her ungated driveway and photographing the view from there."³⁶⁶ Additionally, the court noted that the plaintiff's pool and house could be seen by *anyone* who entered the driveway.³⁶⁷ Recording images of people and property from navigable airspace raises some of the same objections and legal precedents raised in *Boring*.³⁶⁸ Yet the capabilities of drones are potentially more intrusive and nefarious than the technology used in the Google Street View Program.

May 14, 1981).

361. See THOMPSON, *supra* note 163, at 16.

362. See *id.*

363. *Boring v. Google, Inc.*, 362 Fed. Appx. 273, 279 (3d Cir. 2013).

364. *Id.* at 276.

365. *Id.* at 276, 278.

366. *Id.* at 279.

367. *Id.* (finding no valid claim for publicity given to private life where any person, including a mail carrier, delivery persons, or any guest, would have the same view).

368. THOMPSON, *supra* note 163, at 16.

V. THE BEST PATH FORWARD: PROMOTING A BURGEONING INDUSTRY WHILE SAFEGUARDING PRIVACY

The Obama administration embraced drone technology as a “transformative technology” that has huge potential for the private and commercial sectors.³⁶⁹ President Obama also acknowledged the concern this technology poses to existing expectations of privacy.³⁷⁰ The balance between enabling this burgeoning industry to take off and protecting existing privacy norms and expectations is a difficult, if not impossible, task.³⁷¹ There is fierce debate among scholars, lawmakers, regulators, and industry professionals about the best path forward.³⁷² There are those who believe that individual landowners should have the right to exclude unwanted intruders from their airspace.³⁷³ There are others who advocate for laws and regulations to chart a national course for unmanned aircraft into our airspace.³⁷⁴ As a practical matter, a patchwork of individual lawsuits is not a plan; it is a Band-Aid. Lawsuits brought by landowners aggrieved by a drone operation may provide recovery in some cases, but individual cases will not create a predictable path for integrating drones into our airspace. Laws and regulations must circumscribe how, when, and by whom these aerial observers can be used to create a uniform approach toward fostering the potential of this burgeoning industry, while thoughtfully preserving basic privacy interests.

369. Presidential Memorandum, Promoting Economic Competitiveness While Safeguarding Privacy, Civil Rights, and Civil Liberties in Domestic Use of Unmanned Aircraft Systems (Feb. 15, 2015), <https://www.whitehouse.gov/the-press-office/2015/02/15/presidential-memorandum-promoting-economic-competitiveness-while-safegua>.

370. *Id.*

371. *See Should You Be Allowed to Prevent Drones From Flying Over Your Property?*, *supra* note 28.

372. *Id.*

373. *Id.* Professor Michael A. Froomkin argues that drones are too ubiquitous and pose too great a threat to privacy to not allow individual landowners to avail themselves of remedies under tort theories such as trespass, nuisance and other related torts. A. Michael Froomkin, *YES: Our Privacy and Safety Are at Risk*, in *Should You Be Allowed to Prevent Drones From Flying Over Your Property?*, *supra* note 28.

374. *Should You Be Allowed to Prevent Drones From Flying Over Your Property?*, *supra* note 28. Professor Ryan Calo argues for collective action on the regulatory and legislative front to craft privacy protections related to drone use. Ryan Calo, *NO: It is the Way to Kill Innovation*, in *Should You Be Allowed to Prevent Drones From Flying Over Your Property?*, *supra* note 28.

Unquestionably, drones are quickly becoming a commercial force all over the globe.³⁷⁵ When drones are able to stay aloft for hours and safely carry out autonomous flights, then people will rely on them for transportation in the same ways we currently rely on planes, trains, and automobiles. For that reason, Congress tasked the FAA with developing a plan to integrate UAS into our national airspace.³⁷⁶ Alongside the FAA's efforts for safe integration of drones into the national airspace, the National Telecommunications and Information Administration (NTIA), an arm of the Department of Commerce, devised a set of "best practices" for privacy, transparency, and accountability in the use of drones.³⁷⁷ Some of the best practices include: making reasonable efforts to notify individuals who will be impacted by the operation to collect data, avoiding operations where subjects have a reasonable expectation of privacy, minimizing flights over or within private property without consent from landowners or proper legal authority, and avoiding using UAS for continuous and persistent collection of data.³⁷⁸ Operators should maintain a privacy

375. Nick Wingfield, *A Field Guide to Civilian Drones*, N.Y. TIMES (Aug. 29, 2016), <http://www.nytimes.com/interactive/2015/technology/guide-to-civilian-drones.html>.

376. FED. AVIATION ADMIN., INTEGRATION OF CIVIL UNMANNED AIRCRAFT SYSTEMS (UAS) IN THE NATIONAL AIRSPACE SYSTEM (NAS) ROADMAP 67 (2013).

377. NAT'L TELECOMMS. & INFO. ADMIN., VOLUNTARY BEST PRACTICES FOR UAS PRIVACY, TRANSPARENCY, AND ACCOUNTABILITY (2016), https://www.ntia.doc.gov/files/ntia/publications/uas_privacy_best_practices_6-21-16.pdf. President Obama directed the formation of a multistakeholder taskforce facilitated through NTIA to "develop and communicate best practices for privacy, accountability, and transparency issues regarding commercial and private UAS use in the NAS." *Multistakeholder Process: Unmanned Aircraft Systems*, NAT'L TELECOMMS. & INFO. ADMIN. (June 21, 2016), <https://www.ntia.doc.gov/other-publication/2016/multistakeholder-process-unmanned-aircraft-systems>. The process that concluded in May 2016 included "stakeholders from industry, civil society, and academia." *Id.* The stakeholders included Amazon, Association for Unmanned Vehicle Systems International (AUVSI), Center for Democracy and Technology, Commercial Drone Alliance, Consumer Technology Association, CTIA, Future of Privacy Forum, Intel, New America's Open Technology Institute, PrecisionHawk, X (Formerly Google [x]), Small UAV Coalition, Online Trust Alliance (OTA), News Media Coalition, Newspaper Association of America (NAA), National Association of Broadcasters (NAB), Radio Television Digital News Association (RTDNA), Digital Content Next (DCN), Software & Information Industry Association (SIIA), NetChoice, U.S. Chamber of Commerce." *Id.* The practices resulting from this process are voluntary and are not meant to create a legal standard. NAT'L TELECOMMS. & INFO. ADMIN., *supra*, at 2. The focus of the practices concern the use of what is termed "covered data," which is defined as "information collected by a UAS that identifies a particular person." *Id.* at 4. "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." *Id.*

378. NAT'L TELECOMMS. & INFO. ADMIN., *supra* note 377, at 5–6.

policy which details the purpose for which the data will be collected, the kinds of data collected, the length of time data will be retained, and the practices for de-identification.³⁷⁹ They should also make reasonable efforts to not share or use collected data for marketing purposes without prior consent.³⁸⁰ Many of these best practices bear similarity to the Drone Aircraft Privacy and Transparency Act introduced in Congress in 2013 and reintroduced in 2015.³⁸¹ Federal regulators left open the opportunity for state and local governments to regulate drone operations as they relate to privacy and property rights.³⁸² This is clear since the FAA circumscribed its rules to focus exclusively on safety and efficiency.³⁸³ The door is open for states and municipalities to set limits on when and where drones can fly, within the parameters already set by the FAA.³⁸⁴ For instance, a municipality could restrict the distance a drone may fly relative to buildings, or further limit the daytime hours in which a drone may operate.³⁸⁵ Assuming these regulations are designed to ensure privacy interests—and do not conflict with federal laws—state and local governments are entitled to regulate drones to serve their particular interests.³⁸⁶ The recommendations made by the NTIA, along with recent drone legislation designed to ensure privacy while promoting drone technology, will help to strike the right balance between promoting economic opportunity and safeguarding privacy interests in the age of drones.

379. *Id.* at 6.

380. *Id.*

381. *See* Drone Aircraft Privacy and Transparency Act of 2015, H.R. 1229, 114th Cong. (2015); Drone Aircraft Privacy and Transparency Act of 2013, H.R. 1262, 113th Cong. (2013).

382. *See* Kang, *supra* note 21.

383. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064, 42,190 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 61, et al.) (“[T]he FAA notes that its mission is to provide the safest, most efficient aerospace system in the world, and does not include regulating privacy.”)

384. *See* Kang, *supra* note 21.

385. *Id.*

386. ESSEX, *supra* note 7, at 13.

CONCLUSION

The drone's size, versatility, and maneuverability separate it from other aircraft and satellites. When the property laws changed to accommodate high altitude aircraft, such as planes and even helicopters, it was understood that the risks to privacy were minimal and the need for air travel was great. However, drones maneuver in low altitude airspace, thereby posing new and tangible threats to privacy. As people turn to the courts for relief, the thorny issues raised in this article about the applicability of existing torts to drones will have to be resolved. The shortcomings of these doctrines will likely pave the way for the passage of new drone laws, designed to settle the ambiguity about where a property owner's rights to airspace begin and end. No doubt the new rules governing small commercial drones will exponentially increase the number of drones in our skies. At the same time, state and local governments have the opportunity to define the scope of landowners' property interest in low altitude airspace, thereby balancing the interests of a burgeoning industry with those who wish to keep drones at a reasonable distance. Shortcomings in existing torts to handle drone privacy cases will direct future legislation. To be sure, laws that give property owners express rights to exclude drones from the navigable airspace directly above their property will ameliorate some of the deficiencies in how our existing torts are currently being applied to drones.