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Potential Tort Liability for Personal Use of Drone Aircraft.

Benjamin D. Mathews

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COMMENT

POTENTIAL TORT LIABILITY FOR PERSONAL USE OF DRONE AIRCRAFT

BENJAMIN D. MATHEWS*

I. Introduction.....	574
II. Modern Use of Drones by Private Citizens	580
III. Interplay Between Existing Tort Law and Private Use of Drones	584
A. Invasion of Privacy.....	584
B. Trespass	591
C. Private Nuisance and Abatement.....	594
D. Strict Liability	597
E. Limited Tort Rights of Drone Operators	597
IV. Potential for Federal Preemption	598
V. Conclusion.....	601

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I. INTRODUCTION

People have always been interested in flight.¹ From the day Wilbur and Orville Wright completed their first successful pass above the beach at Kitty Hawk, innovation has propelled forward with an eye to the sky.² Human-engineered flight has come a long way since then—as former FAA Administrator Marion Blakey stated, “It took only a hundred years to go from the sands of Kitty Hawk to the sands of the Mojave.”³ Unmanned aircraft became possible through the introduction of the Kettering Bug, conceived by Ohioan Charles Kettering in 1917.⁴ During World War II, efforts were made to deploy remotely piloted seaplanes, possibly the first use of military drones.⁵ More recently, the U.S. military has deployed

1. See R. G. GRANT, *FLIGHT: 100 YEARS OF AVIATION* 10 (Dominick A. Pisano et al. eds., 2002) (“Human beings have always dreamed of flight. They did not, however, dream of the Boeing 747.”); see also U.S. Patent No. 1,655,114 (filed Oct. 4, 1927) (detailing Nikola Tesla’s invention of a “helicopter plane”); FRITJOF CAPRA, *LEARNING FROM LEONARDO: DECODING THE NOTEBOOKS OF A GENIUS* (Berrett-Koehler Publishers, Inc., 2013) (quoting Leonardo da Vinci, who in the 1500s—after considerable study of birds and flight—wrote, “a man with his assembled and great wings, exerting force against the resisting air and conquering it, will be able to subjugate it and raise himself above it”).

2. See GRANT, *supra* note 1, at 20 (illustrating Orville Wright’s twelve-second flight over a distance of 120 feet). Wright flew four times that day, with a final flight of fifty-nine seconds at 852 feet. *Id.* The American press embellished the accomplishment with such wild inaccuracies that Wright’s efforts were derided by the French. So, in 1908, Wright traveled to France and in front of a large crowd, flew for one minute and forty-five seconds, farther and longer than his critics had ever seen. See *id.* at 20, 27 (describing American exaggeration, French skepticism, and Wright’s successful 1908 flight); FRANK H. WINTER & F. ROBERT VAN DER LINDEN, *100 YEARS OF FLIGHT: A CHRONICLE OF AEROSPACE HISTORY, 1903–2003*, at 3 (Am. Inst. of Aeronautics & Astronautics, 2003) (“Unfortunately for the Wrights, they then turned their attention to protecting their aircraft patent and inadvertently allowed their competition to surpass them.”).

3. See Marion Blakey, Adm’r, FAA, *Getting Ready for Unmanned Aircraft* (Sept. 27, 2005) (transcript available at http://www.faa.gov/news/speeches/news_story.cfm?newsId=6066) (referring to the flights of the Wright brothers and rocket launch test sites in the California desert).

4. See Nidhi Subbaraman, *Don’t Call ‘Em Drones: The Wide World of Unmanned Flying Machines*, NBC NEWS (Mar. 15, 2013) (on file with the *St. Mary’s Law Journal*) (explaining the Kettering Bug was originally conceived as a flying torpedo and looked as such). The Kettering Bug, and a similar aircraft named the Aerial Target (A.T.), were essentially the world’s first cruise missiles. See WINTER & LINDEN, *supra* note 2, at 6 (“The A.T. is an experimental, unmanned, radio-controlled monoplane, a flying bomb conceived by A.M. Low, and is considered Britain’s first guided missile.”). Neither the A.T. nor the Kettering Bug were ever operational. See *id.* (exploring the development of the two aircraft and the decision to shut down the respective programs).

5. See Blakey, *supra* note 3 (“The second World War brought with it hopes for an unmanned seaplane and what may have been the first use of drones.”). Reginald Denny, a pilot in the Royal Air Force during World War II, is credited as an early pioneer of unmanned flight system after successfully flying the Target Drone Denny in 1943. See Subbaraman, *supra* note 4 (“During World War II, the actor and former RAF pilot Reginald Denny founded a company that manufactured ‘target drone Denny’s,’ among the first radio-controlled aircrafts.”); see also James Bennett, *Biography of Reginald Leigh Denny*, ACAD. OF MODEL AERONAUTICS (Aug. 2001), <https://www.modelaircraft.org/>

unmanned aircraft to conduct surveillance, identify potential insurgent targets, and carry out precision missile strikes in Iraq and Afghanistan.⁶ Closer to home, drones are used to survey America's border with Mexico.⁷ Amazon CEO Jeff Bezos has announced plans for same-day delivery of packages weighing five pounds or less, supported by GPS-programmed octocopters.⁸ Drone aircraft have entered the private market as well and are being embraced with jubilant enthusiasm on the part of hobbyists,⁹ including those acutely familiar with the use of model aircraft and others newly interested.¹⁰

This Comment examines potential tort liability associated with the private use of drone aircraft.¹¹ The discussion presents issues that arise when the rights of one private individual to own and fly a drone conflict with another private individual's right to be safe from trespass and invasions of privacy.¹²

files/DennyReginald.pdf (chronicling Denny's development of military radio-controlled target planes).

6. See Sarah Kellogg, *Drones: Coming to the Skies Near You*, WASH. L., July–Aug. 2013, at 1, 2, available at <http://www.dcb.org/bar-resources/publications/washington-lawyer/articles/july-august-2013-drones.cfm> (discussing the use of military drones to deliver supplies, perform reconnaissance, and conduct missile strikes).

7. See *id.* (identifying the use of drones to surveil the U.S.–Mexico border).

8. See *60 Minutes: Amazon's Jeff Bezos Looks to the Future* (CBS News television broadcast Dec. 1, 2013), available at <http://www.cbsnews.com/news/amazons-jeff-bezos-looks-to-the-future> (interviewing Jeff Bezos who stated that 86% of Amazon's inventory weighs less than five pounds and predicted a ten mile radius of delivery using current-generation technology). Bezos was quick to point out this technology is still in the research and design phases, but he maintained that he was waiting for the FAA to issue a ruling on legality. See *id.* (identifying Amazon's plan to implement thirty minute package deliveries using drones). The FAA issued a Notice of Interpretation and Request for Comment on June 18, 2014, addressing commercial delivery of packages by model aircraft. See Interpretation of the Special Rule for Model Aircraft, 79 Fed. Reg. 36,172, 36,173–74 (June 25, 2014) (codified at 14 C.F.R. pt. 91) (stating model aircraft may be only “flown [strictly] for hobby or recreational purposes” and clarifying that “[d]elivering packages to people for a fee” is neither); see also Lorenzo Franceschi-Bicchierai, *FAA Clarifies that Amazon Drones Are Illegal*, MASHABLE (June 24, 2014), <http://mashable.com/2014/06/24/faa-amazon-drones-2> (reporting the FAA specifically prohibits the use of drone aircraft to deliver commercial packages).

9. See, e.g., PARROT, Q2 2014 EARNINGS INVESTORS PRESENTATION 24 (2014), <http://www.parrotcorp.com/en/financialpublications/q22014earningspresentationroadshow> (announcing the sales of 670,000 camera-equipped Parrot drones from 2010 to 2013). The earnings report also boasts 190,000 registered users and 40 million videos. See *id.* (listing the number of registered users and videos recorded).

10. See Jeff Beckham, *Drones Will Transform Sports Photography—Once the FAA Gets Out of the Way*, WIRED (Sept. 23, 2014, 6:30 AM), <http://www.wired.com/2014/09/drones-will-transform-sports-photographyonce-faa-gets-way> (“[E]ven a novice . . . can have a drone up and running in minutes.”).

11. See ALISSA M. DOLAN & RICHARD M. THOMPSON II, CONG. RESEARCH SERV., R42940, INTEGRATION OF DRONES INTO DOMESTIC AIRSPACE: SELECTED LEGAL ISSUES Summary (2013) (addressing the impact of increased drone activity on the development of laws concerning air travel).

12. See *Gleason v. Smolinski*, No. NNH-CV06-5005107-S, 2009 WL 2506607, at *5 (Conn.

Section II of this Comment discusses modern use of drones in the consumer market and emphasizes the unique features of these aircraft that will present novel legal issues. Section III examines potential drone liability through the lens of existing tort causes of action. Current laws sufficiently address some potential torts committed using drones.¹³ For example, a cause of action will accrue for a violation of ubiquitous peeping tom laws regardless of whether the alleged perpetrator commits a violation using a hand-held camera or a camera-equipped drone.¹⁴ Because existing causes of action are insufficient to address all issues that drone use will provoke, new laws will need to be created specifically for drones.¹⁵

Super. Ct. July 20, 2009) (recognizing unreasonable invasions of private life are “governed by [F]irst [A]mendment principles” (quoting *Goodrich v. Waterbury Republican-Am., Inc.*, 488 A.2d 1317, 1331 (1982))); DOLAN & THOMPSON, *supra* note 11, at 17 (suggesting instances when free speech rights trump privacy rights); John Villaseñor, *Observations from Above: Unmanned Aircraft Systems and Privacy*, 36 HARV. J.L. & PUB. POL’Y 457, 498 (2013) (“For private entities, which are not bound by Fourth Amendment restrictions that apply to the government, the key constitutional question is the extent of their First Amendment privilege to gather information.”); Hilda Muñoz, *WFSB Employee Sues Hartford Police over Drone Incident*, HARTFORD COURANT (Feb. 18, 2014), http://articles.courant.com/2014-02-18/community/hc-hartford-drone-lawsuit-0219-20140218_1_drone-video-federal-lawsuit-small-drones (documenting the story of a private citizen who sued police for chilling his speech by forcing him to “[stop] . . . using his drone at the scene of a fatal car accident”). See generally Barry P. McDonald, *The First Amendment and the Free Flow of Information: Towards a Realistic Right to Gather Information in the Information Age*, 65 OHIO ST. L.J. 249 (2004) (balancing a reasonable exercise of First Amendment newsgathering rights with constitutional privacy protections).

13. See TEX. GOV’T CODE ANN. § 423 (West 2013) (outlining the Texas Privacy Act); see also Jeffrey Kosseff, *Drones: Aren’t the Laws Already on the Books?*, INT’L ASS’N PRIVACY PROFS. (Feb. 25, 2014), <https://privacyassociation.org/news/a/drones-arent-the-laws-already-on-the-books> (acknowledging common law privacy torts “would apply equally to drones as they do to older information-gathering technologies”).

14. See TEX. PENAL CODE ANN. § 42.01(a)(11)(A) (West Supp. 2013) (“A person commits an offense if he intentionally or knowingly . . . for a lewd or unlawful purpose . . . enters on the property of another and looks into a dwelling on the property through any window or other opening in the dwelling.”); George Cho, *Unmanned Aerial Vehicles: Emerging Policy and Regulatory Issues*, 22 J.L. INFO. & SCI. 201, 219 (2013) (“‘Peeping Tom’ laws make it impermissible to use a camera mounted on a UAV to spy on a [neighbor’s] backyard sunbathing habits. This is premised on the basis that a [neighbor] has a reasonable expectation of privacy protection under the Fourth Amendment of the US Constitution and is justified in thinking that no one should be looking from above.”).

15. See M. Ryan Calo, *The Drone as Privacy Catalyst*, 64 STAN. L. REV. ONLINE 29, 31 (2011), http://www.stanfordlawreview.org/sites/default/files/online/articles/64-SLRO-29_1.pdf (arguing the prevalence of drones in society will be the incentive needed to rethink privacy implications on a national level); Chris Schlag, Comment, *The New Privacy Battle: How the Expanding Use of Drones Continues to Erode Our Concept of Privacy and Privacy Rights*, 13 U. PITT. J. TECH. L. & POL’Y, no. 2, 2013, at 1, 20 (“Currently, none of the proposed state legislation fully addresses privacy nor provides sufficient privacy checks on third party use of drones for surveillance purposes.”); see also U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-12-981, UNMANNED AIRCRAFT SYSTEMS: MEASURING PROGRESS AND ADDRESSING POTENTIAL PRIVACY CONCERNS WOULD FACILITATE INTEGRATION INTO THE NATIONAL AIRSPACE SYSTEM 35 (2012), available at <http://www.gao.gov/assets/650/648348.pdf> [hereinafter GAO-12-981] (advocating for

Questions are likely to arise over issues such as drone flights within the curtilage, or the immediate reaches of one's home.¹⁶ According to the U.S. Supreme Court, the curtilage is viewed as a semi-private area that is afforded special protections—those who enter it, by foot or by air, receive a higher level of scrutiny.¹⁷ Additionally, this Comment will analyze drones as a potential nuisance, including self-help abatement remedies available to an offended landowner.¹⁸ Although the focus will generally

congressional legislation to address privacy concerns); Matthew Lipka, *The Private Law of Drones*, CITY L. (April 23, 2013) (on file with the *St. Mary's Law Journal*) (claiming traditional tort law does not protect a private individual's right to privacy).

16. See *Kyllo v. United States*, 533 U.S. 27, 33–34 (2001) (“It would be foolish to contend that the degree of privacy secured to citizens by the Fourth Amendment has been entirely unaffected by the advance of technology. For example, . . . the technology enabling human flight has exposed to public view (and hence, we have said, to official observation) uncovered portions of the house and its curtilage that once were private.”); *California v. Ciraolo*, 476 U.S. 207, 213 (1986) (emphasizing “the mere fact that an individual has taken measures to restrict some views of his activities” does not prevent an officer from observing them from a public vantage point); see also Jonathan Turley, *Man Uses Private Drone to Spy on Neighbors*, JONATHAN TURLEY (May 16, 2013), <http://jonathanturley.org/2013/05/16/man-uses-private-drone-to-spy-on-neighbors> (“[B]oth the government and private parties are subject to common law protections of privacy, which recognizes that the privacy of a home includes its curtilage[,] or area surrounding the home.”) Some scholars argue that the First Amendment rights of the drone operator will at times outweigh the right of other individuals to be undisturbed. See DOLAN & THOMPSON, *supra* note 11 (emphasis omitted) (“[T]here are instances where the public’s First Amendment rights to gather and receive news might outweigh an individual’s interest in being let alone.”).

17. See *United States v. Causby*, 328 U.S. 256, 264 (1946) (“[I]t is obvious that if the landowner is to have full enjoyment of the land, he must have exclusive control of the immediate reaches of the enveloping atmosphere.”); see also Villaseñor, *supra* note 12, at 500 n.236 (offering the example of a homeowner who has the right to trim overhanging “tree branches in the air above his or her land”). *But see Florida v. Riley*, 488 U.S. 445, 451 (1989) (holding no reasonable expectation of privacy existed when police officers gathered evidence by making two flights 400 feet over a homeowner’s yard and saw contraband in plain sight through holes in greenhouse roof); *Ciraolo*, 476 U.S. at 215 (finding no constitutional violation of privacy when the police observed a homeowner’s illegal marijuana plants from an airplane at an altitude of 1,000 feet). Any protection of the curtilage is limited to private residences. See *Dow Chem. Co. v. United States*, 476 U.S. 227, 239 (1986) (applying the “open field” doctrine to a large outdoor industrial complex and denying injunctive relief sought to prevent government use of footage acquired by aerial photography); see also *Donovan v. Dewey*, 452 U.S. 594, 598–99 (1981) (confirming a commercial property owner’s reasonable expectation of privacy differs from a homeowner).

18. See RESTATEMENT (SECOND) OF TORTS § 260 (1965) (addressing the privilege of an individual to act reasonably to protect land or chattels from unreasonable harm); see also DOLAN & THOMPSON, *supra* note 11 (suggesting the introduction of drones to the airways will give rise to issues regarding landowners’ rights to protect private property from drone trespass); Cho, *supra* note 14, at 220 (noting a “landowner is entitled to protect property from intrusion by a drone”); Ben Wolfgang, *Drone-Hunting Permits on Hold—Colorado Town to Let Voters Decide in November*, WASH. TIMES (Aug. 7, 2013), <http://www.washingtontimes.com/news/2013/aug/7/drone-hunting-permits-hold-colorado-town-let-voter> (mentioning a Deer Trail, Colorado ordinance that would allow residents to shoot drones for cash prizes).

be on the operator of drone aircraft, liability also exists for persons who interfere unreasonably with another person's use of drones.¹⁹

Finally, Section IV of this Comment highlights the interplay between tort law and potential federal regulations, including the possibility of preemption.²⁰ Scholars disagree about whether private drone aircraft regulations should be left to state or federal legislatures.²¹

It is worth noting that the nomenclature used to describe these flying devices is varied²² and contentious.²³ Common names include: drone,²⁴

19. See Mike Flacy, *Man Allegedly Shoots Down Neighbor's Drone with Shotgun*, DIGITAL TRENDS (Oct. 1, 2014), <http://www.digitaltrends.com/cool-tech/new-jersey-man-allegedly-shoots-neighbors-drone> (reporting a potential civil action against a New Jersey homeowner who fired a shotgun at a drone being used to surveil a neighboring home under construction).

20. See DOLAN & THOMPSON, *supra* note 11, at 29 (identifying the extent state laws can regulate drone use without federal law preemption).

21. See Melissa Barbee, Comment, *Uncharted Territory: The FAA and the Regulation of Privacy via Rulemaking for Domestic Drones*, 66 ADMIN. L. REV. 463, 479–81 (2014) (examining the tension between federal and state regulation of drone privacy laws); Gregory S. McNeal, *FAA Has Commercial Drone Regulations Backwards*, FORBES (July 1, 2014, 4:32 PM), <http://www.forbes.com/sites/gregorymcneal/2014/07/01/faa-struggling-to-deal-with-drones-now-going-after-realtors-and-farmers> (discussing the FAA Modernization and Reform Act and suggesting “[t]he better way for the FAA to regulate would be to pass interim guidelines for the use of very small unmanned aircraft (perhaps those weighing less than 4.4 pounds)”; see also GAO-12-981, *supra* note 15, at 36 (mentioning the FAA’s mission, which focuses primarily on safety, does not include efforts to regulate privacy issues stemming from onboard UAS equipment so long as the equipment does not affect safety)).

22. See KEVIN W. WILLIAMS, A SUMMARY OF UNMANNED AIRCRAFT ACCIDENT/INCIDENT DATA: HUMAN FACTORS IMPLICATIONS 1 (2004), available at <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA460102> (acknowledging the “[d]esignations for unmanned aircraft are almost as varied as the aircraft themselves”); see also Cho, *supra* note 14, at 203 (classifying and characterizing types of UAVs). See generally Mark Edward Peterson, *The UAV and the Current and Future Regulatory Construct for Integration into the National Airspace System*, 71 J. AIR L. & COM. 521, 594–99 (2006) (advocating a categorical approach when classifying drones).

23. See Thomas Larson, *We Don't Call Them Drones Anymore*, SAN DIEGO READER (Feb. 5, 2014), <http://www.sandiegoreader.com/news/2014/feb/05/cover-we-dont-call-them-drones-any-more> (claiming the term “drone” is a misnomer meant for weaponized military aircraft); Subbaraman, *supra* note 4 (recognizing “drone” as having a specific, negative connotation); see also Brian Fung, *Why Drone Makers Have Declared War on the Word 'Drone'*, WASH. POST (Aug. 16, 2013), <http://www.washingtonpost.com/blogs/the-switch/wp/2013/08/16/why-drone-makers-have-declared-war-on-the-word-drone/> (“For most Americans today, the word ‘drone’ conjures images of lethal spy planes raining missiles down on targets in foreign theaters of war. But that perception doesn’t bode well for a burgeoning set of drone companies looking to shake up the civil aviation sector.”). Some scholarly criticism of the drone moniker is based on the argument that pilotless vehicles are unable to make in-flight decisions consistent with having artificial intelligence and are inherently dependent upon a human pilot for input. See Cho, *supra* note 14, at 203–04 (“Drones have been so named because they have no ‘mind’ of their own—a robot with little independent decision-making capabilities.”); Kellogg, *supra* note 6, at 8 (quoting Massachusetts Institute of Technology Professor Mary Cummings, “UAVs today are heavily automated and not autonomous. The more guessing you have to use in a situation the more autonomy that you have. We are giving these

Unmanned Aerial Vehicle (UAV),²⁵ Unmanned Aircraft System (UAS),²⁶ unmanned aircraft,²⁷ multi-rotor,²⁸ model aircraft,²⁹ and quadcopter.³⁰ The Federal Aviation Administration prefers the term UAS.³¹ For convenience, the term “drone” will be primarily used in this Comment to generally address all vehicles discussed.³²

systems the ability to reason on their own.”). *But see* FAA, AVIATION SAFETY UNMANNED AIRCRAFT PROGRAM OFFICE, INTERIM OPERATIONAL APPROVAL GUIDANCE 08-01: UNMANNED AIRCRAFT SYSTEMS IN THE U.S. NATIONAL AIRSPACE SYSTEM 11 (2008) (asserting a UAS can be completely manual and the majority are, to certain degree autonomous). 24. *See* Drone Aircraft Privacy and Transparency Act of 2013, S. 1639, 113th Cong. § 2 (2013) (identifying the term “drone” as a common moniker); Barbee, *supra* note 21, at 466 (noting the term “drone” is a common name for unmanned aircraft); *see also* Margot E. Kaminski, *Drone Federalism: Civilian Drones and the Things They Carry*, 4 CALIF. L. REV. CIR. 57, 58 (2013), available at <http://www.californialawreview.org/wp-content/uploads/2014/10/Drone-Federalism-Civilian-Drones-and-the-Things-They-Carry.pdf> (describing the unmanned aircraft currently at issue as “drones”). 25. *See* DOLAN & THOMPSON, *supra* note 11, at 1 (indicating drones are also described as unmanned aerial vehicles).

24. *See* Drone Aircraft Privacy and Transparency Act of 2013, S. 1639, 113th Cong. § 2 (2013) (identifying the term “drone” as a common moniker); Barbee, *supra* note 21, at 466 (noting the term “drone” is a common name for unmanned aircraft); *see also* Margot E. Kaminski, *Drone Federalism: Civilian Drones and the Things They Carry*, 4 CALIF. L. REV. CIR. 57, 58 (2013), available at <http://www.californialawreview.org/wp-content/uploads/2014/10/Drone-Federalism-Civilian-Drones-and-the-Things-They-Carry.pdf> (describing the unmanned aircraft currently at issue as “drones”). 25. *See* DOLAN & THOMPSON, *supra* note 11, at 1 (indicating drones are also described as unmanned aerial vehicles).

25. *See* DOLAN & THOMPSON, *supra* note 11, at 1 (indicating drones are also described as unmanned aerial vehicles).

26. *See* Fung, *supra* note 23 (discussing the desire of companies who manufacture civilian unmanned aerial systems to eliminate the term “drone”).

27. *See* Blakey, *supra* note 3 (mentioning unmanned aircraft and the move to remote pilots).

28. *See* Larson, *supra* note 23 (identifying a specialty aircraft called a “multi-rotor” or “quadcopter”).

29. *See* Interpretation of the Special Rule for Model Aircraft, 79 Fed. Reg. 36,172, 36,173–74 (June 25, 2014) (codified at 14 C.F.R. pt. 91) (discussing model aircraft); *see also* FAA, DEPT OF TRANS. ADVISORY CIRCULAR 91-57, MODEL AIRCRAFT OPERATING STANDARDS (1981), available at http://www.faa.gov/documentlibrary/media/advisory_circular/91-57.pdf (outlining model aircraft standards).

30. *See* Larson, *supra* note 23 (describing a quadcopter).

31. *See* Subbaraman, *supra* note 4 (reporting FAA spokesman, Les Dorr, thinks “UAS” is a perfectly good definition); *see also* *Unmanned Aircraft Systems (UAS) Frequently Asked Questions*, FAA, <http://www.faa.gov/uas/faq> (last modified Mar. 4, 2015, 1:26 PM) (“A UAS is the unmanned aircraft (UA) and all of the associated support equipment, control station, data links, telemetry, communications and navigation equipment, etc., necessary to operate the unmanned aircraft.”). *See generally* Peterson, *supra* note 22, at 528–31 (discussing why the FAA continues to closely associate the word “aircraft” with its definition of drones).

32. *See* WELLS C. BENNETT, BROOKINGS INST., CIVILIAN DRONES, PRIVACY, AND THE FEDERAL–STATE BALANCE 15 n.1 (2014), available at http://www.brookings.edu/~media/Research/Files/Reports/2014/09/civilian-drones-privacy/civilian_drones_privacy_bennett_NEW.pdf?la=en (“The very word ‘drone’ suggests near or even total autonomy, and thus incorrectly describes the workings of unmanned aircraft, which typically obey the commands of human, ground-

II. MODERN USE OF DRONES BY PRIVATE CITIZENS

Drones are becoming common in the private sector.³³ Recent sales figures for drones are considerable, and projections continue to grow.³⁴ Although estimates for the private market vary, drone sales from one company, Parrot, reached 670,000 units by the first quarter of 2014.³⁵ Analysts estimate the current global market (including military purchases) for unmanned aerial vehicles to be \$6.4 billion today, increasing two-fold by 2024.³⁶ Further evidencing society's growing acceptance of drones in daily life, several U.S. universities now offer advanced studies and degree programs in unmanned aircraft systems.³⁷ Drones are frequently used to film and photograph sporting events, weddings, family gatherings, and landscapes.³⁸ More novel—albeit successful—uses of drones include the delivery of beer to South African concert patrons³⁹ and pizza to New

based pilots. Despite the inaccuracy, 'drone' has become pervasive.”).

33. See Beckham, *supra* note 10 (“[T]he technology has evolved so that the cost is much more accessible to the general user.”); see also Calo, *supra* note 15, at 30 (discussing current drone usage and the incentive for future growth in the private sector); Lynn Brezosky, *USAA Seeks OK on Drone Testing*, SAN ANTONIO EXPRESS-NEWS (Oct. 2, 2014, 8:56 PM), <http://www.expressnews.com/business/local/article/USAA-seeks-OK-on-drone-testing-5797647.php> (considering USAA's request to operate drones on private rural property for the purpose of making property damage assessments).

34. See BENNETT, *supra* note 32, at 1 (reporting drones are becoming increasingly less expensive). Future market projections are bullish. See Beckham, *supra* note 10 (referring to the increasing popularity of consumer drones).

35. See PARROT, *supra* note 9, at 24 (announcing drone sales figures in yearly and cumulative measurements).

36. See Press Release, Teal Grp. Corp., Teal Group Predicts Worldwide UAV Market Will Total \$91 Billion in Its 2014 UAV Market Profile and Forecast (July 17, 2014, 11:01 AM), <http://www.tealgroup.com/index.php/about-teal-group-corporation/press-releases/118-2014-uav-press-release> (estimating current annual drone spending at \$6.4 billion and forecasting annual worldwide sales in 2024 to be \$11.5 billion, totaling nearly \$91 billion over the next decade).

37. See Matthew L. Wald, *Just Don't Call It a Drone*, N.Y. TIMES (Feb. 1, 2013), <http://www.nytimes.com/2013/02/03/education/edlife/universities-offer-degrees-in-unmanned-aircraft-systems.html> (commenting on the courses and degree programs offered in unmanned aircraft systems).

38. See Beckham, *supra* note 10 (explaining the current use of drones at sporting events and emphasizing the advances that will soon be possible); see also Brezosky, *supra* note 33 (reporting the insurance giant, USAA, has petitioned the FAA for permission to test drones for use in disaster assessment and property loss); Joseph Serna, *Drones in L.A.: South Bay Man Flies Aircraft to Monitor Police*, L.A. TIMES (June 23, 2014, 4:58 PM), <http://www.latimes.com/local/lanow/la-me-ln-drones-police-south-bay-20140623-story.html> (tracing one citizen who uses drones to monitor police behavior at DUI checkpoints); Matthew Lipka, *The City's Drone Opportunity*, CITY L. (Apr. 9, 2013) (on file with the *St. Mary's Law Journal*) (illustrating drones are used for “[s]urveying crime scenes, investigating arson, tracking cattle thieves, fighting forest fires, and search and rescue missions”).

39. See *Drone Delivers Beers—Not Bombs—at South Africa Music Festival*, N.Y. DAILY NEWS (Aug. 9, 2013, 2:44 PM), <http://www.nydailynews.com/life-style/eats/drone-drops-beers-bombs-south-africa-article-1.1422617> (“After clients place an order using a smartphone app, a drone zooms 50 feet

York suburbanites.⁴⁰ Drones have also been used by private citizens to record unlawful corporate activities, such as environmental pollution.⁴¹

The introduction of drones to the private market has not been without problems.⁴² Some operators are highly skilled—having taken courses in aviation—possibly being passenger-aircraft pilots themselves, or simply having accrued many hours of flying time.⁴³ However, the majority of

above the heads of the festival-goers to make the delivery.”).

40. See Frank Rosario, *Pizzeria Owner Uses Drone to Deliver Pie in Test Flight*, N.Y. POST (Nov. 7, 2014, 3:25 AM), <http://nypost.com/2014/11/07/pizzeria-owner-uses-drone-to-deliver-pie-in-test-flight> (“A Brooklyn pizzeria owner, hoping to send his business soaring, successfully made a test delivery by drone Thursday, dropping a pie into the hands of a customer in Prospect Heights.”). The drone’s first effort resulted in a crash landing. *Id.*

41. See Gary Mortimer, *Dallas Meat Packing Plant Investigated After Drone Images Reveal Pollution*, SUAS NEWS (Jan. 23, 2012), <http://www.suasnews.com/2012/01/11389/dallas-meat-packing-plant-investigated-after-drone-images-reveal-pollution> (examining a hobbyist whose \$75 drone, equipped with a simple camera, discovered a leaking pipe of pig blood flowing into a tributary of the Trinity River); see also Kashmir Hill, *Potential Drone Use: Finding Rivers of Blood*, FORBES (Jan. 25, 2012, 11:50 AM), <http://www.forbes.com/sites/kashmirhill/2012/01/25/potential-drone-use-finding-rivers-of-blood> (“It’s unclear whether anyone could have visited this creek, or if it was on private property. But if the latter, it’s lucky that a drone can go in the air where men fear to tread on land.”). The hobbyist’s findings were reported to the National Response Center, which led to an investigation, and the Texas Environmental Crimes Task Force executed a search warrant on the company. See Mortimer, *supra* (identifying the hobbyist’s report and subsequent investigation by the EPA, TCEQ, and Texas Parks & Wildlife); see also Villasenor, *supra* note 12, at 506 (showing the U.S. Coast Guard was also contacted about the incident). Ultimately, the felony charges were dropped, and the Columbia Packing Company pled guilty to misdemeanor charges of unauthorized discharge in violation of the Water Code—paying a \$100,000 fine. See Jennifer Emily, *Dwaine Caraway: Blood-Dumping Case Against Columbia Packing Dropped Because of ‘Mishandled’ Investigation*, DALL. MORNING NEWS (May 6, 2014, 3:10 PM), <http://crimeblog.dallasnews.com/2014/05/dwaine-caraway-blood-dumping-case-against-columbia-packing-will-be-dropped-because-of-mishandled-investigation.html> (providing updates on the investigation and state court charges).

42. See Villasenor, *supra* note 12, at 459 (discussing privacy concerns); Matt Papaycik, *Local 6 Finds Drone Hovering over Central Florida*, CLICK ORLANDO (June 24, 2013, 11:12 PM), <http://www.clickorlando.com/news/local-6-finds-drone-hovering-over-central-florida/20611692> (reporting a news station employee found a drone that had crashed into a tree after capturing video of apartment windows, a bikini-clad sunbather, and interstate traffic); Anita Ramasastry, *Drones as the New Peeping Toms?*, JUSTIA (June 26, 2014), <http://verdict.justia.com/2014/06/26/drones-new-peeping-toms> (highlighting instances when drones were used by private citizens to spy on and record people inside their homes); Turley, *supra* note 16 (describing a situation where a family telephoned police in response to a man who insisted he was within his rights to use his drone to surveil his neighbors). Incidents and crashes are not limited to private use of cheap drones. See generally WILLIAMS, *supra* note 22 (analyzing data from military unmanned aircraft relating to pilot error).

43. See FAA, AVIATION SAFETY UNMANNED AIRCRAFT PROGRAM OFFICE, *supra* note 23, at 7, 16–17 (emphasizing the need for civil aircraft operators to train and apply for a Special Airworthiness Certificate); see also *Unmanned Aircraft Systems (UAS) Frequently Asked Questions*, *supra* note 31 (discussing the refinement of the civil training program); Alexis C. Madrigal, *If I Fly a UAV over My Neighbor’s House, Is It Trespassing?*, THE ATLANTIC (Oct. 10, 2012, 2:00 PM), <http://www.theatlantic.com/technology/archive/2012/10/if-i-fly-a-uav-over-my-neighbors-house-is-it-trespassing/263431> (“After some training runs in which I crashed the little UAV every fifteen

drone owners are new to the market, and drones are not easy for beginners to fly.⁴⁴ Crashes are common, especially at first, as users adjust to the controls.⁴⁵ Furthermore, since drones allow the user to remain stationary while navigating the device, collisions due to failures in depth perception are frequent.⁴⁶

Unlike their counterparts—old-school radio-controlled airplanes and helicopters—drones are equipped with Global Positioning System (GPS) technology that allows them to be flown out of the line-of-sight of the operator.⁴⁷ Thus, drones are commonly equipped with cameras that capture a first-person view from the drone's perspective, recording audio, video, and still images.⁴⁸ Some drones transmit a live video signal to the

seconds, I started to get the hang of where to push on my iPad to get the little AR.Drone to go the way I desired.”).

44. See Ed Cotilla, *The Truth About Drone Surveillance Cameras*, ETHOS RISK SERVICES (Sept. 24, 2014), <https://ethosrisk.com/tag/lawsuit> (mentioning a drone crash at a trade show demonstration); see also Papaycik, *supra* note 42 (interviewing the pilot of a drone that crashed after hovering over the highway). But see Clay Dillow, *Parrot AR.Drone 2.0 Review: Fly Higher, Farther, and More Intuitively*, POPULAR SCI. (July 3, 2012, 3:15 AM), <http://www.popsci.com/technology/article/2012-07/parrot-ar-drone-20-review-enhanced-drone-piloting-experience-seeks-long-lasting-battery> (“Unlike its predecessor, version 2.0 requires almost no getting used to—it’s intuitively simple to fly right out of the box. The enhanced controllability enabled by the magnetometer and the ‘Absolute Control’ feature make piloting this drone easy and extremely enjoyable.”).

45. See Cotilla, *supra* note 44 (recognizing recreational drones are cheap and unreliable); see also Dillow, *supra* note 44 (“We only managed to crash our AR.Drone 2.0 a few times, almost exclusively indoors while negotiating obstacles and almost always due to pilot error/bravado.”). But see Villasenor, *supra* note 12, at 475 (suggesting further development of “sense and avoid” technology may mitigate crashes with barriers and other aircraft); Tammy Bruce, *Drones: From Bombing Terrorists to Destroying Your Right to Privacy?*, WASH. TIMES (Aug. 11, 2014), <http://www.washingtontimes.com/news/2014/aug/11/bruce-drones-from-bombing-terrorists-to-destroying/#ixzz3A6FUtTGm> (detailing a drone crash near Grand Central Station); Joseph Serna, *As Hobby Drone Use Increases, so Do Concerns About Privacy, Security*, L.A. TIMES (June 21, 2014, 4:58 PM), <http://www.latimes.com/local/la-me-drone-hobbyist-20140622-story.html> (describing a drone that crashed in the Grand Canyon). Even in capable hands, drones still crash. See Douglas M. Marshall, *Dull, Dirty, and Dangerous: The FAA’s Regulatory Authority over Unmanned Aircraft Operations*, ISSUES IN AVIATION L. & POL’Y 10,085, 10,090 (2007) (“The first ‘Predator B’ acquired by the CBP was lost on April 24, 2006 when it crashed in a remote area due to what was determined to be ‘pilot error.’”).

46. See GAO-12-981, *supra* note 15, at 18 (noting “[t]he separation of pilot and aircraft creates a number of issues, including loss of sensory cues valuable for flight control, delays in control and communications loops, and difficulty in scanning the visual environment surrounding the unmanned aircraft”).

47. See Villasenor, *supra* note 12, at 465 (detailing the GPS capabilities of drones); see also Barbee, *supra* note 21, at 466–67 (describing other technologies, such as gyroscopes, accelerometers, and magnetometers—once found only on expensive military aircraft—now commonly found on inexpensive private drones).

48. See Villasenor, *supra* note 12, at 460 (“In comparison with manned aircraft, UAS can be very inexpensive to procure and operate.”); see also BENNETT, *supra* note 32, at 1, 3 (suggesting drones can be economically equipped with recording equipment). But see Cotilla, *supra* note 44 (arguing

operator, allowing real-time views from the drone's perspective.⁴⁹ These views encourage drone flight outside the operator's line-of-sight.⁵⁰ Today, drones are also capable of travelling longer distances than conventional model aircraft, placing them in a new category of sustainability.⁵¹ These technological advantages afford operators the ability to fly drones into places from which no radio-controlled plane has ever returned.⁵² The dangers associated with such flights are clear.⁵³

recreational drones were not intended for surveillance purposes).

49. See Villasenor, *supra* note 12, at 465–66 (“[I]n a ‘first-person-view’ (FPV) system, a UAS-mounted camera transmits a real-time ‘cockpit’ view to a pilot on the ground who flies the aircraft as if he or she were physically on-board.”); Ellen Spitaleri, *Drone for the Holidays?*, PORTLAND TRIB. (Dec. 26, 2014, 3:57 PM), <http://portlandtribune.com/ttt/89-news/245116-111824-drone-for-the-holidays> (“You can put on a pair of video goggles or watch a TV screen and see what the aircraft is seeing in real time, allowing you to know what it feels like to be a bird, soaring over the landscape.”).

50. See Villasenor, *supra* note 12, at 465–66 (stating if an operator maintains visual contact with a UAS, the “UAS can flown beyond the visual line of sight” of the operator).

51. See BENNETT, *supra* note 32, at 2 (declaring drones are cheaper and “at times more capable of sustained flight, than some manned counterparts”). Compare Villasenor, *supra* note 12, at 464 (noting a drone was able to remain aloft for two weeks), with Elisabeth Bumiller, *A Day Job Waiting for a Kill Shot a World Away*, N.Y. TIMES (July 29, 2012), <http://www.nytimes.com/2012/07/30/us/drone-pilots-waiting-for-a-kill-shot-7000-miles-away.html> (describing how a soldier in New York can remotely pilot a drone to patrol a country 7,000 miles away).

52. See BENNETT, *supra* note 32, at 2 (suggesting drones might be capable of entering areas where other aerial platforms cannot); see also Villasenor, *supra* note 12, at 467 (recognizing drones can be used in situations that might be dangerous or disruptive for a manned helicopter); Mike Flacy, *Hawk Takes Out Quadcopter Drone, Reclaims the Sky*, FOX NEWS (Oct. 10, 2014), <http://www.foxnews.com/tech/2014/10/10/hawk-takes-out-quadcopter-drone-reclaims-sky> (describing an instance where a Phantom FC40 quadcopter was attacked by a hawk and disabled while flying over a Massachusetts beach); *Kangaroo Downs Drone with Leaping Punch*, FOX NEWS (Dec. 23, 2014), <http://www.foxnews.com/tech/2014/12/23/kangaroo-downs-drone-with-leaping-punch> (chronicling a YouTube video taken in Hunter Valley, Australia, where a drone was flown near a group of kangaroos, one of which “leap[t] up and punche[d] the drone, which plunge[d] to the ground”); Press Release, Nat’l Park Serv., *Unmanned Aircraft to Be Prohibited in America’s National Parks* (June 20, 2014), <http://www.nps.gov/cure/parknews/unmanned-aircraft-prohibition.htm> (“[V]olunteers at Zion National Park witnessed an unmanned aircraft disturb a herd of bighorn sheep, reportedly separating adults from young animals.”).

53. See Villasenor, *supra* note 12, at 499 (“If paparazzi are willing to engage in high-speed freeway chases to capture images of a celebrity, it would be optimistic to the point of naiveté to expect them to always operate UAS in a manner respectful of privacy considerations and in compliance with FAA safety regulations.”); Mark Corcoran, *Chinese Manufacturer Programs Phantom Drones with No-Fly Zones to Protect Australian Airports*, ABC NEWS (Apr. 14, 2014, 6:49 AM), <http://www.abc.net.au/news/2014-04-14/chinese-made-drones-programmed-with-no-fly-zones/5388356> (quoting a drone expert who cites the increased risk to other aircraft posed by inexperienced drone users); see also Peterson, *supra* note 22, at 524 (emphasizing the inherent danger when flying even sophisticated drones). The ability to surreptitiously record audio, video, and still images engenders privacy implications previously un contemplated by the judiciary. See Schlag, *supra* note 15, at 16–17 (“[D]rones pose a huge concern to individual privacy rights because drones are inexpensive, come equipped with real-time recording, and various types of cameras; drone surveillance permits the collection of intimate and detailed information about an individual.”).

III. INTERPLAY BETWEEN EXISTING TORT LAW AND PRIVATE USE OF DRONES

The right to privacy has been an issue in the United States for over a century.⁵⁴ Privacy rights are different in private than in public.⁵⁵ For instance, a photograph of a person's front yard is not likely to give rise to tort liability for an invasion of privacy if the subject of the photograph is already a matter of public record.⁵⁶ Invasions of intimate personal spaces are scrutinized under a "reasonable expectation of privacy" analysis.⁵⁷

54. See Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy*, 4 HARV. L. REV. 193, 195 (1890) ("Instantaneous photographs and newspaper enterprise have invaded the sacred precincts of private and domestic life; and numerous mechanical devices threaten to make good the prediction that 'what is whispered in the closet shall be proclaimed from the house-tops.'").

55. Generally speaking, a tort claim does not accrue when one's photograph is taken in public without one's permission. See *Daily Times-Democrat Co. v. Graham*, 162 So. 2d 474, 478 (Ala. 1964) ("One who is part of a public scene may be lawfully photographed as an incidental part of that scene in his ordinary status."); *Gill v. Hearst Pub. Co.*, 253 P.2d 441, 444 (Cal. 1953) (holding privacy does not exist in already public spaces). This is due to the inherent nature of appearing in public, which requires some understanding that certain protections are not afforded in the public space. As stated by William Prosser:

On the public street, or in any other public place, the plaintiff has no right to be alone, and it is no invasion of his privacy to do no more than follow him about. Neither is it such an invasion to take his photograph in such a place, since this amounts to nothing more than making a record, not differing essentially from a full written description, of a public sight which any one present would be free to see.

William L. Prosser, *Privacy*, 48 CAL. L. REV. 383, 391–92 (1960); see also Ryan Calo, *Drones, Dogs, and the Future of Privacy*, WIRED (Mar. 8, 2012, 5:38 PM), <http://www.wired.com/2012/03/opinion-calodrones-dogs-privacy> ("Citizens do not generally enjoy a reasonable expectation of privacy in public, nor even in the portions of their property visible from a public vantage. Google, with Maps and especially Street View, has taken full advantage of this, for example."). But see Andrew Jay McClurg, *Bringing Privacy Law out of the Closet: A Tort Theory of Liability for Intrusions in Public Places*, 73 N.C. L. REV. 989, 1042 (1995) (arguing a photograph magnifies an invasion of privacy by creating a permanent record of the scene which can later be scrutinized at leisure and reproduced for distribution).

56. See *Floyd v. Park Cities People, Inc.*, 685 S.W.2d 96, 98 (Tex. App.—Dallas 1985, no writ), *abrogated by* *Cain v. Hearst Corp.*, 878 S.W.2d 577 (Tex. 1994) (denying recovery for invasion of privacy claim when the defendant published a photograph of the plaintiff's front yard, showing the plaintiff standing on his front porch, after newspaper proved "the information they published was already part of the public record and was a true and accurate account of a matter of public interest"). As the Restatement (Second) of Torts mentions:

The case of [*Cox Broadcasting Co. v. Cohn*, 420 U.S. 469 (1975)], holds that under the First Amendment there can be no recovery for disclosure of and publicity to facts that are a matter of public record. The case leaves open the question of whether liability can constitutionally be imposed for other private facts that would be highly offensive to a reasonable person and that are not of legitimate concern.

RESTATEMENT (SECOND) OF TORTS § 652D, Special Note on Relation of § 652D to the First Amendment to the Constitution (1977).

57. See DOLAN & THOMPSON, *supra* note 11, at 20 (discussing the protection of privacy expectations in relation to the Preserving American Privacy Act of 2013); Cotilla, *supra* note 44 ("[A]n

The reasonableness standard is objective—abnormally sensitive persons are not afforded greater protection.⁵⁸

Some scholars argue existing laws are broad enough to encompass the private use of drones.⁵⁹ The argument suggests common law torts covering invasion of privacy are equally applicable to all invasions, whether by drones or news reporters.⁶⁰ Critics of this approach, on the other hand, advocate for courts and legislatures to implement new standards narrowly tailored to the operation of drone aircraft.⁶¹

The Supreme Court suggests claims regarding airspace above private property will be difficult to maintain.⁶² John Villasenor, a Harvard scholar widely recognized in the field of privacy law, analyzed the Supreme Court's reasoning:

[T]he question of the altitude at which a landowner's control over the air above the ground in his or her backyard ends, and the public's access begins, was at issue in *United States v. Causby*. Under any reasonable reading of *Causby* (and other relevant case law), the space in a backyard at eye level is certainly within the "immediate reaches of the enveloping atmosphere" that

individual has a reasonable expectation of privacy if they are on their own property surrounded by an 8-foot wooden privacy fence.”).

58. See Prosser, *supra* note 55, at 397 (“The law of privacy is not intended for the protection of any shrinking soul who is abnormally sensitive about such publicity.”); see also *Meetze v. Associated Press*, 95 S.E.2d 606, 610 (S.C. 1956) (barring recovery against a newspaper for reporting a twelve-year-old gave birth to healthy child).

59. See Kosseff, *supra* note 13 (“If ‘instantaneous photographs’ and ‘newspaper enterprises’ worried Brandeis and Warren, what would they make of lightweight drones that could hover above parks, public events and even private homes, gathering high-quality photos, video and audio that could be live-streamed on the Internet?”); see also BENNETT, *supra* note 32, at 7 (acknowledging existing laws have established useful precedents for surveillance technologies).

60. See Kosseff, *supra* note 13 (arguing for the application of existing tort law principles to the use of drones by private individuals).

61. See DOLAN & THOMPSON, *supra* note 11, at 29 (“As drones are further introduced into the national airspace, courts will have to work this new form of technology into their jurisprudence, and legislatures might amend these various statutes to expressly include crimes committed with a drone.”); see also VINCENT R. JOHNSON, *ADVANCED TORT LAW: A PROBLEM APPROACH* 312 (1st ed. 2010) (“[I]t must be remembered that [The Restatement (Second) of Torts was] written in a different world—a world before video recorders, cable channels, personal computers, fax machines, digital cameras, the Internet, ubiquitous databases, and social networking websites. The *Restatement* rules may not be adequate to the challenge of providing legal protection for privacy in the 21st century.”). Regardless of the historical disconnect between the Restatement and modern technology, it is widely applied to the technologies of today. See JOHNSON, *ADVANCED TORT LAW*, *supra* (recognizing issues regarding e-mail and other technologies are often resolved through the Restatement's guidance).

62. See *United States v. Causby*, 328 U.S. 256, 265 (1946) (“While the owner does not in any physical manner occupy that stratum of airspace or make use of it in the conventional sense, he does use it in somewhat the same sense that space left between buildings for the purpose of light and air is used.”).

are under the “exclusive control” of the landowner.⁶³

A. *Invasion of Privacy*

Tort claims related to the invasion of privacy are generally examined under the framework provided by the Restatement (Second) of Torts,⁶⁴ further explored by Dean William Prosser in 1960.⁶⁵ Prosser describes intrusion as the protection of a primarily mental interest, writing “[invasion of privacy] has been useful chiefly to fill in the gaps left by trespass, nuisance, the intentional infliction of mental distress, and whatever remedies there may be for the invasion of constitutional rights.”⁶⁶ Today, invasions of privacy are categorized into four tort actions.⁶⁷

Among the torts for invasion of privacy, misuse of a drone by a private operator is most likely to give rise to a claim of intrusion upon seclusion.⁶⁸ The Restatement describes a cause of action for intrusion upon seclusion: “One who intentionally intrudes, physically or otherwise, upon the solitude or seclusion of another or his private affairs or concerns, is subject to liability to the other for invasion of his privacy, if the intrusion would be highly offensive to a reasonable person.”⁶⁹ Intrusion is an intentional tort,

63. Villasenor, *supra* note 12, at 500 n.236.

64. See JOHNSON, ADVANCED TORT LAW, *supra* note 61 (“Courts addressing invasion of privacy disputes almost inevitably turn to the language of the *Restatement*.”); see also McClurg, *supra* note 55, at 1036 (“The near unanimous acceptance by courts of the rule that no actionable intrusion can occur in a public place derives from Dean Prosser’s early observations on the issue, as incorporated into the comments to the Restatement (Second) of Torts.”).

65. See Prosser, *supra* note 55, at 389–92 (discussing how an invasion of a right to privacy can give rise to a tort cause of action); see also DOLAN & THOMPSON, *supra* note 11, at 14 (chronicling a brief history of American privacy law, including the impact of Dean Prosser’s work).

66. Prosser, *supra* note 55, at 392.

67. See JOHNSON, ADVANCED TORT LAW, *supra* note 61, at 311 (“It is generally agreed that there are four kinds of tort actions for invasion of privacy: unauthorized use of name or likeness; intrusion upon private affairs; publicity placing one in a highly offensive ‘false light’; and public disclosure of private matters.”); see also RESTATEMENT (SECOND) OF TORTS § 652B (1977) (discussing intrusion upon seclusion); *id.* § 652C (addressing misappropriation of name or likeness); *id.* § 652D (examining publicity of private matters); *id.* § 652E (relating to publicity placing a person in a false light). Although these causes of action have been widely accepted across the states, they do not exist in all jurisdictions. See, e.g., Tigran Palyan, Comment, *Common Law Privacy in a Not So Common World: Prospects for the Tort of Intrusion upon Seclusion in Virtual Worlds*, 38 SW. L. REV. 167, 180 n.106 (2008) (stating Wyoming and North Dakota do not recognize the tort of intrusion upon seclusion).

68. See DOLAN & THOMPSON, *supra* note 11, at 14 (emphasizing privacy implications related to drone use concern surveillance and the collection of information); see also BENNETT, *supra* note 32, at 4 (“The prohibitions against invading privacy, intruding upon seclusion, publishing private facts, and stalking all might be implicated when a drone, heavily [equipped with sensors], hears or sees somebody who doesn’t wish to be heard or seen.”).

69. RESTATEMENT (SECOND) OF TORTS § 652B (1977); see Villasenor, *supra* note 12, at 500–01

but publication of facts about the plaintiff are not required—the intrusion itself gives rise to the claim.⁷⁰

Drone usage presents a unique question to the tort of intrusion upon seclusion, in part due to the nature of the relationship between operator and aircraft.⁷¹ While some operators maintain eye contact with their drones at all times, possibly through the use of FPV cameras, others, such as the hobbyist who discovered the river of pig blood,⁷² capture images inadvertently. Thus, a question for juries, and eventually lawmakers, will be whether the intentional act of flying a drone is sufficient to give rise to a claim of intrusion upon seclusion.⁷³ Sometimes this issue will be simple for a jury to resolve⁷⁴—such as when the defendant stands in the street

(“[C]ourts in most jurisdictions recognize the two forms of common law invasion of privacy most likely to arise in connection with UAS: intrusion upon seclusion and public disclosure of private facts.”).

70. See *Gleason v. Smolinski*, No. NNH-CV06-5005107-S, 2009 WL 2506607, at *3 (Conn. Super. Ct. July 20, 2009) (“Publication of private information alone is not legally sufficient to sustain this particular cause of action, which is concerned with the methods used when obtaining private information, rather than its subsequent dissemination.”). A drone that captures a fleeting glimpse of private life is not likely to give rise to liability. See *Kyllo v. United States*, 533 U.S. 27, 32 (2001) (“The Fourth Amendment protection of the home has never been extended to require law enforcement officers to shield their eyes when passing by a home on public thoroughfares.” (quoting *California v. Ciraolo*, 476 U.S. 207, 213 (1986))); see also *Villasenor*, *supra* note 12, at 478 (recognizing “police observations of curtilage are not necessarily unconstitutional”). See generally JOHNSON, *ADVANCED TORT LAW*, *supra* note 61, at 339–40 (discussing the elements of intrusion by seclusion).

71. See *Cho*, *supra* note 14, at 203 (contending pilotless aerial vehicles are unique and will require novel legal considerations); see also *Villasenor*, *supra* note 12, at 504–05 (suggesting news reporting agencies “will almost certainly need to reexamine existing policies in light of the unique imaging and other information gathering capabilities . . . of UAS.”); Benjamin Kapnik, Comment, *Unmanned But Accelerating: Navigating the Regulatory and Privacy Challenges of Introducing Unmanned Aircraft into the National Airspace System*, 77 J. AIR L. & COM. 439, 463 (2012) (“[S]tate legislatures will have to grapple with the possibility of writing new statutes that more directly address the technology and the potential for non-licentious invasions of privacy.”).

72. See *Mortimer*, *supra* note 41 (describing one UAS hobbyist who inadvertently discovered blood flowing from a butcher business in Texas).

73. See *Gleason*, 2009 WL 2506607, at *3 (holding the privacy intrusion “may also be by the use of the defendant’s senses, with or without mechanical aids, to oversee or overhear the plaintiff’s private affairs, as by looking into his upstairs windows with binoculars or tap[p]ing his telephone wires”); BENNETT, *supra* note 32, at 7 (“[C]onsider that the courts’ dockets have been essentially empty—though not because the privacy-minded aren’t on the lookout. . . . [P]laintiffs have yet to bring any case turning on the relationship between individual privacy rights and civilian drone surveillance.”); see also RESTATEMENT (SECOND) OF TORTS § 652B (1977) (requiring intentional intrusion on the part of the defendant).

74. Compare *Hougum v. Valley Mem’l Homes*, 574 N.W.2d 812, 818 (N.D. 1998) (denying a plaintiff’s recovery for defendant’s inadvertent viewing of plaintiff’s sexual conduct in a bathroom stall when “reasonable persons could only conclude the manner and purpose of the intrusion by [defendant] was not an intentional intrusion upon seclusion by a method which was objectionable to a reasonable person”), with *Koepfel v. Speirs*, 808 N.W.2d 177, 184 (Iowa 2011) (“[I]t is important to

fifty feet from the plaintiff's home and pilots the drone within inches of a bedroom window—while other cases will be less clear-cut.⁷⁵ To succeed, a plaintiff will be required to prove the drone operator's intrusive actions would have highly offended a reasonable person.⁷⁶

The tort of public exposure given to private life is available to plaintiffs when truthful facts are made public.⁷⁷ Similarly, a prevailing claim will show the matter publicized is one that would be “highly offensive to a reasonable person.”⁷⁸ Claims for public exposure must meet a higher burden regarding publication than claims for defamation of character.⁷⁹

As applied to drones, tort liability for publication of private information will largely focus on photographs and videos taken by cameras onboard the drone that are made public, through means like the Internet or by magazine publication.⁸⁰ Recordings made in public are unlikely to result

keep in mind that the tort protects against acts that interfere with a person's mental well-being by intentionally exposing the person in an area cloaked with privacy.”), *and* *Mauri v. Smith*, 929 P.2d 307, 311 (Or. 1996) (“By definition, then, an actor commits an intentional intrusion if the actor either desires to cause an unauthorized intrusion or believes that an unauthorized intrusion is substantially certain to result from committing the invasive act in question.”).

75. *See Hougum*, 574 N.W.2d at 822 (denying recovery under action for intrusion upon seclusion when defendant inadvertently observed plaintiff's masturbation in a department store bathroom); *see also Villasenor*, *supra* note 12, at 501 (“A person who is unwillingly photographed in his or her own home by a UAS hovering just outside an otherwise inaccessible window would have strong grounds for a valid cause of action.”); *No, You Can't Use a Drone to Spy on Your Sexy Neighbor*, WIRED (June 22, 2012, 6:30 AM), http://www.wired.com/2012/06/ff_dronerules (“Peeping Tom laws say you can't view a fully or partially nude person without their knowledge, so long as they have a reasonable expectation of privacy. Chances are, if you need a drone to see her, your neighbor is justified in thinking she's alone.”).

76. *See Shorter v. Retail Credit Co.*, 251 F. Supp. 329, 332 (D.S.C. 1966) (holding when the plaintiff sues under the tort of invasion of privacy based solely on the defendant's intrusion, providing no evidence proving the defendant publicized the information, “the [defendant's] conduct must outrage one of ordinary sensibilities and the hypersensitive person may not recover for actions which are merely rude or inconsiderate”); *see also DOLAN & THOMPSON*, *supra* note 11, at 14 (arguing subjective dislike of cameras would not give rise to a successful suit under intrusion if the defendant's conduct did not rise to the objective person standard).

77. *See* RESTATEMENT (SECOND) OF TORTS § 652D (1977) (outlining the elements of the tort for publicity of private information).

78. *Id.*

79. “Publication” in terms of defamation actions merely necessitates telling a third person, whereas “publicity” in terms of public disclosure of private facts requires “communicating it to the public at large, or to so many persons that the matter must be regarded as substantially certain to become one of public knowledge.” *See id.* at cmt. a (contrasting the terms “publication” and “publicity” as they are used to find liability in actions for defamation and invasion of privacy respectively).

80. *See M.G. v. Time Warner, Inc.*, 107 Cal. Rptr. 2d 504, 510–11 (Ct. App. 2001) (upholding a claim of invasion of privacy and infliction of emotional distress when a magazine published photo of a little league team after the conviction of its coach for child molestation); *see also Villasenor*, *supra* note 12, at 504 (“Images acquired by UAS could easily convey facts not previously known to the

in successful claims.⁸¹ Thus, the paramount question becomes whether the plaintiff was in a place where one should reasonably expect to have privacy.⁸²

Some states have proposed legislation specifically related to private use of drones with widely varying methodologies.⁸³ In a minority of jurisdictions, a reactionary approach has resulted in a strict rule: drone flights by private citizens are simply outlawed.⁸⁴ Other states have taken a more balanced approach. For instance, the Texas Privacy Act, passed in 2013, provides guidance regarding lawful and unlawful use of drone aircraft within the state.⁸⁵

public, and, upon publication, could be an actionable invasion of privacy in many states.”).

81. *See* *Neff v. Time, Inc.*, 406 F. Supp. 858, 861 (W.D. Pa. 1976) (“A factually accurate public disclosure is not tortious when connected with a newsworthy event even though offensive to ordinary sensibilities.”); BENNETT, *supra* note 32, at 5 (“Simply filming a private conversation from a drone probably won’t tee up a publication of private facts claim, absent some effort on the snooper’s part to disseminate the conversation’s contents; a quick fly-by, even when paired with video filming, probably won’t rise to the level of an intrusion upon seclusion, either. A more sustained look might be a different story.”); *see also* JOHNSON, *ADVANCED TORT LAW*, *supra* note 61, at 319 (asserting recordings created by video cameras installed in public spaces will likely not amount to actionable invasions of privacy).

82. *See* VINCENT R. JOHNSON, *STUDIES IN AMERICAN TORT LAW* 346 (5th ed. 2013) (“Many decisions have emphasized that for an action to lie there must be intrusion into a place where the plaintiff has a reasonable expectation of solitude, seclusion, or privacy.”). As one commentator notes: “Privacy in public places does exist, or at least people expect it to exist, albeit with obvious limitations.” McClurg, *supra* note 55, at 1026.

83. *See* Barbee, *supra* note 21, at 477 (“Altogether, forty-three states have proposed legislation to place restrictions on the use of domestic drones for surveillance, with nine states having enacted legislation in 2013.” (citing Allie Bohm, *Status of Domestic Drone Legislation in the States*, ACLU (Feb. 15, 2013, 12:21 PM), <http://www.aclu.org/blog/technology-and-liberty/status-domestic-drone-legislation-states>)); *see also* Kellogg, *supra* note 6, at 6 (“The proposed laws are as varied as the states.”). By mid-2014, legislation was enacted in thirteen states and active in twenty-two. *See* Bohm, *supra* (updating nation-wide drone legislative activity).

84. *See* Kaminski, *supra* note 24, at 63 (describing Missouri’s proposed ban of any aircraft used to conduct surveillance); *see also* H.B. 2012, 2013 Gen. Assemb., Reg. Sess. (Va. 2013) (detailing Virginia’s attempt to place a moratorium on drone aircraft flight until 2015); DOLAN & THOMPSON, *supra* note 11, at 28 (describing harsh actions of some legislatures); BENNETT, *supra* note 32, at 3 (“Virginia probably takes the gold medal in this regard, having banned, with some exceptions, all public drone operation by state personnel until July 2015.”).

85. *See* TEX. GOV’T CODE ANN. § 423 (West 2013) (covering the use of unmanned aircraft in Texas); *see also* Robert Stanton, *Bill Wants to Make Sure Drone Owners Aren’t Neighborhood Spies*, HOUS. CHRON. (Feb. 6, 2013, 1:40 PM), <http://www.chron.com/news/houston-%20texas/houston/article/Bill-wants-to-make-sure-drone-owners-aren-t-4256365.php> (identifying State Representative Lance Gooden as the sponsor of the Texas bill, whose constituents requested the legislation after one cattle farmer flew his drone over another cattle farmer’s property); *Texas Restricts Civilian Drone Usage, Leaves Exclusive Rights to Authorities*, RT (Sept. 15, 2013, 12:33 AM), <http://rt.com/usa/texas-drones-new-rules-876> (“Private companies, such as news crews that have permission from authorities[,] can use unmanned vehicles to monitor any major news activity.”). *But see* Kellogg, *supra* note 6, at 6 (criticizing the Texas statute as taking a “crazy-quilt approach to drone regulation”).

In Texas, lawful private use of drone aircraft includes, but is not limited to, flights for scholarly research, missing persons, and oil pipeline protection.⁸⁶ The statute expressly grants real estate brokers permission to use drones “in connection with the marketing, sale, or financing of real property, provided that no individual is identifiable in the image.”⁸⁷ Additionally, the Texas statute clearly states drone images may be captured lawfully on private property with the permission of the property’s owner.⁸⁸ However, in public places, the statute limits the capture of drone images to a maximum altitude of eight feet and forbids the use of recording amplification technologies that exceed human acuity.⁸⁹

The Texas Privacy Act also identifies illegal uses of drone aircraft.⁹⁰ An offense is committed when a person uses a drone “with the intent to conduct surveillance on the individual or property captured in the image.”⁹¹ Thus, liability under the Texas statute depends on the defendant’s intent and use of the image.⁹² Accordingly, a statutory defense is available when a defendant destroys the image upon discovering it was captured unlawfully.⁹³

86. See GOV'T § 423.002(a) (providing a list of lawful drone activities). *But cf.* Villasenor, *supra* note 12, at 475 (recognizing the use of drones for tasks analogous to monitoring oil pipelines “require[s] non-visual line of sight operation”).

87. GOV'T § 423.002(a)(13). However, the FAA has not been as forgiving of drone use in this manner. See Jennifer Gould Keil & Kate Sheehy, *FAA Takes on City Realtors Using Drones*, N.Y. POST (July 1, 2014, 3:55 AM), <http://nypost.com/2014/07/01/faa-takes-on-city-realtors-using-drones> (reporting the FAA subpoenaed realtors who were using drones to photograph and market properties in New York City, threatening fines for non-compliance).

88. GOV'T § 423.002(a)(6) (“It is lawful to capture an image using an unmanned aircraft in this state . . . with the consent of the individual who owns or lawfully occupies the real property captured in the image.”).

89. See *id.* § 423.002(a)(15) (allowing image capturing from unmanned aircraft “from a height no more than eight feet above ground level in a public place, if the image was captured without using any electronic, mechanical, or other means to amplify the image beyond normal human perception”). *But see id.* § 423.002(a)(16) (“It is lawful to capture an image using an unmanned aircraft in this state . . . of public real property or a person on that property . . .”).

90. See *id.* § 423.003 (classifying misdemeanor offenses related to the operation of drones to capture images of persons or private property in Texas); see also DOLAN & THOMPSON, *supra* note 11, at 29 (“The Texas proposal would create a new state misdemeanor when a person uses a drone to capture an image without the consent of the landowner who owns the property captured in the image.”).

91. GOV'T § 423.003(a). There are two elements to an offense under this statute. See *id.* § 423.004(a) (“A person commits an offense if the person: (1) captures an image in violation of Section 423.003; and (2) possesses, discloses, displays, distributes, or otherwise uses that image.”).

92. See *id.* § 423.004(a) (listing the elements of the offense); cf. JOHNSON, *ADVANCED TORT LAW*, *supra* note 61, at 340 (emphasizing the distinction between intrusion upon seclusion and disclosure of private facts by stating “[a]n intrusion is actionable even if facts relating thereto are not revealed to anyone else by the intruder”).

93. See GOV'T § 423.003(c) (providing the defenses to prosecution under the Texas Privacy

Going a step further, the Texas statute confers civil liability for drone aircraft misuse.⁹⁴ Tort liability for violations under sections 423.003 or 423.004 begins at \$5,000 for the capture of illegal images taken in one occurrence and increases to \$10,000 for the disclosure or use of such images.⁹⁵ Moreover, the statute allows a plaintiff to recover actual damages for malicious distribution of images obtained in violation of the Texas Privacy Act.⁹⁶ Successful plaintiffs can obtain attorneys' fees and costs in all three situations.⁹⁷ Lastly, the Texas Privacy Act enumerates a two-year statute of limitations for claims brought under the Act, commencing from either the date of the captured image or the date of unlawful disclosure, distribution, or use.⁹⁸

In addition to intrusion upon seclusion, tort liability exists for public disclosure of private facts.⁹⁹ This tort requires two actions: the defendant must acquire private facts and then decide whether to make those facts public.¹⁰⁰ To use the Texas example again, an individual escapes liability by destroying information captured by a drone instead of publishing or distributing the data.¹⁰¹

B. *Trespass*

A plaintiff can generally claim the defendant committed a trespass for "any physical intrusion upon" the plaintiff's property.¹⁰² Liability for

Act).

94. *See id.* § 423.006 (conferring delineated civil liability on private individuals who violate the Texas Privacy Act).

95. *See id.* § 423.006(a) (listing the monetary remedies available to affected plaintiffs).

96. *See id.* § 423.006(a)(3) (allowing recovery of "actual damages if the person who captured the image in violation of Section 423.003 discloses, displays, or distributes the image with malice").

97. *See id.* § 423.006(d) ("In addition to any civil penalties authorized under this section, the court shall award court costs and reasonable attorney's fees to the prevailing party.").

98. *See id.* § 423.006(f) ("An action brought under this section must be commenced within two years from the date the image was: (1) captured in violation of Section 423.003; or (2) initially disclosed, displayed, distributed, or otherwise used in violation of Section 423.004.").

99. *See* RESTATEMENT (SECOND) OF TORTS § 652D (1977) ("One who gives publicity to a matter concerning the private life of another is subject to liability to the other for invasion of his privacy, if 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.").

100. *See id.* § 652D cmt. a (discussing elements of publication of private information by tortfeasors).

101. *See* GOV'T § 423.003(c) ("It is a defense to prosecution under this section that the person destroyed the image: (1) as soon as the person had knowledge that the image was captured in violation of this section; and (2) without disclosing, displaying, or distributing the image to a third party.").

102. DOLAN & THOMPSON, *supra* note 11, at 11; *see* Villasenor, *supra* note 12, at 499 (discussing an Arizona trespass statute that defines "entry" as "the intrusion of any part of any instrument or any

intentional trespass does not require the actor to personally enter the land—causing an object to enter the property will be sufficient.¹⁰³ The Restatement identifies a potential claim for trespass of the airspace above one's property.¹⁰⁴ Claims of trespass by drone will invoke the formal meaning of trespass to land: “trespass *quare clausum fregit*.”¹⁰⁵ As clarified in a scope note to the Restatement:

At common law, any act which directly brought foreign matter, whether a human being, an animate or inanimate chattel, or a structure, upon land in the possession of another was redressible in an action of trespass *quare clausum fregit*. The direct causal relation between the conduct of the actor and the intrusion of the foreign matter upon the possessor's land was sufficient to create a trespass.¹⁰⁶

To succeed under a claim of trespass by drone, the injured party must show interference with actual use of, or substantial damage to, the person's property.¹⁰⁷ Tort claims for trespass have succeeded at heights of twenty

part of a person's body inside the external boundaries of a structure or unit of real property”).

103. See RESTATEMENT (SECOND) OF TORTS § 158 (1977) (“One is subject to liability to another for trespass, irrespective of whether he thereby causes harm to any legally protected interest of the other, if he intentionally (a) enters land in the possession of the other, or causes a thing or a third person to do so”); see also JOHNSON, STUDIES IN AMERICAN TORT LAW, *supra* note 82, at 875 (“An intentional trespass is actionable even if the plaintiff suffers no actual injury.”).

104. See *id.* § 159 (“Flight by aircraft in the air space above the land of another is a trespass if, but only if, (a) it enters into the immediate reaches of the air space next to the land, and (b) it interferes substantially with the other's use and enjoyment of his land.”); *id.* § 158 cmt. i (recognizing liability under trespass for actions including flying a kite, balloon, or projectile); *id.* § 159 cmt. f (“[A]n unprivileged intrusion into the space above the surface of the earth, at whatever height above the surface, is a trespass.”). The Restatement foresaw potential nuances when applying the general rule. Compare *id.* § 159 cmt. g (“There must, in the public interest, and to avoid impossible confusion and hindrances, be limits to the upward ownership of air space.”), with *id.* § 159 cmt. l (“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.”), and *id.* § 159 cmt. m (“Even though the flight is not within the ‘immediate reaches’ of the air space, it may still unreasonably interfere with the use and enjoyment of the land. In such a case the liability will rest upon the basis of nuisance rather than trespass.”).

105. See JOHNSON, STUDIES IN AMERICAN TORT LAW, *supra* note 82, at 874 (“‘*Quare clausum fregit*’ (often shortened to ‘q.c.f.’) means ‘because he broke the close.’ A ‘close’ is an imaginary barrier around the outside edge or someone's real property.”).

106. RESTATEMENT (SECOND) OF TORTS ch. 7, topic 2, scope note (1965).

107. See DOLAN & THOMPSON, *supra* note 11, at 11 (“[T]o constitute an actionable trespass, an intrusion has to be such as to subtract from the owner's use of the property.” (quoting *Geller v. Brownstone Condo. Ass'n*, 402 N.E.2d 807, 809 (Ill. 1980))); see also *United States v. Causby*, 328 U.S. 256, 266 (1946) (“Flights over private land are not a taking, unless they are so low and so frequent as to be a direct and immediate interference with the enjoyment and use of the land”). *But cf.* *Gen. Mills Rests., Inc. v. Tex. Wings, Inc.*, 12 S.W.3d 827, 835–36 (Tex. App.—Dallas 2000, no pet.) (supporting liability for a business that allowed its employees to park in spaces owned by a

to thirty feet.¹⁰⁸ It is reasonable to infer that flights at a very low level, such as a height of eight feet, will potentially incur liability for trespass, provided the additional elements of the tort are met.¹⁰⁹ However, a claim of trespass to a person's airspace depends on proof of actual interference.¹¹⁰ If a drone is used to conduct surveillance or act as a listening or recording device, stalking statutes may be triggered upon a finding of trespass.¹¹¹

As with other tort claims, the rights and liabilities of the parties involved vary by location.¹¹² In some states, existing laws could be clearly and easily applied to trespass by drone aircraft, but the situation is more ambiguous in other jurisdictions.¹¹³ For example, a trespassing drone conducting surveillance or acting as a listening or recording device may invoke Alabama's stalking statutes.¹¹⁴ John Villasenor argues "it almost

neighboring restaurant despite requests to cease and desist).

108. See *Butler v. Frontier Tel. Co.*, 79 N.E. 716, 718 (N.Y. 1906) (holding a telephone company liable for stretching wires across a plaintiff's property even though the wires never contacted the surface of plaintiff's land); see also *Causby*, 328 U.S. at 256 (concluding a Fifth Amendment taking occurred when the government continually flew airplanes eighty-three feet over plaintiff's chicken coop, causing the chickens to die); *Guille v. Swan*, 19 Johns. 381, 382 (N.Y. Sup. Ct. 1822) (imposing liability on a hot air balloonist whose descent and cries for help induced onlookers to rush to his aid, trampling a farmer's crops).

109. See JOHNSON, *STUDIES IN AMERICAN TORT LAW*, *supra* note 82, at 876 (summarizing trespass to airspace and nuisance claims by stating "very low flights over someone's land may be a trespass; higher flights which interfere seriously with land use because of noise or repetitiveness may be nuisances; ordinary flying is neither").

110. See Ruling on Submitted Matters, Tentative Decision, and Proposed Statement of Decision, *Streisand v. Adelman*, No. SC077257, at 44–45 (Super. Ct. L.A. Cnty. 2003) (holding no recovery was available when a plaintiff was unable to prove actual damages); see also *Delta Air Corp. v. Kersey*, 20 S.E.2d 245, 249 (Ga. 1942) (explaining courts should consider the altitude of aircraft flights when determining whether an aircraft has trespassed over a person's private property); *Madrigal*, *supra* note 43 (discussing the distinction between the technical right to prevent another from piloting a drone over privileged space and the legal methods afforded to one wishing to do so). See generally *Cho*, *supra* note 14, at 224–27 (listing cases involving use of aircraft for surveillance and other purposes).

111. See *Kapnik*, *supra* note 71, at 463 (discussing the stalking statutes); see also *Turley*, *supra* note 16 ("If close enough to a window, it is even possible to argue trespass under a curtilage theory, but the privacy claims are stronger.").

112. See RESTATEMENT (SECOND) OF CONFLICT OF LAWS § 152 (1971) ("In an action for an invasion of a right of privacy, the local law of the state where the invasion occurred determines the rights and liabilities of the parties . . .").

113. See *Villasenor*, *supra* note 12, at 500 (examining trespass statutes in California, Arizona, and Oregon); see also *Kapnik*, *supra* note 71, at 463 ("[S]tate legislatures will have to grapple with the possibility of writing new statutes that more directly address the technology and the potential for non-licentious invasions of privacy."); *Turley*, *supra* note 16 (referring to various laws applicable to drone aircraft such as intrusion upon seclusion, curtilage theory, privacy claims, and some criminal laws).

114. See *Kapnik*, *supra* note 71, at 463 (describing the Alabama stalking statute).

certainly will be necessary to add specific language to criminal trespassing statutes to addressing UAS.”¹¹⁵

C. *Private Nuisance and Abatement*

Similar to claims of trespass, private nuisance actions protect a person's “private use and enjoyment of land.”¹¹⁶ According to the Restatement, an individual's conduct is subject to a claim of private nuisance when the individual invades another's interest in privately using or enjoying land.¹¹⁷ The invasion also must be intentional, unreasonable, or “unintentional and otherwise actionable under the rules controlling liability for negligent or reckless conduct, or for abnormally dangerous conditions or activities.”¹¹⁸ Intentionality turns on whether the person acted with the purpose of causing the interference, or, knowing, or being substantially certain, that an interference will likely result.¹¹⁹

Nuisance law “comprehends not only the wrongful invasion of the use and enjoyment of property, but also the wrongful invasion of personal legal rights and privileges generally.”¹²⁰ Most actions for intentional invasions and private nuisance involve recurring conduct.¹²¹ Thus, a homeowner who flies a drone once across a neighbor's fence line would not likely be liable under a nuisance claim, but documented and repeated flights may give rise to liability.¹²² The U.S. Supreme Court has stated “[a] nuisance may be merely a right thing in the wrong place, like a pig in the parlor instead of the barnyard.”¹²³

Whether a drone flown above a private home constitutes a nuisance will depend in part on the jurisdictional laws governing lawful flight.¹²⁴ For

115. Villasenor, *supra* note 12, at 500.

116. RESTATEMENT (SECOND) OF TORTS § 822 (1979); *see* Kosseff, *supra* note 13 (discussing claims arising under the tort of private nuisance).

117. *See* RESTATEMENT (SECOND) OF TORTS § 822 (1979) (defining private nuisance).

118. *Id.*

119. *See id.* § 825 (stating the elements of what constitutes an intentional invasion).

120. Taylor v. City of Cincinnati, 55 N.E.2d 724, 727 (Ohio 1944).

121. *See* RESTATEMENT (SECOND) OF TORTS § 825 cmt. d (1979) (suggesting “[i]n these cases the first invasion resulting from the actor's conduct may be either intentional or unintentional; but when the conduct is continued after the actor knows that the invasion is resulting from it, further invasions are intentional”).

122. *Compare* Smith v. Staso Milling Co., 18 F.2d 736, 738 (2d Cir. 1927) (conferring liability upon finding that the defendant knew a nuisance would result from intentional acts), *with* Hennessey v. Pyne, 694 A.2d 691, 695 (R.I. 1997) (declining to hold golfer liable under theory of nuisance for unintentionally striking the plaintiff with a single golf ball).

123. Vill. of Euclid, Ohio v. Ambler Realty Co., 272 U.S. 365, 388 (1926).

124. *See, e.g.*, Joe Mozingo, *A Hot Air Balloon Fight in the Coachella Valley*, L.A. TIMES, Aug. 17, 2011, <http://articles.latimes.com/2011/aug/17/local/la-me-balloons-20110817> (reporting a group

example, in Wisconsin, it is legal to fly an aircraft over lands and waters of another individual “unless at such a low altitude as to interfere with the then existing use to which the land or water . . . is put by the owner, or unless so conducted as to be imminently dangerous or damaging to persons or property lawfully on the land or water beneath.”¹²⁵ In this example, the height at which flights are prohibited is not fixed and will depend on the facts at hand.¹²⁶

Under the law of nuisance, remedies to abate a nuisance are at times available to an injured party.¹²⁷ Situations in which a person can act are limited, however, and actions taken to abate a nuisance must be reasonable.¹²⁸ A mistake—whether reasonable or unreasonable—about the facts giving rise to a nuisance will not protect an individual who erroneously acts in abatement.¹²⁹ Additionally, the individual must not

of homeowners who sued hot air balloon owners under theories of nuisance, invasion of privacy, and harassment). The complainants also reported the flights to the FAA, who conducted an investigation and found no illegal conduct. *Id.*

125. WIS. STAT. ANN. § 114.04 (West 2013). Landing an aircraft on lands or waters of another, however, is prohibited, unless the act was to avoid an imminent crash. *See id.* (outlining rights and liabilities for flights over lands of another in Wisconsin).

126. *See* *Swetland v. Curtiss Airports Corp.*, 55 F.2d 201, 203 (6th Cir. 1932) (“We cannot fix a definite and unvarying height below which the surface owner may reasonably expect to occupy the air space for himself.”); *see also* *Maitland v. Twin City Aviation Corp.*, 37 N.W.2d 74, 76 (Wis. 1949) (“The height below which the surface owner may reasonably expect to occupy the airspace for himself is to be determined upon the particular facts of each case.”). Prior to the Sixth Circuit’s decision, the district court in *Swetland* stated:

[T]hrowing or firing a missile, or sending a balloon or driving an airplane through the air, over the land of another, sufficiently low to invade that space which the owner of the soil may effectively possess, amounts to a legal breaking of his close. But it is reasonable to believe that passage through the air space superjacent to land, at a height beyond that at which the owner of the soil can exercise effective possession, will not be treated as a trespass, though dropping objects onto the land, or falling onto the land would constitute such trespass.

Swetland v. Curtiss Airports Corp., 41 F.2d 929, 937–38 (quoting FRANCIS M. BURDICK, *THE LAW OF TORTS: A CONCISE TREATISE ON THE CIVIL LIABILITY AT COMMON LAW AND UNDER MODERN STATUTES FOR ACTIONABLE WRONGS TO PERSON AND PROPERTY* 406 (Banks & Co., 4th ed. 1926)).

127. *See* JOHNSON, *STUDIES IN AMERICAN TORT LAW*, *supra* note 82, at 910 (describing the remedies available to the affected individual).

128. *See id.* (outlining the qualifications and limitations regarding the right to abate a nuisance). *But see* Jeff John Roberts, *Can You Shoot Down a Drone on Your Land? New Incident Raises Self-Defense Questions*, GIGAOM (Oct. 1, 2014, 9:28 AM), <https://gigaom.com/2014/10/01/can-you-shoot-down-a-drone-on-your-land-new-incident-raises-self-defense-questions> (quoting noted drone scholar Ryan Calo who emphasized that tort law generally frowns upon the use of self-help).

129. *See* JOHNSON, *STUDIES IN AMERICAN TORT LAW*, *supra* note 82, at 910 (stating that an actor who “honestly and reasonably believed that the condition constituted a nuisance” and acts to abate a nuisance will be liable if “an actual nuisance is not proven”).

take abatement actions that are unreasonably destructive or intrusive.¹³⁰ The issue of reasonable abatement will likely generate considerable disagreement between drone operators and those wishing to protect themselves from drone surveillance.¹³¹ For instance, a commonly considered abatement remedy is to shoot a drone down from the sky.¹³² Acceptance of this action is fractured across the country: rural areas where firearm use is common (and lawful) are frequently in favor of such action, while laws in urban areas preclude shooting at drones with a gun.¹³³ Furthermore, self-help remedies are only privileged when the nuisance is imminent; a homeowner who follows a drone from his home to a public park and then attempts to interfere with the drone's owner will likely incur liability for conversion.¹³⁴ Ryan Calo, a noted drone scholar at the University of Washington, thinks a person or property "would probably have to be threatened . . . for [one] to be able to destroy someone else's drone without fear of a counterclaim."¹³⁵ Ultimately, the general proposition is that self-help remedies regarding drones can and should exist, but within reasonable limits.¹³⁶

130. See *Self-Defense Against Drones*, DRONE LAW (Oct. 5, 2014), <http://dronelaw.com/2014/10/05/self-defense-drones> (citing Froomkin and Colangelo, two noted robotics law scholars, who stated that "as a general matter—but subject to some pretty important exceptions—a person who reasonably fears harm from a robot has a right to act to prevent that harm, up to and even in some—but far from all—cases shooting it down").

131. See A. Michael Froomkin & Zak Colangelo, *Self-Defense Against Overflying Drones*, WASH. POST (Oct. 3, 2014), <http://www.washingtonpost.com/news/volokh-conspiracy/wp/2014/10/03/self-defense-against-overflying-drones/> ("The toughest question is the scope of permissible self-help when individuals fear for their privacy rather than for their safety or property.").

132. See Flacy, *supra* note 19 (reporting a man who thought his neighbor was spying on him and used a shotgun to shoot the drone over his land). The drone was damaged but not downed, and the shooter was arrested for unlawful use of a weapon and criminal mischief. See *id.* (describing the attack and subsequent events); Roberts, *supra* note 128 (providing further details about the attack and noting that self-help is typically not an approved remedy); see also Silencerco, *Johnny Dronehunter: Defender of Privacy—Official Trailer Feat. Salvo 12 Shotgun Silencer*, YOUTUBE (July 29, 2014), <https://www.youtube.com/watch?v=jIXwQVFt8Ho> ("In the not-too-distant future, privacy is a thing of the past. Undeniable rights degrade like the paper they were written upon, and Big Brother has a constant eye on you and your family.").

133. See Alex Brown, *Watch a Congressional Candidate Shoot Down a 'Government Drone'*, NAT'L J. (Apr. 16, 2014), <http://www.nationaljournal.com/tech/watch-a-congressional-candidate-shoot-down-a-government-drone-20140416> (describing candidate Matt Rosendale, whose campaign video showed him shooting down a government drone with a rifle); see also Froomkin & Colangelo, *supra* note 131 (explaining that shooting in public areas will not be protected and discussing potential differences in rural areas).

134. See William A. McRae Jr., *The Development of Nuisance in the Early Common Law*, 1 U. FLA. L. REV. 27, 33 (1948) (stating an injured party must act immediately).

135. Roberts, *supra* note 128.

136. See Froomkin & Colangelo, *supra* note 131 (proposing limited self-help rules and arguing for clearer ways to notify individuals when their privacy may be endangered).

D. *Strict Liability*

An interesting caveat in the development of nuisance law will be whether the act of piloting a drone over another's property will be considered an abnormally dangerous activity.¹³⁷ Abnormally dangerous activities are scrutinized under a strict liability standard—meaning the exercise of due care does not absolve the actor of accountability—which significantly increases an individual's exposure to tort damages.¹³⁸ A comment in the Restatement describes liability for abnormally dangerous activities as “[t]he liability [that] arises out of the abnormal danger of the activity itself, and the risk that it creates, of harm to those in the vicinity.”¹³⁹

Examples of activities currently classified as abnormally dangerous include blasting, releasing poisonous gas, and storing explosives.¹⁴⁰ Other activities, such as discharging of illegal substances into streams, burying of deceased animals, and beekeeping, have been held to a negligence or recklessness standard.¹⁴¹ Therefore, to hold the private use of drone aircraft to a strict liability standard for private nuisance, a court must find the resulting harm falls within the scope of abnormally dangerous activities.¹⁴²

E. *Limited Tort Rights of Drone Operators*

In certain circumstances, an individual may enter the property of another to recapture a drone.¹⁴³ The Restatement provides an

137. See RESTATEMENT (SECOND) OF TORTS § 519 (1977) (advocating for a strict liability standard to apply towards abnormally dangerous acts).

138. See *id.* (“One who carries on an abnormally dangerous activity is subject to liability for harm to the person, land[,] or chattels of another resulting from the activity, although he has exercised the utmost care to prevent the harm.”); see also *Taylor v. City of Cincinnati*, 55 N.E.2d 724, 727–28 (Ohio 1944) (“There are also certain general types of conduct which, considered from a moral and social standpoint, involve culpable and unlawful acts and impose upon the actor strict or absolute liability for resulting harms without regard to the care exercised to prevent them.”).

139. RESTATEMENT (SECOND) OF TORTS § 519 cmt. d (1977); cf. *Taylor*, 55 N.E.2d at 728 (“A person who . . . brings on his lands . . . anything likely to do mischief, if it escapes, must keep it at his peril; and . . . he is prima facie answerable for all the damage which is the natural consequence of its escape.”).

140. See RESTATEMENT (SECOND) OF TORTS § 822 cmt. j (1979) (listing cases involving abnormally dangerous conditions and activities).

141. See *id.* § 822 (providing a list of cases involving activities scrutinized under a negligence or recklessness standard).

142. See *id.* § 822 cmt. k (distinguishing between intentional, unintentional, and abnormally dangerous invasions and the various standards employed when determining whether a cause of action for private nuisance has occurred).

143. Cf. Ephraim Glatt, *Give Me Back My Bicycle: The Use of Force to Recapture Chattel According to*

explanation for the forcible taking of chattels:

The use of reasonable force against another for the purpose of recapt[ure] is privileged if the other (a) has tortiously taken the chattel from the actor's possession without claim of right, or under claim of right but by force or other duress or fraud, or (b) has otherwise tortiously taken the chattel from the actor's possession and is about to remove it from the actor's premises.¹⁴⁴

Notably, the right to enter the land of another to retake one's chattel is conditioned on the phrase "without claim of right."¹⁴⁵ If a person captures the property of another under a claim of right, the lawful chattel owner forfeits the privilege to forcefully retake the property unless taken by force, fraud, or duress.¹⁴⁶ Even when recapture is privileged, the drone owner is entitled to use only the amount of force reasonably necessary; force intended or likely to cause serious injury or death is disallowed.¹⁴⁷

IV. POTENTIAL FOR FEDERAL PREEMPTION

The federal government has waded into the issue of civilian drone use, at times gingerly, and at others brashly.¹⁴⁸ In 1981, the FAA released

American Law and Jewish Law, 16 GONZ. J. INT'L L., Spring 2013, at 51, 53–54 (evaluating the self-help privilege and noting the conditional requirements that must be met prior to using force).

144. RESTATEMENT (SECOND) OF TORTS § 101 (1965); *see also* JOHNSON, STUDIES IN AMERICAN TORT LAW, *supra* note 82, at 160 ("Efforts to recover personal property taken by fraud, force, or other tortious conduct may fall within the privilege to recapture chattels.").

145. RESTATEMENT (SECOND) OF TORTS § 101 (1965).

146. *See id.* § 101 cmt. e (emphasizing there is no privilege to use force when a chattel is taken "under a claim of right," but proposing the use of force is privileged if the property was taken by fraud or duress).

147. *See id.* § 106 (discussing the amount of force permissible to recapture chattels); *id.* at cmt. b ("If a chattel can be retaken without the use of force against the other, as where the chattel is not held by, or upon the person of, the other, the use of force against the other is unnecessary and therefore unprivileged.").

148. *See* McNeal, *supra* note 21 (criticizing FAA publications as inane). McNeal writes:

If a realtor films buildings for fun using a remote controlled quadcopter[,] that's legal. But if she takes that same quadcopter and films buildings as part of her job, that is illegal. If a farmer flies a model aircraft over his cornfield doing barrel rolls and loops, that's legal. But if he uses the same model airplane to determine how to conserve water or use less fertilizer that's illegal.

Id.; *see also* Press Release, Nat'l Park Serv., *supra* note 52 (announcing the National Park Service's decision directing superintendents to forbid "launching, landing, or operating unmanned aircraft" on federal property due to safety concerns for park visitors and wildlife). Although the ban is temporary, steps have been taken towards implementing a more permanent regulation. *See id.* ("[The process of more permanent regulation] can take considerable time, depending on the complexity of the rule, and includes public notice of the proposed regulation and opportunity for public comment.").

Advisory Circular (AC) 91-57 as an attempt to provide recommended operating guidelines for private operators of model aircraft.¹⁴⁹ Although this guidance was merely persuasive¹⁵⁰ and focuses primarily on the avoidance of property and casualty damage,¹⁵¹ the FAA urged operators to pilot crafts away from populated areas.¹⁵² In 2007, the FAA issued a statement attempting to clarify AC 91-57.¹⁵³ Particularly, the FAA's 2007 guidance required model aircraft to be flown "within visual line-of-sight."¹⁵⁴ Later, in 2012, Congress passed the FAA Modernization and Reform Act.¹⁵⁵ The Act directed the FAA to propose a plan to integrate drone aircraft into the National Airspace System (NAS) by September 30, 2015.¹⁵⁶ The Act created guidelines for drones to be considered by the FAA, stating drones to be addressed under these guidelines should: weigh twenty-five pounds or less, maintain an altitude of 400 feet or lower, remain in the line-of-sight of the operator, and be flown exclusively during daytime hours.¹⁵⁷ Scholars and those following the FAA's progress declared the September 30th deadline would not be met—indeed, FAA officials cautioned as much¹⁵⁸—but the proposed rules were published on

149. See FAA, DEP'T OF TRANS. ADVISORY CIRCULAR 91-57, *supra* note 29 (outlining early FAA model aircraft guidelines and acknowledging the potential dangers model aircraft pose to persons, property, and larger aircraft).

150. See *id.* (encouraging voluntary compliance with the operating standards); see also DOLAN & THOMPSON, *supra* note 11, at 4 ("Compliance with these guidelines is voluntary [for recreational users].").

151. See FAA, DEP'T OF TRANS. ADVISORY CIRCULAR 91-57, *supra* note 29 ("[M]odel aircraft can at times pose a hazard to full-scale aircraft in flight and to persons and property on the surface.").

152. See *id.* (recommending users operate model aircraft in a safe and responsible manner).

153. See generally Unmanned Aircraft Operations in the National Airspace System, 72 Fed. Reg. 6689 (Feb. 13, 2007) (codified at 14 C.F.R. pt 91) (determining unmanned aircraft, such as drones, fall within the definition of "aircraft" and consequently should yield to the regulatory authority of the FAA). However, this policy notice exempted use of UAS by hobbyists. See *id.* at 6690 (defining hobby to mean "model aircraft used for 'sport and recreation' only").

154. *Id.*

155. FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, 126 Stat. 11 (codified at 49 U.S.C. § 40101) (establishing a 2015 deadline for FAA action on the integration of drones into the National Airspace System).

156. See *id.* § 332(a)(3), 126 Stat. at 73 ("The plan required under paragraph (1) shall provide for the safe integration of civil unmanned aircraft systems into the national airspace system as soon as practicable, but not later than September 30, 2015.").

157. See *id.* § 334(C)(2)(c), 126 Stat. at 77 (outlining drone requirements); see also Villasenor, *supra* note 12, at 473 (describing the statutory guidelines).

158. See Beckham, *supra* note 10 ("Drone enthusiasts are waiting for the FAA to come up with rules and standards to govern UAV as directed by Congress, but a recent government audit states that the agency is behind schedule and will miss its September 2015 deadline."); Erin Mershon & Kevin Robillard, *President Barack Obama to Issue Executive Order on Drone Privacy*, POLITICO (July 23, 2014, 7:01 PM), <http://www.politico.com/story/2014/07/executive-order-drone-privacy-barack-obama-109303.html> (affirming an inspector general's report casting doubt on the FAA's ability to

February 15, less than three weeks after a drone crash on the White House lawn.¹⁵⁹ The new rules limit drone flights to daylight hours, impose a 500 foot flight ceiling, and require line-of-sight operation.¹⁶⁰

Because drones are often flown in national airspace, federal laws may preempt state laws governing the use of drone aircraft by private parties.¹⁶¹ A report authored by the Congressional Research Service in 2013 explained the issue:

A federal law may preempt state or local action in one of three ways: if the statute expressly states its intent to preempt state or local action (express preemption); if a court concludes that Congress intended to occupy the regulatory field, implicitly preventing state or local action in that area (field preemption); or if the state or local action directly conflicts with or frustrates the purpose of the federal provisions (conflict preemption).¹⁶²

The FAA has also issued statements regarding privacy concerns and drone aircraft.¹⁶³ The proposed rules outline the FAA's intentions, which require "[t]he [s]ite [o]perator and its team members . . . to operate in accordance with [f]ederal, state, and other laws regarding the protection of an individual's right to privacy."¹⁶⁴ However, this instruction focuses narrowly on operation sites and does not address the more significant concern of potential privacy implications once a drone is airborne.¹⁶⁵

Some scholars argue drone privacy issues should be decided by the

meet the deadline).

159. See Josh Lederman & Calvin Woodard, *Obama Sees Need to Move on Drone Rules Now*, YAHOO! TECH (Jan. 27, 2015), <https://www.yahoo.com/tech/s/spokesman-secret-recovers-device-white-house-095128139.html> (quoting President Obama, who stated, "We don't yet have the legal structures and the architecture both globally and within individual countries to manage [drones] the way we need to."); see also FAA, OVERVIEW OF SMALL UAS NOTICE OF PROPOSED RULEMAKING (2015), available at http://www.faa.gov/regulations_policies/rulemaking/media/021515_sUAS_Summary.pdf (delineating the new rules and providing the opportunity for public comment); Press Release, FAA, DOT and FAA Propose New Rules for Small Unmanned Aircraft Systems (Feb. 15, 2015), https://www.faa.gov/news/press_releases/news_story.cfm?newsId=18295 (announcing the proposed rules less than three weeks after President Obama's remarks on the drone crash).

160. See FAA, OVERVIEW OF SMALL UAS NOTICE OF PROPOSED RULEMAKING, *supra* note 159 (summarizing the new rules).

161. See generally DOLAN & THOMPSON, *supra* note 11, at 28 (exploring the notion of federal laws preempting state decisions regarding drones).

162. *Id.*

163. See Unmanned Aircraft System Test Site Program, 78 Fed. Reg. 12,259, 12,260 (Feb. 22, 2013) (codified at 14 C.F.R. pt. 91) (reporting the FAA's proposed approach to privacy concerns and requesting public comments).

164. *Id.*; see also Barbee, *supra* note 21, at 476 (discussing the FAA's approach to privacy).

165. See Barbee, *supra* note 21, at 476 (examining the narrow scope of the FAA's guidance on drone operator privacy).

states.¹⁶⁶ This general proposition stems from a belief that privacy protections are not specifically outlined in the Constitution, and thus are best handled at the state level.¹⁶⁷ Indeed, existing state privacy laws properly protect the public from current privacy invasions.¹⁶⁸ Therefore, with the introduction of new technologies—in this case, drones—potential privacy invasions should be legislated in the same manner as other privacy invasions.¹⁶⁹ Advocates of this approach do not attempt to remove the FAA from the civilian drone discussion; rather, they believe the FAA should focus on matters concerning civilian safety and basic aviation, leaving privacy implications to state legislative bodies.¹⁷⁰

V. CONCLUSION

Private use of drone aircraft is part of the technological future,¹⁷¹ as their many beneficial uses of drones have ensured their place in our society.¹⁷² It has never been appropriate to spy on one's neighbor who is sunbathing, and just because it is now possible to do so from a height of fifty feet while maintaining increased anonymity, the conduct is not deprived of its tortiousness.¹⁷³ Similarly, existing tort laws probably

166. See Kaminski, *supra* note 24, at 58 (arguing laws “governing civilian drone use on other matters, particularly video and image capture, will be far more complex, and will more closely resemble the regulation of subject matter traditionally covered by the states”).

167. See *id.* at 64 (advocating for drone privacy to be left to state legislatures, based on many factors, including economic efficiency).

168. See Villasenor, *supra* note 12, at 505 (reviewing statutes governing stalking and harassment and stating “many of these statutes are worded broadly enough that use of a UAS to persistently follow a person or peer into his or her car or home would be considered, at the very least, harassment”).

169. See Kaminski, *supra* note 24, at 62–64 (using a circuit split to illustrate how court opinions differ by jurisdiction).

170. See *id.* at 67 (emphasizing the importance of the FAA's role in properly integrating drones into the National Airspace System and outlining recommended FAA involvement); see also 14 C.F.R. § 91.13 (2014) (showing an example of useful FAA regulations).

171. Press Release, Teal Grp. Corp., *supra* note 36 (explaining the UAV market's continuous evolution and forecasting significant future growth and adoption). Bennett suggests, “The combination is unique and should not go to waste, as civilian drones grow less novel and more commonplace, and the country mulls the best approach to ‘private’ privacy and aerial surveillance.” BENNETT, *supra* note 32, at 15.

172. See Michael Melle, *5 Benefits of Drones (UAS) That Might Surprise You*, SRI INT'L (Aug. 7, 2013, 1:26 PM), <http://www.sri.com/blog/5-benefits-drones> (providing examples of beneficial public uses of drones); see also Beckham, *supra* note 10 (noting the benefits that could be gleaned from the use of drones in sports photography). But see Kaminski, *supra* note 24, at 72 (stressing state legislators should generally update surveillance laws rather than employ a drone-specific solution).

173. See Cho, *supra* note 14, at 219 (“[T]he use of UAVs can be highly restrictive where issues of privacy are concerned. For example, in the U.S. ‘Peeping Tom’ laws make it impermissible to use a camera mounted on a UAV to spy on a neighbor’s backyard sunbathing habits.”).

address most invasions of privacy caused by drone aircraft.¹⁷⁴ The areas where the law is least equipped to address private use of drone aircraft are trespasses to land, when a drone breaks the close of another person.¹⁷⁵ The judiciary and legislature will have to decide the height at which drone flights remain privileged as an exercise of the right to travel in public airspace.¹⁷⁶ This task may require a reexamination of current curtilage standards.¹⁷⁷ As the next generation of robotic technology, drones have much to offer society.¹⁷⁸ In order to balance expectations for appropriate use of these devices with reasonable and long-standing assumptions of privacy, it will be necessary to merge the most applicable aspects of existing tort law with a modern understanding of appropriate standards of conduct.¹⁷⁹

174. See BENNETT, *supra* note 32, at 7 (emphasizing “more established but similar technologies: helicopters with cameras, reporters with dictaphones, everyday people with cell phone cameras, and so forth” help to resolve the drone privacy issue). *But see* Wald, *supra* note 37 (“There’s very little in American privacy law that would limit the use of drones for surveillance”).

175. See Froomkin & Colangelo, *supra* note 131 (arguing FAA-compliant drone flights below altitudes of 500 feet are not trespasses and suggesting helicopters are already authorized to hover at these lower altitudes).

176. See *generally id.* (indicating there is uncertainty about the height a drone can fly without constituting an actionable trespass).

177. See *id.* (stating “people will need to know [the vertical perimeter of their property] in order to determine when an aerial robot is committing a trespass”).

178. See Villasenor, *supra* note 12, at 459 (discussing beneficial civilian uses of drones).

179. See GAO-12-981, *supra* note 15, at 35, 38 (recommending guidelines for UAS-acquired data and the protection of private information).