

# DRONES: THE ROLE OF LOAC, TARGETED KILLING, INTERNATIONAL LAW, AND PRIVACY LAW

By

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Submitted to the graduate degree program in the Law Faculty of the University of Kansas in fulfillment of the requirements for the degree of Doctor of Juridical Science.

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January 12, 2018

## **Acknowledgements**

To my life-coach, beloved Babaji; because I owe it all to you. Many Thanks!

This work would have not been possible without the able guidance of my advisor Prof. Michael Hoeflich. The door to Prof. Hoeflich office was always open whenever I ran into a trouble spot or had a question about my research or writing. He consistently allowed this research to be my own work, but steered me in the right direction whenever he thought I needed it.

I am also grateful to the members of my committee, Professor Virginia Harper Ho and Professor Lumen Mulligan for their patience and support in overcoming numerous obstacles I have been facing through my research, especially last-minute favors. I would also like to acknowledge Professor Anupam Jha of the Law Faculty at University of Delhi as the outside committee. I am gratefully indebted to his very valuable support. The library specialists were always supportive to my work and helped me achieve better quality of research.

Finally, I must express my very profound gratitude to my friends for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis. This accomplishment would not have been possible without them. Thank you!

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## Abstract

*This qualitative research study directly analyzes the legality of drone usage. This project discusses world policy on drone strikes for counterterrorism purposes and the myths about current-generation drone's capabilities and implications. This project separates fact from fiction by examining drone effects in three different legal contexts—legality under LOAC, targeted killing for counterterrorism, and privacy laws with a comparative study between the U.S., UK, and India.*

*Using unmanned drones against belligerents put forth major legal issues in modern warfare. In the twenty-first century, the use of drones in military combat operations is one of the most legally controversial issues confronting international humanitarian law (IHL) and the law of armed conflict (LOAC). This research argues that drones should be treated as any other component of the United States' (U.S.) arsenal. A drone can may be a weapons platform or singular weapon system. This research further argues that drones offer extensive and enhanced opportunities for compliance with LOAC and other relevant laws governing the use of certain weapons use.*

*Further, this research gives an overview of the justifications for targeted killings carried out by drones as a means of warfare. The justifications for targeted drone strikes can break down along three lines operational considerations, theories of self-defense, and moral concerns. The research focuses on targeted killing as it pertains to drones employed as a means of warfare by the U.S. in its War on Terror. Further, this research examines whether the use of drones for targeted killings comports with the IHL. This research also examines the effectiveness of targeted killing. This research analyzes the legality of targeted killing, under both domestic law and international law.*

*Additionally, this research provides a comparative chapter on constitutional, privacy, property, and aviation laws of the U.S., U.K., and India in relation to their respective privacy laws. The purpose of this research is to analyze the government and civilian uses of drones in these three countries and identify the "best-practices" for global application. All three nations have drone regulating agencies such as Federal Aviation Administration (FAA) for the U.S., Civil Aviation Authority (CAA) for U.K., and Director General of Civil Aviation (DGCA) for India. These agencies are license drones, but they do not provide any regulations for privacy issues. This leaves*

*a gap between drone usage regulations and privacy protection of the people. The other areas of law can fill this gap, particularly if the drone has a camera mounted on it. These areas of law are constitutional, common-law torts of nuisance and trespass, as well as the privacy, and data protection laws. Also, this research provides appropriate solutions for drone privacy laws.*

*Finally, this research identifies issues unanswered by this dissertation for the future research projects. The next project will be a comprehensive assessment of the consequences of current-generation drone proliferation in disputed territories and vulnerabilities to cyber-attack.*

Keywords: Drones, UAVs, Targeted killing, Surveillance Law, International Law, LOAC, IHL and Privacy Law

## Chapter 1: Historical Introduction and Technology Used in Drones

### 1. Introduction

The drone proliferation has spawned intellectual debates on whether a country has the right under the international law to unilaterally deploy these remotely or autonomously controlled aircraft abroad for military purposes;<sup>1</sup> as well as for civilian purpose under domestic law. Drones have been parodied, satirized, caricatured, excoriated, and fetishized in a wide variety of outlets and media, including late night talk shows, cartoons, Hollywood blockbusters, rock music, street art, gallery art, comedy shows, and the White House Correspondent's dinner, among others.<sup>2</sup> People have heard about drones, but they have heard different and contradictory things,<sup>3</sup> whether they are for them, against them, or neither.<sup>4</sup> The overwhelming interest by militaries, hobbyists, and commercial purposes means this technology is significant.<sup>5</sup> Intent of people, while using drones technology will determine whether its potential is exploited for progress or for cataclysm.<sup>6</sup>

The nature and use of drones varies widely.<sup>7</sup> An increasing number of countries have access to this novel technology to fulfill various military objectives, including surveillance, reconnaissance, and targeted killing.<sup>8</sup> The legality of drones' use raises questions for a variety of

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<sup>1</sup> Heeyong Daniel Jang, *The Lawfulness of and case for combat drones in the fight against terrorism*, 2 NAT'L SEC. L. J. 1 (2013)

<sup>2</sup> Arthur Holland Michel, *Drones in Popular Culture*, CENTER FOR THE STUDY OF THE DRONE AT BARD COLLEGE, (September 4, 2015) <http://dronecenter.bard.edu/drones-popular-culture/>

<sup>3</sup> Adam Rothstein, *Drone*, IX (2015)

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

<sup>7</sup> Michael Schmitt, *Drone Attacks Under the Jus ad Bellum and Jus in Bello: Clearing the 'Fog of Law'* (2011) <http://ssrn.com/abstract=1801179>

<sup>8</sup> Jang, *supra* note 1.

reasons, some more grounded in fact than others, but despite these criticisms there is little question that the use of drones in surveillance and combat roles is on the rise.<sup>9</sup>

This research mainly focuses on the legal justifications for the use of drones in wartime. The U.S. has increasingly relied upon drones, to target and kill enemies in its war on terror. Drone strikes have proven to be spectacularly successful-both in terms of finding and killing targeted enemies and in avoiding most of the challenges and controversies that accompany using traditional forces.

However, critics have begun to challenge on a number of grounds the legality and morality of using drones to kill belligerents in the non-traditional conflicts in which the U.S. continues to fight. This research identifies the legal framework and sources of law applicable to the current conflicts in which drones are employed; examines whether, and if so in what circumstances, using drones for targeting operations violates the LOAC and international law. Further, it provides the justification for drone targeting killing operations. However, the emerging range of security, law enforcement, and civilian applications for drones increasingly moves them beyond the confines of international military campaigns. Law enforcement agency drone surveillance programs are raising privacy concerns. This research provides a primer on privacy issues related to various drone operations, both public and private, including an overview of current drone uses. This research proposes legal and policy guidelines for the privacy issues of drone usage. This research responds to the legal challenges of drone usage.

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<sup>9</sup> Michael Lewis, *Drones and the Boundaries of the Battlefield*, 47 Tex. Int'l L. J. 294 (2012)

This research examines the legal posturing and what drones really are: what technologies are out there and what is coming next. This chapter discusses the evolution of drones and a history of the use and rhetoric of drones that can serve as the basis for robust public debate in following chapters. This chapter includes the definition of drones, historical background, and the evolution of predator drones. The chapter discusses three types of drones, i.e. surveillance, armed and hobbyist, and their technologies. It is important to discuss technology used in drones because a drone can perform its function with the help of these technologies. These functions cause various legal challenges for drone operators. For example, performing surveillance with drones presents unique legal threats to the safety and privacy of individuals. This chapter will help in developing legal analysis of drones in the following chapters that drones are not illegal to use but they are more complicated.

## **2. Drones**

The term “drone” is consistently and materially employed throughout this research, as such, there is a need to stipulate to a working definition because of the term’s importance here. It will be helpful in addressing the legal challenges that underlie the use of drones.

### **A. What exactly is a drone?**

To ensure the same basic understanding of the term from the outset, this preliminary definition should help readers in addressing the legal issues that underlie the use of drones. The word “drone” encompasses everything from toy drones to weaponized drones.<sup>10</sup> Categorically, "drone" refers to

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<sup>10</sup> Rothstein, *supra* note 3.

any unmanned, remotely piloted, flying craft ranging from something as small as a radio-controlled toy helicopter, to the 32,000-pound, \$104 million Global Hawk military drone. In determining what exactly constitutes a drone under this language one considers whether the vehicle or flying craft at issue (1) flies and (2) a pilot on the ground controls it; if the vehicle meets these criteria it falls under the everyday-language definition of drone.<sup>11</sup>

The U.S. Army officially defines a drone as “a land, sea, or air vehicle that is remotely or automatically controlled.”<sup>12</sup> The U.S. Department of Defense defines a drone as:

[a] powered, aerial vehicle that does not carry a human operator, uses aerodynamic forces to provide vehicle lift, can fly autonomously or be remotely piloted, can be expendable or recoverable, and can carry a lethal or nonlethal payload. Ballistic or semi-ballistic vehicles, cruise missiles, and artillery projectiles are not considered unmanned aerial vehicles.<sup>13</sup>

Military drones are also referenced to as Unmanned Aerial Vehicles (UAVs), Unmanned Combat Aerial Vehicles (UCAVs), or hunter-killers.<sup>14</sup> The history of drones is that of a watchful eye turned weapon.<sup>15</sup> The drone is not a projectile, but a projectile-carrying machine.<sup>16</sup> Also, this research uses the term “drone” for domestic drones or non-weaponized drone. The drone

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<sup>11</sup> Kelsey Atherton, *Flying Robots 101: Everything you Need to Know About Drones*, POPULAR SCIENCE, (March 7, 2013) <http://www.popsci.com/technology/article/2013-03/drone-any-other-name>

<sup>12</sup> *Department of defense*, DICTIONARY OF MILITARY AND ASSOCIATED TERMS, 109 (August 2011). (Original Gregoire Chamayou, Translated by Janet Lloyd, *A Theory of the Drone*, 27, The New Press, New York 2015)

<sup>13</sup> Laurie Blank, *After “Top Gun”: How Drone Strikes Impact the Law of War*, U. PA. J. INT’L L. VOL. 33:3, 677(March 14, 2012)

<sup>14</sup> Lewis, *supra* note 9.

<sup>15</sup> Gregoire Chamayou, *A Theory of the Drone*, 11 (2015)

<sup>16</sup> *Id.*

architecture is identical to a military drone. However, it is built from hobbyist kits.<sup>17</sup> They have certain features in common.<sup>18</sup>

## **B. Where does the term drone come from?**

In Old English, drone referred to a male honeybee whose only role is to mate with the queen.<sup>19</sup> Because drones, unlike worker bees, need not worry about gathering nectar or pollen, they have often been seen as idlers, and by the 16th century, drone could refer to lazy humans as well.<sup>20</sup> Around the same time, the word drone began branching out as a verb, meaning to buzz like a bee or to speak in a monotonous fashion reminiscent of a bee's persistent hum.<sup>21</sup> Bees also played a key role in the use of drones for early radio-controlled aircraft, but for other reasons.<sup>22</sup> According to the military historian Steven Zaloga, author of the 2008 book *Unmanned Aerial Vehicles*, in 1935, U.S. Adm. William H. Standley saw a British demonstration of the Royal Navy's new remote-control aircraft for target practice, the DH 82B Queen Bee.<sup>23</sup> Back stateside, Standley charged Commander Delmer Fahrney with developing something similar for the Navy.<sup>24</sup> Zaloga wrote "Fahrney adopted the name 'drone' to refer to these aircraft in homage to the Queen Bee."<sup>25</sup>

The term fits, as a drone could only function when controlled by an operator on the ground or in a "mother" plane.<sup>26</sup> Following their lead, any machine that flew without on-board human control

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<sup>17</sup> Rothstein, *supra* note 3, at 43.

<sup>18</sup> *Top 10 Drones for 2015*, DRONE AND QUADCOPTER, (August 9, 2015) <http://droneandquadcopter.com/top-10-drones/>

<sup>19</sup> Ben Zimmer, *The Flight of 'Drone' from Bees to Planes*, THE WALL STREET JOURNAL, (July 26, 2013) <http://www.wsj.com/articles/SB10001424127887324110404578625803736954968>

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

is termed a drone.<sup>27</sup> Early in the twenty first century a drone was defined as a pilotless, radio-controlled military target-towing aircraft. Today drone is the popular description for anything that flies without a pilot at the controls, whether it controlled directly by an operator on the ground or is capable of autonomous flight with no direct human intervention.<sup>28</sup>

### 3. Historical background

The drone's military value did not blossom overnight. Unmanned aircraft have a long history of being used for surveillance and deadly strikes against known enemy targets where it seemed essential to use covert stealth techniques. The first recorded action goes back to August 22, 1849, when the Austrians, who controlled much of Italy at that time, launched some 200 pilotless balloons against the city of Venice.<sup>29</sup> The balloons were armed with bombs controlled by timed fuses or fuses electrically activated via signals fed up trailing copper wires.<sup>30</sup> In 1862, less than two decades later, balloons were flown in the U.S. Civil War with both Confederate and Union forces using them for reconnaissance and bombing sorties.<sup>31</sup> Fast-forward to 1898, during the Spanish-American War, the U.S. military fit a camera on a kite, producing the first ever-aerial reconnaissance photos.<sup>32</sup> The origins of the electronic drone can be traced to the “target drones” used in the early twentieth century.<sup>33</sup> These “dumb” drones were used to test and train combat

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<sup>27</sup> Atherton, *supra* note 11.

<sup>28</sup> Mark Corcoran, *Drone wars: The definition dogfight*, ABC (February 28, 2013)<http://www.abc.net.au/news/2013-03-01/drone-wars-the-definition-dogfight/4546598>

<sup>29</sup> Remote Piloted Aerial Vehicles: An Anthology, *RPAV*  
[http://www.ctie.monash.edu/hargrave/rpav\\_home.html#Beginnings](http://www.ctie.monash.edu/hargrave/rpav_home.html#Beginnings)

<sup>30</sup> *Id.*

<sup>31</sup> Ian Shaw, *The Rise of the Predator Empire: Tracing the History of U.S. Drones*, UNDERSTANDING EMPIRE, (2014)  
<https://understandingempire.wordpress.com/2-0-a-brief-history-of-u-s-drones/>

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

pilots and anti-aircraft gunners.<sup>34</sup> That was precisely what a target drone was: a dummy towing a target, inexpensively made, to serve a limited purpose, and be shot down.<sup>35</sup>

The history of technology suggests that technology is constantly evolving, and outdating its prior inventions. In 1916, and across a shrinking Atlantic, the idea of remotely-guided weapons sparked the interest of Captain Archibald M. Low of the Royal Flying Corps in the U.K. Low oversaw the construction of a number of remotely-piloted planes that were fitted with explosive warheads.<sup>36</sup> This included the “Aerial Target,” which was first launched in March 1917 from the rear of a truck in England.<sup>37</sup> The lightweight wooden plane along with successive incarnations largely failed to maintain its altitude.<sup>38</sup> However, the U.S. tried to build pilotless aircraft during World War I, when the army experimented with a couple of “aerial torpedoes.”<sup>39</sup> The one that came closest to being produced was the Kettering Bug, a tiny biplane designed to take off from rails and deliver a two-hundred-pound warhead fifty miles away, guided by a complicated autopilot system that involved a barometer and a gyroscope.<sup>40</sup> The Bug never worked as planned, until a test a few days before November 11, 1918, the day World War I ended.<sup>41</sup> In Germany, Dr. Wilhelm von Siemens was pioneering a similar project between 1915 and 1918.<sup>42</sup> The Siemens Torpedo Glider was a missile that could be dropped from a Zeppelin and then be guided towards

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<sup>34</sup> *Id.*

<sup>35</sup> Chamayou, *supra* note 15, at 26.

<sup>36</sup> Shaw, *supra* note 31.

<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

<sup>39</sup> Richard Whittle, *Predator: the secret origins of the drone revolution*, at 19, (2014)

<sup>40</sup> *Id.*

<sup>41</sup> *Id.*

<sup>42</sup> Shaw, *supra* note 31.

its target by radio.<sup>43</sup> Crucially, however, for the period in which they were airborne, the Aerial Targets did respond to radio control.<sup>44</sup>

Remote control would not become fully functional without major strides in radio technology.<sup>45</sup> The Flying Bomb, the Bug, and the Torpedo Glider were all early forerunners to contemporary cruise missiles.<sup>46</sup> However, the existence of such planes remained at an experimental stage.<sup>47</sup> In the 1930s, the idea of using radio signals to fly airplanes remotely was pursued by Hollywood actor Reginald Denny.<sup>48</sup> He founded the Radio-plane Company in Los Angeles which turned its attention toward aeromodelism.<sup>49</sup> During World War II, the Germans deployed drone bombs that were launched from planes and steered to the target by a pilot using a radio-controlled stick.<sup>50</sup> The U.S. manufactured 15,000 drones for anti-aircraft practice at a plant in southern California during the war, and the career of Norma Jean Dougherty, later known as Marilyn Monroe, was launched when an Army magazine published a photograph of her working in a drone factory.<sup>51</sup> Thus the drone was born partly in Hollywood.<sup>52</sup>

In another incident in 1944, U.S. Army Air Force's project Aphrodite, packed twenty-thousand pounds of high explosives into heavily-used B-17 bombers, which were rigged to be flown by

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<sup>43</sup> *Id.*

<sup>44</sup> *Id.*

<sup>45</sup> *Id.*

<sup>46</sup> *Id.*

<sup>47</sup> *Id.*

<sup>48</sup> Whittle, *supra* note 39.

<sup>49</sup> Chamayou, *supra* note 15.

<sup>50</sup> Peter Finn, *Rise of the drone: from Calif. garage to multibillion dollar defense industry*, THE WASHINGTON POST, (December 23, 2011) [http://www.washingtonpost.com/national/national-security/rise-of-the-drone-from-calif-garage-to-multibillion-dollar-defense-industry/2011/12/22/gIQACG8UEP\\_story.html](http://www.washingtonpost.com/national/national-security/rise-of-the-drone-from-calif-garage-to-multibillion-dollar-defense-industry/2011/12/22/gIQACG8UEP_story.html)

<sup>51</sup> *Id.*

<sup>52</sup> Chamayou, *supra* note 15.

remote control, then crashed into targets by a “mother ship” flying much higher.<sup>53</sup> Getting such a flying bomb airborne by radio was problematic, a crew of two airmen was needed to take off in the modified bomber, designated a BQ-7, to arm the explosives and engage an autopilot to turn control over to the accompanying mother ship, then bail over England.<sup>54</sup>

Denny's Radio-plane company continued to sell the U.S. Army its propeller-driven remote-control target drones after the war, and in 1955 the company added a film camera to one, creating the world's first unmanned reconnaissance aircraft.<sup>55</sup>

However, all this activity took place on the margins of warfare.<sup>56</sup> The problem afflicting drones was a lack of endurance in the air, and<sup>57</sup> their weapons delivery was blunt and inflexible.<sup>58</sup> In the 1960s and '70s, Air Force engineers continued to tinker with unmanned aircraft for use in surveillance flights, which do not engage in complex flight maneuvers and require less sophisticated piloting.<sup>59</sup> Unfortunately, the drones kept crashing.<sup>60</sup>

### **Inventor of drone: Abraham Karem and evolution of the Predator drone**

This section discusses the evolution of predator drone and role of its inventor Abraham Karem. Abraham Karem, (Abe), was constantly working on drones and dreamed of making them more efficient and effective. He developed an early fascination with building aircraft and gravitated toward drones in the early 1970s when Israeli aviation engineers tried to satisfy an

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<sup>53</sup> Whittle, *supra* note 39 at 20 (revised)

<sup>54</sup> *Id.*

<sup>55</sup> *Id.*, at 21.

<sup>56</sup> Finn, *supra* note 50.

<sup>57</sup> *Id.*

<sup>58</sup> John Sifton, *A Brief History of Drones*, THE NATION, (February 12, 2012) <http://www.thenation.com/article/brief-history-drones/>

<sup>59</sup> John Sifton

<sup>60</sup> Finn, *supra* note 50.

operational need for real-time, front-line intelligence.<sup>61</sup> Abe's preoccupation with drones continued for 30 years.<sup>62</sup>

Abe was concerned about the lack of endurance of a drone in the air.<sup>63</sup> He wanted to increase the endurance of drones, some of which were crashing every 20 hours, by a factor of 100.<sup>64</sup> He felt certain he could get at least 2000 hours flight time out of drones, making them far more cost effective, which would make them more attractive as carriers of expensive cameras and other gadgets that the military needed.<sup>65</sup>

Born in Baghdad, Abe was the son of a Jewish merchant who moved the family to Israel in 1951.<sup>66</sup> He was a born engineer.<sup>67</sup> From the time Abe was a toddler, he was always drawing things, making things, and taking things apart to see how they worked.<sup>68</sup> For instance, one day he climbed onto his Uncle Ezra's bed, found a round, brown light switch on a cord beneath the pillow, and took it apart, getting a 110-volt sting he seemed to regard as more interesting than painful.<sup>69</sup> Later Abe joined the Aero Club of Israel, where a young adult counselor was teaching youngsters like him to make model gliders that could fly.<sup>70</sup> Within a year, he was flying models in competitions.<sup>71</sup> Within two years, he was the instructor for his Aero Club chapter.<sup>72</sup> He then knew what he truly wanted to do with his life.<sup>73</sup> He was going to be an aeronautical engineer.<sup>74</sup> From the

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<sup>61</sup> *Id.*

<sup>62</sup> *Id.*

<sup>63</sup> *Id.*

<sup>64</sup> *Id.*

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*

<sup>67</sup> Whittle, *supra* note 39, at 7.

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*, at 8.

<sup>71</sup> *Id.*

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

<sup>74</sup> *Id.*

time he joined the Aero Club in Israel as a boy, Abe had read every book, magazine and newspaper article, and every scholarly paper he could find that had to do with flight.<sup>75</sup>

In 1974, as an aircraft engineer Abe left Israeli Aircraft Industries to set up his own drone business. He had no luck selling his ideas to the Israeli military, Abe took his family and emigrated to the U.S. where he continued to work on his designs.<sup>76</sup> In 1977, to gain a foothold in the U.S. aerospace industry, Abe took a position with a tiny Los Angeles company called Developmental Sciences Inc., which had offered Israel a drone decoy in 1973 and was now working on projects that included a DARPA-funded drone.<sup>77</sup> Abe blamed the earlier design flaws on the fact that most drones had been developed either by modelers accustomed to making toys that were cheap to build and replace or by aerospace corporations.<sup>78</sup> These corporations best people worked on more lucrative products and their drones were designed like target drones, to be expendable, primarily because their customers, the military, expected no better.<sup>79</sup> Abe continued building aircraft in his garage, working with two other believers in drones: Jack Hertenstein, a brainy, bashful radio-control modeler Abe had met at Developmental Sciences, and Jim Machin a pre-med student who'd impressed Abe at a free-flight modeling meet.<sup>80</sup> Moreover, during Abe's brief stay at Developmental Sciences, he had met Ira Kuhn, a technology entrepreneur who visited the company to evaluate its drones on DARPA's behalf.<sup>81</sup>

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<sup>75</sup> *Id.*, at 23

<sup>76</sup> Chris Cole, *Rise of the reapers: A brief history of drones*, DRONE WARS UK, (October 06, 2014) <http://dronewars.net/2014/10/06/rise-of-the-reapers-a-brief-history-of-drones/>

<sup>77</sup> Richard Whittle, *The Man Who Invented the Predator*, AIR & SPACE MAGAZINE, at 2 (April 2013) <http://www.airspacemag.com/flight-today/the-man-who-invented-the-predator-3970502/?no-ist=&page=2>

<sup>78</sup> Whittle, *supra* note 39 at 24.

<sup>79</sup> *Id.*

<sup>80</sup> Whittle, *supra* note 77.

<sup>81</sup> *Id.*

A year later, with the help of Hertenstein and Machin, Abe wheeled out a bizarre, cigar-looking aircraft called the ‘Albatross’ that would change the face of warfare forever.<sup>82</sup> The Albatross was not meant to be an operational drone, just a technology demonstrator.<sup>83</sup> It was not much bigger than a model, and was made mostly of mahogany plywood, spruce, urethane foam, and fiberglass shaped in molds Abe had fabricated himself.<sup>84</sup> The diameter of the fuselage’s bullet-shaped nose measured 300 millimeters, or 11.8 inches, the same as the unvarying chord of its 15-foot wing.<sup>85</sup> The wing sat atop the fuselage, midway between the nose and tail; at its rear end, a small vertical stabilizer 18 inches tall and half as wide pointed straight up.<sup>86</sup> The propeller was powered by a two-stroke, single-cylinder McCulloch 101 go-kart engine.<sup>87</sup> Radio-controlled, the Albatross could take off and land like a regular airplane using detachable landing gear and nose wheel.<sup>88</sup> It also had a parachute for emergency landing.<sup>89</sup>

Notably, Abe’s little drone weighed 105 pounds when totally empty but could carry 95 pounds of fuel, an uncommonly high “fuel fraction” of 47.5 percent, a key feature of aircraft endurance.<sup>90</sup> In addition, it could carry a television camera in its nose.<sup>91</sup> At Dugway Proving Ground in Utah, Abe demonstrated that the Albatross, the world's first Predator, could stay in the air for 56 hours straight.<sup>92</sup> From its humble beginnings in a garage in Los Angeles, Abe's Predator conclusively

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<sup>82</sup> Shaw, *supra* note 31.

<sup>83</sup> Whittle, *supra* note 39 at 25.

<sup>84</sup> *Id.*

<sup>85</sup> *Id.*

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> Whittle, *supra* note 77.

<sup>92</sup> Shaw, *supra* note 31.

altered the arc of military history and promised to affect the lives of millions of people around the world.<sup>93</sup>

Over the years, Predators went through massive changes because of the rapid development of all the surrounding technologies. After the 9/11 attacks on the U.S. World Trade Center the use of drones increased at a rapid rate and became useful tools for surveillance and carefully-targeted killings. Lately, drones are getting ready for the commercial use. For example, Amazon.com is preparing to use domestic drones for commercial purposes.

#### **4. Types of drones**

There are many different types of drones in the unmanned aircraft (UA) family: surveillance drones, marine drones, submarine drones, Nano drones, terrestrial drones, and subterranean drones. The focus of this chapter is solely on the airborne drones used for surveillance and weapons delivery. Experts refer to this technology as UA (Unmanned Aircraft), RPV (Remotely Piloted Vehicle) and ROA (Remotely Operated Aircraft). There are sub-categories such as FPV (First Person View) where the controller is guided by a live video feed from the craft, MAV (Micro Air Vehicle) for the growing swarm of insect-sized flying bots now being perfected in science labs, and MA (Model Aircraft) for the rapidly proliferating band of hobbyists.<sup>94</sup>

As 2017, drone companies orient themselves into three categories: military use; photography use stemming directly from a military reconnaissance heritage; and hobby use, which are still fairly similar, albeit with cheaper and less advanced technology.<sup>95</sup> Military-category drones, including

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<sup>93</sup> *Id.*

<sup>94</sup> Corcoran, *supra* note 28.

<sup>95</sup> Rothstein, *supra* note 3, at 41.

those available for civilian purchase, are easily identified by their expensive and powerful hardware.<sup>96</sup> Drones come in a wide variety of sizes, from those that can be launched by hand to some which require short runways.<sup>97</sup> A UAV system has two parts, the drone itself and the control system.<sup>98</sup>

### A. Surveillance drones

Drones are capable of highly advanced surveillance, and drones used by law enforcement agencies can carry various types of equipment such as live-feed video cameras, infrared cameras, heat sensors, and radar.<sup>99</sup> A typical drone is made of light composite materials to reduce weight and increase maneuverability.<sup>100</sup> The composite material strength allows it to cruise at extremely high altitudes.<sup>101</sup> Some military versions can stay airborne for hours or days at a time, and their high-tech cameras can scan entire cities, or alternatively, zoom in and read a milk carton from 60,000 feet.<sup>102</sup> Drones can also carry Wi-Fi crackers and fake cell phone towers that can determine your location or intercept your texts and phone calls.<sup>103</sup> The convergence of other technologies it may make possible machine recognition of faces, behaviors, and the monitoring of individual conversations.<sup>104</sup>

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<sup>96</sup> *Id.*

<sup>97</sup> Shalem Pravas, *Aerial Assassins: Drones*, READ & DIGEST, (accessed Sept. 1, 2015) <http://readanddigest.com/what-is-a-drone/>

<sup>98</sup> *Id.*

<sup>99</sup> *Surveillance Drones*, ELECTRONIC FRONTIER FOUNDATION <https://www EFF.ORG/issues/surveillance-drones>

<sup>100</sup> Pravas, *supra* note 97.

<sup>101</sup> *Id.*

<sup>102</sup> *Surveillance Drones*, *supra* note 97.

<sup>103</sup> *Id.*

<sup>104</sup> Chris Cole & Jim Wright, *What are drones?*, DRONE WARS U.K. (January 20, 2010) <http://dronewars.net/aboutdrone/>

Drones are a massive technological achievement, and the above-mentioned features of drones could be a great boon to human society. However, they also carry the potential threats to the safety and privacy of people. For example, Northrop Grumman's RQ-4 Global Hawk, with a range of 10,000 miles, the largest drone, cruises at high altitude and can loiter over an area for up to 30 hours.<sup>105</sup> The drone produces high-quality surveillance images using its suite of sensors.<sup>106</sup> Their advanced features and the dearth of laws regulating the operation of drones presents a unique threat to privacy.

## **B. Armed drones**

Armed drones quickly became one of the U.S. military's primary weapons as the U.S. counterterrorism shifted from engaging in traditional, specified armed conflicts to targeting and killing individuals regardless of their location.<sup>107</sup> For example, the MQ-1B Predator is an armed, multi-mission, medium-altitude, long-endurance remotely piloted aircraft employed primarily as an intelligence-collection asset and secondarily against dynamic execution targets.<sup>108</sup>

On February 16, 2001, US Air Force officials with test pilot Curt Hawes, at Indian Springs Airfield in the Nevada desert, tested a Predator drone to hit an empty tank sitting on the ground a few hundred meters away.<sup>109</sup> This was the first ever weapon launch from a Predator drone and the

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<sup>105</sup> Karl Tate, *How Unmanned Drone Aircraft Work*, LIVE SCIENCE, (June 27, 2013) <http://www.livescience.com/37815-how-unmanned-drone-aircraft-work-infographic.html>

<sup>106</sup> *Id.*

<sup>107</sup> *Understanding Drones*, FRIENDS COMMITTEE ON NATIONAL LEGISLATION, (accessed on May 3, 2017) <https://www.fcnl.org/updates/understanding-drones-43>

<sup>108</sup> *MQ-1B Predator*, MILITARY.COM, (accessed on May 3, 2017) <http://www.military.com/equipment/mq-1b-predator>

<sup>109</sup> Cole, *supra* note 76.

officials present expressed their delight. According to Major Ray Pry, overseeing the tests, the missile “made a big, grey dent in the turret just beautiful.”<sup>110</sup> He went on to say:

“We showed that (Bin Laden) video to the secretary of the Air Force, the chief of staff of the Air Force and the assistant vice chief and someone mentioned, ‘Let me take Hellfire’” a lightweight anti-tank missile that could be laser-guided onto its target “‘quick, black, and dirty.’”<sup>111</sup> That direction was given, so we moved money and notified Congress.”<sup>112</sup>

The CIA had developed the Predator as a spying platform.<sup>113</sup> The comment ‘quick, black, and dirty’ meant that the Predator would be on the fast-track, fully funded, and undercover as far as oversight was concerned, the rush was on to turn it into an assassination tool.<sup>114</sup> The Air Force put a laser-targeting device, called the ball, on the Predator.<sup>115</sup> The ball, shines a laser beam on the target so jet fighters can drop laser-guided bombs that home in on it.<sup>116</sup> Air Force Chief of Staff General John Jumper said, “this is a breakthrough. It turns the Predator, from just a pure surveillance system into something that actually, now, directs weapons on the targets.”<sup>117</sup> The Global Hawk’s Allison Rolls-Royce turbofan engine has 7,050 lbs. (3,200 kg) thrust.<sup>118</sup>

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<sup>110</sup> *Id.*

<sup>111</sup> Chris Woods, *The story of America’s very first drone strike*, THE ATLANTIC, (May 30, 2015) <http://www.theatlantic.com/international/archive/2015/05/america-first-drone-strike-afghanistan/394463/>

<sup>112</sup> *Id.*

<sup>113</sup> *Id.*

<sup>114</sup> *Id.*

<sup>115</sup> David Kohn, *The Predator*, CBS NEWS, (January 07, 2003) <http://www.cbsnews.com/news/the-predator/>

<sup>116</sup> *Id.*

<sup>117</sup> *Id.*

<sup>118</sup> Tate, *supra* note 105.

A sensor suite includes synthetic aperture radar, electro-optical sensors, and infrared sensors.<sup>119</sup> At the other end of the size spectrum, the RQ-11 Raven is so tiny, a soldier can heave it into the air one-handed.<sup>120</sup> Once airborne, the Raven has a range of 7.45 miles (12 km).<sup>121</sup> The Predator is an armed drone.

### C. Hobbyist drones

Differing from armed drones, hobbyist drones include those that are readily available for purchase generally for no more than a few thousand dollars.<sup>122</sup> These systems may either be pre-assembled or assembled from component parts and do not require formal infrastructure or training to operate.<sup>123</sup> After 2010, hobbyist drones began exploded in popularity.<sup>124</sup> These machines come in a wide range of prices and with a wide range of features, allowing you to choose the drone that best matches your skill level and goals.<sup>125</sup> The Phantom II drones have set the bar so low that anyone with a passing interest in the hobby can afford to buy one, and can figure out how to fly it within a few minutes.<sup>126</sup> It is becoming the iPod of drones, the thing that has taken them completely mainstream.<sup>127</sup> Between 2011 and 2013, SZ DJI Technology Co., the largest

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<sup>119</sup> *Id.*

<sup>120</sup> *Id.*

<sup>121</sup> *Id.*

<sup>122</sup> Kelley Saylor, *Foreword by Paul Scharre and Ben Fitzgerald, A WORLD OF PROLIFERATED DRONES: A TECHNOLOGY PRIMER*, at 8, (June 2015) available [http://www.cnas.org/sites/default/files/publications-pdf/CNAS%20World%20of%20Drones\\_052115.pdf](http://www.cnas.org/sites/default/files/publications-pdf/CNAS%20World%20of%20Drones_052115.pdf)

<sup>123</sup> *Id.*

<sup>124</sup> *Id.*, at 11.

<sup>125</sup> *Top 10 Drones for 2015*, *supra* note 18.

<sup>126</sup> Jason Kiebler, *The World's Most Popular Drone is a Magnet for Reckless Pilots*, MOTHERBOARD (July 31, 2014) <http://motherboard.vice.com/read/the-worlds-most-popular-drone-is-a-magnet-for-reckless-pilots>

<sup>127</sup> *Id.*

manufacturer of hobbyist drones, saw an almost 3,000 percent increase in annual revenue – to \$130 million.<sup>128</sup> Fun, durability, and adaptability are all major selling points.<sup>129</sup>

Names such as Lily (around \$700 on pre-order) and Nixie, they are capable of recording breathtaking video footage and trailing adventure travelers across bridges and streams, down ski slopes and into secluded gardens.<sup>130</sup> Nixie, which you can wear on your wrist until you want to fling it off for a photo or video, has a “boomerang mode” that allows it to fly back to you as if it were a trained raptor.<sup>131</sup> A promotional video for Lily shows a man with a backpack lobbing the drone like a stone over a bridge and casually walking away, only to have the thing float up and follow him.<sup>132</sup> Hobbyist drones are becoming a major challenge for governments in protecting the privacy rights and the safety concerns of individuals in countries like U.S., U.K. and European countries.

## **5. Technology used in drones and their capabilities**

Before learning about the legal aspects governing drones, it is important to discuss the relevant technology used in different types of drones for a better understanding of their legality. The key difference between humans on the ground and a drone hovering above is that humans must distinguish and make decisions instantly. In contrast, drones give commanders “tactical patience” - the ability to see, think, and act in a controlled manner.

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<sup>128</sup> Saylor, *supra* note 122 at 11.

<sup>129</sup> Rothstein, *supra* note 3 at 43.

<sup>130</sup> Stephanie Rosenbloom, *The Selfie-Drone: Invasion of the Vacation Snatchers*, THE NEW YORK TIMES, (August 31, 2015) <http://www.nytimes.com/2015/09/06/travel/selfie-camera-drones.html>

<sup>131</sup> *Id.*

<sup>132</sup> *Id.*

This section discusses the technologies used in surveillance, armed and hobbyist drones in detail. Surveillance drones has optically enhanced imaging, synoptic viewing, listening-in capability, sense-through-the walls, multi-sensor data-fusion and facial recognition features. Armed drone has added feature of MMW radar seeking technology and drone control system. Finally, hobbyist drone architecture is identical to a military drone, even if built from hobbyist kits.<sup>133</sup> The best drones, however, have certain features in common.<sup>134</sup>

#### **A. Technology used in surveillance drones and their capabilities**

Drones are equipped with a variety of rotor configurations. Drones available for commercial sale tend to be of quadrotor or other multirotor configurations, which are much cheaper and easier to fly than helicopters, and have greater flight-hover capabilities than fixed-wing aircraft.<sup>135</sup> The quadrotor configuration is a relatively recent innovation.<sup>136</sup>“When you have multiple rotors, you get a lot of really interesting benefits.”<sup>137</sup> For instance, having more than one propeller gives drones more fail-safe options.<sup>138</sup> If one of the rotors fails, the aircraft can still stay aloft with the remaining rotors working in concert to compensate.<sup>139</sup> In addition, the more rotors you have, the more lift an aircraft will generate, allowing it to carry a heavier payload, something that comes in handy when you’re attaching a camera to a drone.<sup>140</sup>

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<sup>133</sup> Rothstein, *supra* note 3 at 43.

<sup>134</sup> *Top 10 Drones for 2015*, *supra* note 18.

<sup>135</sup> Rothstein, *supra* note 3 at 36.

<sup>136</sup> *Id.*

<sup>137</sup> John Patrick Pullen, *This is How Drone Works*, TIME, (April 3, 2015)<http://time.com/3769831/this-is-how-drones-work/>

<sup>138</sup> *Id.*

<sup>139</sup> *Id.*

<sup>140</sup> *Id.*

## I. Optically Enhanced Imaging

Image intensification technology widely employed in “night-vision goggles” amplifies visible wavelength light using a solid-state photocathode device.<sup>141</sup> In addition, digital imaging sensors may be constructed that are sensitive to non-visible wavelengths such as ultra-violet or infrared light.<sup>142</sup> Surveillance drones are equipped with sophisticated imaging technology that provides the ability to obtain detailed photographs of terrain, people, homes, and even small objects.<sup>143</sup> Gig-pixel cameras used to outfit drones are among the highest definition cameras available, and can “provide real-time video streams at a rate of 10 frames a second.”<sup>144</sup> On some drones, operators can track up to 65 different targets across a distance of 65 square miles.<sup>145</sup>

## II. Synoptic viewing

The notion of “wide-area surveillance” allows an operator to see everything, all the time.<sup>146</sup> Equipped with such systems of synoptic imagery, a drone has at its disposal not just one but dozens of high-resolution micro-cameras facing in every direction, like the multiple facets of the eye of a fly.<sup>147</sup> Such drones provide synoptic coverage of an area and the capability to zoom in to track and

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<sup>141</sup> Harry Montoro, *Image Intensification: The Technology of Night Vision*, EDU. PHOTONICS.COM,(accessed on May 3, 2017)<https://www.photonics.com/EDU/Handbook.aspx?AID=25144>

<sup>142</sup> GLOBALSECURITY.ORG MILITARY SYSTEMS,<http://www.globalsecurity.org/military/systems/ground/nvg.htm>

<sup>143</sup> *Domestic Unmanned Aerial Vehicles (UAVs) and Drones*, EPIC. ORG,(accessed September 1, 2015)<https://epic.org/privacy/drones/#resources>

<sup>144</sup> *Id.*

<sup>145</sup> *Id.*

<sup>146</sup> Chamayou, *supra* note 15, at 38.

<sup>147</sup> *Id.*

follow multiple activities or actors, cue and tip other sensors, and build an integrated understanding of an area's pattern of life.<sup>148</sup>

A software system can aggregate the various images in real time into a single overall view that could be seen in detail when necessary.<sup>149</sup> The result would be the equivalent of a high-resolution satellite image, on the scale of an entire town or region, but transmitted both live and in streaming video.<sup>150</sup> The teams of operators can zoom in on a particular area or a particular individual at any time.<sup>151</sup> Equipped with such a system, the technology of a single hovering machine is the equivalent of a network of video surveillance cameras positioned over an entire town.<sup>152</sup>

### III. Listening-in capability

The technology of acoustical eavesdropping capability can be effectively implemented on perch-and-stare drones. The perch-and-stare approach involves a drone capable of landing on a building or wall to observe for an extended period and then re-launching.<sup>153</sup> The perch-and-stare capability may also include acoustical reception using a conventional microphone or a laser-optical microphone to surreptitiously record conversations.

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<sup>148</sup> Pasi Vallaho, *Biopolitical Screens: Image, Power, and the Neoliberal Brain*, (July 25, 2014)[https://books.google.com/books?id=QYcRBAAAQBAJ&dq=synoptic+viewing+in+drones&source=gbs\\_navlinks\\_s](https://books.google.com/books?id=QYcRBAAAQBAJ&dq=synoptic+viewing+in+drones&source=gbs_navlinks_s)

<sup>149</sup> Chamayou, *supra* note 15 at 38.

<sup>150</sup> *Id.*

<sup>151</sup> *Id.*

<sup>152</sup> *Id.*

<sup>153</sup> *Institute of Design, Robotics and Optimisation*, UNIVERSITY OF LEEDS <http://www.engineering.leeds.ac.uk/idro/research/biomechatronics-and-robotics/exploration-robotics/current-research/perch-and-stare.shtml>

Acoustical systems function by day and by night while laser systems function on wavelengths not easily visible to humans. No physical trespass is necessary to record the sounds from inside a structure. The usable range of these devices may approach 1000 feet, allowing the drone to remain “off-premises” while recording.<sup>154</sup> According to National Public Radio reports the technology of laser microphones (separate from drones) were used in the surveillance leading to the death of noted terrorist Osama bin Laden.<sup>155</sup>

As technology is evolving day by day, hopefully 1000 feet listening capability will turn into 1000’s of mile and so the civilian casualties can be bought down to minimum. For instance, near Miranshah, Pakistan a drone strike on tribal people left at least 40 civilians killed.<sup>156</sup> The victims were believed to be civilians attending a tribal meeting near the regional capital.<sup>157</sup> According to the tribesmen, their meeting was being held to discuss a local land dispute over the ownership of chromite deposits in the area.<sup>158</sup> They say that no militants were present at the time.<sup>159</sup> Most of the dead were elders, local traders and members of the tribal police.<sup>160</sup> The ununiformed guards surrounded the tribal officers with weapons in their hand. These guards were likely mistaken as militants. The ground troops could have launched the attack. However, this is problematical because ground troops do not understand the language and culture of locals in that region. This situation may have been avoided by employing the technology of the listening-in

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<sup>154</sup> *Best Laser Microphones*, <http://www.bestlasermicrophones.com/ourproduct.html>

<sup>155</sup> *CIA Used Satellites To Prep For Bin Laden Raid*, (May 4, 2011) <http://www.npr.org/2011/05/04/135995089/cia-used-satellites-to-prep-for-bin-laden-raid>

<sup>156</sup> *US drone strike 'kills 40' in Pakistani tribal region*, BBC, (March 17, 2011) <http://www.bbc.com/news/world-south-asia-12769209>

<sup>157</sup> *Id.*

<sup>158</sup> *Id.*

<sup>159</sup> *Id.*

<sup>160</sup> *Id.*

capability of the drone and then interpreting the language with the help of translators. This technology could save lives.

#### **IV. Sense-Through-The-Walls – Imaging Radar**

The press has reported on what is colloquially known as Sense-through-the-wall (STTW) technology. Imaging radar uses radio-frequency transmission and reception technology to produce detailed images at great distances through smoke, haze, and other opaque media. Recent advances have miniaturized this technology while other advances allow radar to create three-dimensional renderings of optically hidden objects. Imaging radar can look “through multiple walls and even penetrate whole buildings.”<sup>161</sup> A cooperative system involving a single transmitter with distributed receivers can provide intelligence on the configuration, content, and human presence inside enclosed areas and buildings.<sup>162</sup>

#### **V. Multi-sensor Data-fusion**

Data-fusion methods can combine inputs from multiple sources to enhance surveillance capability. The media portrays the military as actively funding the development of drones that “won’t just be able to look at what you do.”<sup>163</sup> They’ll be able to recognize your face and track you, based on how you look.”<sup>164</sup> This reflects the rapidly developing field of soft biometrics, the science of automatically recognizing people based on physical or behavioral characteristics such as face,

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<sup>161</sup> William Saletan, *Nowhere to Hide: Killer Drones That Can See Through Walls*, SLATE (Sept. 17, 2008), [http://www.slate.com/articles/health\\_and\\_science/human\\_nature/2008/09/nowhere\\_to\\_hide.html](http://www.slate.com/articles/health_and_science/human_nature/2008/09/nowhere_to_hide.html)

<sup>162</sup> *Id.*

<sup>163</sup> Noah Shachtman, *Army Tracking Plan: Drones That Never Forget a Face*, WIRED,(September 28, 2011)<https://www.wired.com/2011/09/drones-never-forget-a-face/>

<sup>164</sup> *Id.*

fingerprint, iris, hand, voice, gait, and signature.<sup>165</sup> Facial recognition systems are built on computer programs that analyze images of human faces for the purpose of identification.<sup>166</sup> Unlike many other biometric systems, facial recognition can be used for general surveillance in combination with public video cameras, and it can be used in a passive way that doesn't require the knowledge, consent, or participation of the subject.<sup>167</sup>

## VI. Facial recognition software

Soft biometric systems can identify targets based on human descriptions and traits including height, weight, body geometry, scars, marks, tattoos, and gender, etc.<sup>168</sup> The biggest danger is that this technology will be used for general, suspicion-less surveillance systems.<sup>169</sup> Time will tell if “soft biometric” algorithms that assemble a mix of inputs from optical and other sources to keep track of targets for up to 750 feet away or more remain the subject of research grants or become practical products.<sup>170</sup> Drones equipped with facial recognition software, infrared technology, and speakers capable of monitoring personal conversations could cause unprecedented invasions of individual privacy rights.<sup>171</sup> Interconnected drones could enable mass tracking of vehicles and people in wide areas.<sup>172</sup> Tiny drones could go completely unnoticed while peering into the window of a home or place of worship.<sup>173</sup>

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<sup>165</sup> Anil Jain & Ajay Kumar, *Biometrics of Next Generation: An Overview*, SPRINGER(2010)<https://www.scribd.com/document/273208372/Biometrics-of-Next-Generation-An-Overview>

<sup>166</sup> *Face Recognition Technology*, ACLU, (accessed September 1, 2015)<https://www.aclu.org/issues/privacy-technology/surveillance-technologies/face-recognition-technology>

<sup>167</sup> *Id.*

<sup>168</sup> *Handbook of Statistics: Machine Learning: Theory and Applications*, at 327

<sup>169</sup> *Face Recognition Technology*, *supra* note 166.

<sup>170</sup> Schachtman, *supra* note 163.

<sup>171</sup> *Domestic Drones*, ACLU, (accessed September 1, 2015)<https://www.aclu.org/issues/privacy-technology/surveillance-technologies/domestic-drones>

<sup>172</sup> *Id.*

<sup>173</sup> *Id.*

## B. Technology used in armed drones & their capabilities

Before learning about the legal aspects governing drones, it is important to discuss the relevant technology used in armed drones for a better understanding of their legality. The key difference between human soldiers on the ground and a drone hovering above is that humans must distinguish and make targeting decisions instantly. In contrast, drones give commanders “tactical patience” - the ability to see, think, and act in a controlled manner. A crew controls drones often miles away from the dangers of combat, and can act as both a combatant and a combat support vehicle in the hairiest of battles.<sup>174</sup>

Drones combine several complimentary technologies on a single platform.<sup>175</sup> For example, a single drone can contain highly advanced surveillance systems, live-feed video cameras, infrared cameras, thermal sensors and radar, and various types of other equipment including global positioning systems (GPS), and precision munitions.<sup>176</sup> The high-tech cameras on drones can scan entire cities, or alternatively, zoom in and read a milk carton from 60,000 feet.<sup>177</sup> Surveillance data gathered by a drone can be relayed to satellites that then send it down to ground forces to help form attack strategies and identify enemy vulnerabilities.<sup>178</sup> Armed drones carry highly accurate missiles that have the capacity to target individuals, automobiles, and sections of structures such

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<sup>174</sup> Robert Valdes, *How the Predator UAV Works*, HOW STUFF WORKS, (April 1, 2004) <http://science.howstuffworks.com/predator.htm>,

<sup>175</sup> James Igoe Walsh, *The Effectiveness of Drone Strikes in Counterinsurgency and Counter Terrorism Campaigns*, STRATEGIC STUDIES INSTITUTE AND U.S. ARMY WAR COLLEGE PRESS, V (September 2013)

<sup>176</sup> *Surveillance Drones*, *supra* note 99.

<sup>177</sup> *Id.*

<sup>178</sup> Pravas, *supra* note 97.

as rooms in a large house.<sup>179</sup> These missiles can be guided by the intelligence obtained by the sensors discussed above or through real-time, on-ground intelligence.<sup>180</sup>

Drones' low profile and relative fuel efficiency combine to permit them to spend more time on target than any other manned aircraft.<sup>181</sup> Some military drones can stay airborne for hours or days at a time.<sup>182</sup> Drones also carry Wi-Fi crackers and can act as fake cell phone towers to determine a target's location or intercept texts and phone calls.<sup>183</sup> Given the ongoing convergence of drones and emerging technologies, it may even become possible for drones to perform facial recognition, identify behavior patterns, and monitor individuals' conversations.<sup>184</sup>

### **I. MMW radar seeking technology**

A Hellfire weapon is a fire-and-forget *weapon, so called because it is* equipped with millimeter-wave (MMW) radar-seeking technology: once fired it requires no further guidance because it can lock-on to its target after launch. It does not require either a remote controller or line-of-sight. You have probably seen these demonstrated in movies where the pilot yells, "It locked onto me!" and then he must take drastic evasive action to avoid it. Fortunately, Hellfire weapons do not make u-turns very well, so an alert pilot can sometimes out-maneuver it.

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<sup>180</sup> Walsh, *supra* note 175.

<sup>180</sup> Valdes, *supra* note 148.

<sup>182</sup> Surveillance Drones, *supra* note 99.

<sup>183</sup> *Id.*

<sup>184</sup> Cole & Wright, *supra* note 104.

## II. Drone Control System Technology

A general component model of a standard drone consists of the “drone base system” and is the foundation of the drone linking together its components.<sup>185</sup> It is needed to allow inter-component communication and controls the sensor, navigation, avionic and communication systems.<sup>186</sup> It may be considered as an drone “operating system.”<sup>187</sup> The base system also allows the integration of further optional components such as special sensors or weapon systems.<sup>188</sup> The drone sensor system consists of the sensory equipment of the drone together with integrated pre-processing functionalities.<sup>189</sup> For common military drones these sensors are often cameras with different capabilities.<sup>190</sup> Drones may be equipped with further sensors, such as INS, GPS and radar.<sup>191</sup> The drone avionic system is responsible for the conversion of received control commands to commands of the engine, flaps, rudder, stabilizers and spoilers.<sup>192</sup> The in-flight communication of drones is always wireless and may be divided into two types: a) direct, line-of-sight (LOS) communication and b) indirect mostly satellite communication (SATCOM).<sup>193</sup>

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<sup>185</sup> Podins, Stinissen, Maybaum (Eds.), *5th International Conference on Cyber Conflict, The Vulnerability of UAVs to Cyber Attacks - An Approach to the Risk Assessment*, NATO CCD COE Publications, Tallinn at 4, (2013) [https://ccdcoe.org/cycon/2013/proceedings/d3r2s2\\_hartmann.pdf](https://ccdcoe.org/cycon/2013/proceedings/d3r2s2_hartmann.pdf)

<sup>186</sup> *Id.*

<sup>187</sup> *Id.*

<sup>188</sup> *Id.*

<sup>189</sup> *Id.*

<sup>190</sup> *Id.*

<sup>191</sup> *Id.*

<sup>192</sup> *Id.*

<sup>193</sup> *Id.*

### C. Technology used in hobbyist drones & their capabilities

The drone architecture is identical to a military drone, even if built from hobbyist kits.<sup>194</sup> The best drones, however, have certain features in common.<sup>195</sup> For instance, they should come with a camera or camera mounts, and boast proven stability control.<sup>196</sup> In addition, features that allow them to be found easily, that keep them flying straight, and that allow them to receive positive reviews for durability and reliability are all must-haves.<sup>197</sup>

Many commercial off-the-shelf drones including the best-selling model, the DJI Phantom, are now equipped with GPS and waypoint navigation systems.<sup>198</sup> These systems enable the drone to accurately determine and hold its position, in turn removing the need for line-of-sight communications and allowing for autonomous flight.<sup>199</sup> In the event that the operator loses contact with the system, this feature can return the drone to a predetermined location.<sup>200</sup> Moreover, the next generation of drones does not require users to hold remote controllers: They are hands-free.<sup>201</sup> The user simply tosses it in the air, and the drone will follow the user.<sup>202</sup>

### 6. Technological advantages of drones

Drones have distinct advantages over manned aircraft vehicles, cruise missiles, and Special Operations attacks.<sup>203</sup> A typical drone is made of light composite materials to reduce weight and

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<sup>194</sup> Rothstein, *supra* note 3 at 43.

<sup>195</sup> *Top 10 Drones for 2015*, *supra* note 18.

<sup>196</sup> *Id.*

<sup>197</sup> *Id.*

<sup>198</sup> Saylor, *supra* note 122 at 11.

<sup>199</sup> *Id.*

<sup>200</sup> *Id.*

<sup>201</sup> Rosenbloom, *supra* note 130.

<sup>202</sup> *Id.*

<sup>203</sup> *Id.*

increase maneuverability.<sup>204</sup> Drones can fly at extremely high altitudes to avoid detection.<sup>205</sup> Their navigational systems can be programmed to operate autonomously, from takeoff to landing.<sup>206</sup> The use of drones actually permits for far greater precision in targeting than most other traditional manned aircrafts.<sup>207</sup> Further, drones can handle what humans cannot: G-Force speed, tedium, and boredom.<sup>208</sup> Among the other “intrinsic benefits” of drones: they deprive the enemy of human targets; they don’t get tired, thirsty, or hungry; and are relatively inexpensive.<sup>209</sup> Without a doubt, drones are of great benefit to the counterterrorism effort.<sup>210</sup>

Additionally, the recon ability of drones is a distinct advantage. Armed drones use similar technology to surveillance drone technology with the added feature of armature. Their cameras make them just as capable of a reconnaissance mission as any military drone.<sup>211</sup> However, there are some other features required to control the armed drones. These high-tech aircraft, controlled by some crew miles away from the dangers of combat, are capable of reconnaissance, combat and support roles in the hairiest of battles.<sup>212</sup> The drones are equipped with multiple, complementary technologies combined on a single platform. Armed drones carry highly accurate missiles that have the capacity to target individuals, automobiles, and sections of structures such as rooms in a

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<sup>204</sup> Pravas, *supra* note 97.

<sup>205</sup> *Id.*

<sup>206</sup> Kenneth R. Himes, *OFM*, DRONES AND THE ETHICS OF TARGETED KILLING, 12 (2016)

<sup>207</sup> Rosa Brooks, *The Constitutional and Counterterrorism Implications of Targeted Killing: Hearing Before the S. Judiciary Subcomm. On the Constitution, Civil Rights, and Human Rights*, 113TH CONG., 2 (April 23, 2013) (Statement by Professor Rosa Brooks, Geo. U. L. Center), <http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1114&context=con>

<sup>208</sup> Alan W. Dowd, Drone Wars: Risks and Warnings

(2013) [http://ssi.armywarcollege.edu/pubs/Parameters/Issues/WinterSpring\\_2013/1\\_Article\\_Dowd.pdf](http://ssi.armywarcollege.edu/pubs/Parameters/Issues/WinterSpring_2013/1_Article_Dowd.pdf)

<sup>209</sup> *Id.*

<sup>210</sup> Himes, *supra* note 206.

<sup>211</sup> Rothstein, *supra* note 3.

<sup>212</sup> Valdes, *supra* note 174.

large house.<sup>213</sup> Missiles are guided by the intelligence attained by the above-discussed sensors or by real time on the ground intelligence.

Another benefit of drones is the reduction in the numbers of soldiers taken captive. In a worst-case scenario, if a Predator is lost in battle, military personal can simply "crack another one out of the box" and have it up in the air shortly without the trauma of casualties or the fear of pilots becoming prisoners as is normally associated with an aircraft going down.<sup>214</sup> They are equipped with state of the art infra-red cameras, Global Positioning Systems (GPS), laser or GPS guided missiles and other top-secret systems.<sup>215</sup>

Drones can handle what humans cannot, such as G forces and speed, tedium and boredom.<sup>216</sup> Among the other "intrinsic benefits" of drones: they deprive the enemy of human targets; they don't get tired or thirsty or hungry; they are relatively inexpensive; and with the coming of nuclear-powered drones, they offer the possibility of nearly endless above-target operation.<sup>217</sup> There are many benefits in using drone technology.

## **7. Technological constraints**

Weighing against the benefits of using drones are the technological constraints. This section explores the constraints of drone technology such as human risk factor, risk of cyber-attack and use of drones for terrorism. There are a number of technological means of ensuring safety and

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<sup>213</sup> Walsh, *supra* note 175.

<sup>214</sup> Valdes, *supra* note 174.

<sup>215</sup> Pravas, *supra* note 97.

<sup>216</sup> Dowd, *supra* note 208.

<sup>217</sup> *Id.*

accountability of drones.<sup>218</sup> For example, detect-and-avoid technology to prevent crashing; return-to-base functionality to prevent lost drones; information-assurance mechanisms to prevent hacking; and possible tools to allow for identification of drones, such as radio-frequency identification (RFID) tags or registration numbers.<sup>219</sup> Despite these means, the technology poses conundrums for regulators in assessing risk.<sup>220</sup> For example, drones rely on shared, non-secure radio frequencies, which means that the radio link between grounds-based controller and drone can be interrupted.<sup>221</sup> Regulators worry about what could happen.<sup>222</sup> Some manufacturers are addressing this by programming drones to hover while waiting for the link to be re-established and, if not, returning to home base after a set period.<sup>223</sup>

The technology is probably too complicated for the non-aviation customers who might find use for it.<sup>224</sup> The Federal Aviation Authority (FAA) require any of these systems for domestic drone flight, the market and cost of hobby and commercial drones could change considerably.<sup>225</sup> One of the reasons that drones are appealing is that they are low in cost and easy to purchase.<sup>226</sup> Mandating that drones contain more sophisticated technology will drive up their cost and likely will affect smaller media outlets' ability to use them for newsgathering.<sup>227</sup> However, regulators and manufacturers continue to search for solutions.<sup>228</sup>

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<sup>218</sup> Nabihah Syed & Michael Berry, *Journo-Drones: A Flight over the Legal Landscape*, COMMUNICATIONS LAWYER, VOL. 30, NO. 3, (June 2014) [http://www.lskslaw.com/documents/CL\\_Jun14\\_v30n4\\_SyedBerry.pdf](http://www.lskslaw.com/documents/CL_Jun14_v30n4_SyedBerry.pdf)

<sup>219</sup> *Id.*

<sup>220</sup> Bob Hazel & Georges Aoude, *In Commercial Drones the Race is on*, at 8

<sup>221</sup> *Id.*

<sup>222</sup> *Id.*

<sup>223</sup> *Id.*

<sup>224</sup> *Id.*

<sup>225</sup> Syed & Berry, *supra* note 218.

<sup>226</sup> *Id.*

<sup>227</sup> *Id.*

<sup>228</sup> Hazel & Aoude, *supra* note 220.

Further, technology is not the only constraint. The biggest constraint is the human risk factor such as hostile intent or negligence. This constraint is challenging to quantify, as it underscores the fact that humans and not fully autonomous robots pilot drones.<sup>229</sup> Characterizing risk on physical vehicles and systemic operating controls is achievable.<sup>230</sup> Many think that drones may be flown like driving a car. However, flying a drone is more complicated. Drones are capable of quickly flying out of the operator's line of sight where it can encounter all sorts of obstacles. As an example, in the wildfires burning in Northern California in the summer of 2015, hobby drones were reportedly hampering the flight safety of fire-fighting helicopters.

Military drones are constrained because they are vulnerable to cyber-attack. Foreign governments such as China are persistent collectors of military secrets and intellectual property. Cyber espionage is a common practice and various data breaches were denounced in 2012 that could have a great impact also on the security of these complex machines.<sup>231</sup> Cyber-attacks, network exploits, and malware-based attacks are all methods to steal industrial secrets on special projects, and Unmanned Aerial Vehicle technologies are among the most targeted.<sup>232</sup> The vehicles are equipped with high technology components; each system could be potentially subject to cyber-attack with serious repercussions.<sup>233</sup>

One of the biggest risk for military security experts involves the hijacking of a drone by a remote attacker that could gain the access to the vehicle and use it against the forces that manage

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<sup>229</sup> Melissa Hersh & Michael Hopmeier, *Drones: In Technology We Trust*, THE NATIONAL INTEREST, (September 2015)<http://nationalinterest.org/feature/drones-technology-we-trust-13829>

<sup>230</sup> *Id.*

<sup>231</sup> Pierluigi Paganini, *Hacking Drones... Overview of the Main Threats*, INFOSEC INSTITUTE, (June 4, 2013)<http://resources.infosecinstitute.com/hacking-drones-overview-of-the-main-threats/>

<sup>232</sup> *Id.*

<sup>233</sup> *Id.*

it.<sup>234</sup> For example, in 2011, the Iranians claimed victory when they reportedly hacked a RQ-170 Sentinel stealth drone that was being reportedly operated by the U.S. Central Intelligence Agency (CIA).<sup>235</sup> This claim was implicitly confirmed by a press statement by President Obama, asking for the return of the drone.<sup>236</sup>

Another constraint is that terrorists can use drones for cyber-attack. German insurer Allianz, in a review of aviation safety publication said, “Cyber terrorism may replace the hijacker and bomber and become the weapon of choice on attacks against the aviation community.”<sup>237</sup> A new magazine titled “Azan” set up by Islamist radicals in Afghanistan and Pakistan is appealing to Muslims militants to develop new methods to disturb US drone operations.<sup>238</sup>

## 8. Conclusion

This chapter discussed the evolution of drones, including definition of drones, historical background, and the birth of predator drones. The second part of this chapter discussed three types of drones; followed by technologies used in different types of drone, and their capabilities. Discussion of technology is important because a drone can carry out its function with the help of these technologies. These functions cause various legal challenges for drone operators. This chapter will help in developing legal analysis of drones in the following chapters.

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<sup>234</sup> *Id.*

<sup>235</sup> Kevin Coleman & Silver Rhino, *How vulnerable are UAVs to cyber-attack?* C4ISR & NETWORKS, (February 23, 2015) <http://www.c4isrnet.com/story/military-tech/blog/net-defense/2015/02/23/drones-cyber-attack-threat/23883185/>

<sup>236</sup> Podins, Stinissen, & Maybaum, *supra* note 185.

<sup>237</sup> Jonathan Gould & Victoria Bryan, *Cyber-attacks, drones increase threat to plan safety: insurer*, REUTERS, (December 4, 2014) <http://www.reuters.com/article/2014/12/04/us-insurance-airlines-safety-idUSKCN0JI1G120141204>

<sup>238</sup> Podins, Stinissen, & Maybaum, *supra* note 185.

## Chapter 2: Legal Status of Drones Under LOAC and International Law

### 1. Introduction

In the twenty-first century, the use of drones in military combat operations is one of the most legally controversial issues confronting IHL and LOAC.<sup>1</sup> This chapter argues that drones should be treated as any other component of the U.S. arsenal. A drone can be a weapons platform or singular weapon system. This chapter further argues that drones indeed offer extensive and enhanced opportunities for compliance with LOAC and other relevant laws governing the use of certain weapons. Particularly, drones are well suited to execute theories of self-defense in international affairs. Drones can be used for a wide variety of tasks other than kinetic operations, such as: observation and reconnaissance, intelligence collection, target acquisition, search and rescue, delivery of humanitarian aid, and transportation of equipment.<sup>2</sup>

The appearance of new and advanced weapons in warfare is hardly a new challenge in the history of armed conflict.<sup>3</sup> The epic poem Mahabharatha, [200 B.C.-200 A.D.] forbids the use of ‘hyper-destructive’ weapons: the warrior Arjuna, observing the law of war, refrained from using the *pasupathastra*<sup>4</sup> because when the fight was restricted to ordinary conventional weapons, the

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<sup>1</sup> Michael W. Lewis, *Drones and the Boundaries of the Battlefield*, 47 TEX. INT'L L. J. 294 (2011-12).

<sup>2</sup> David Turns, *Droning on: some international humanitarian law aspects of the use of unmanned aerial vehicles in contemporary armed conflicts*, at 199 (2014).

<sup>3</sup> Rayan J. Vogel, *Drone Warfare and the Law of Armed Conflict*, 39 DENV. J. INT'L L. & POL'Y, 103 (2010-2011).

<sup>4</sup> *Generally see*, Section XL, <http://www.sacred-texts.com/hin/m03/m03040.htm>, *Pasupathastra*: capable of destroying all beings and creation itself, this weapon should not be hurled without adequate cause; for if hurled at any foe of little might it may destroy the whole universe. In the three worlds with all their mobile and immobile creatures, there is none who is incapable of being slain by this weapon. And it may be hurled by the mind, by the eye, by words, and by the bow.

use of extraordinary or unconventional weapons was not even moral, let alone in conformity with religion or recognized rules of warfare.<sup>5</sup>

At different times in history, developments such as the crossbow, gunpowder, machine guns, tanks, airplanes, noxious gasses, nuclear bombs, and a number of other deadly inventions irreversibly changed the landscape of warfare and required combatants to reassess the laws governing armed conflict.<sup>6</sup> Drones have become a central instrument in armed conflict, and an increasing number of states and even non-state actors have deployed them in some way or another – although Western armies clearly have a significant technological advantage in this respect.<sup>7</sup> Legal scholars have expressed a variety of opinions on the use of drones.<sup>8</sup> On one hand, scholars argue that drones are lawful weapons under international law in a time of armed conflict, while on the other hand, critics argue that drones are being used in ways that violate international law.<sup>9</sup> The legality of drones has been questioned for a variety of reasons, some more grounded in fact than others, but despite this criticism there is little question that the use of drones in surveillance and combat roles is on the rise.<sup>10</sup>

The recent proliferation of drones has spawned intellectual debate on whether a country has the right under the LOAC and international law to unilaterally deploy these remotely controlled aircrafts abroad for military purposes. The use of drones in support of combat operations –

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<sup>5</sup> Gray D. Solis, *The Law of Armed Conflict: International Humanitarian Law in War*, 7 (2010).

<sup>6</sup> Vogel, *supra* note 4 at 103.

<sup>7</sup> Ferderic Megret, *The Humanitarian Problem with Drones*, 5 UT. L. REV. 1284 (2013).

<sup>8</sup> Shani Dann, *Drone Strikes and IHL*, (Nov. 6, 2014) <http://humanityinwarblog.com/2014/11/06/drone-strikes-and-ihl/>

<sup>9</sup> *Id.*

<sup>10</sup> Lewis, *supra* note 1, at 294.

particularly striking distant terror operatives – has become the most controversial legal topic.<sup>11</sup> Many of the most-frequently expressed criticisms about drones and drone warfare do not hold up well under serious scrutiny or, at any rate, there's nothing uniquely different or worse about drones when compared to other military technologies.<sup>12</sup> Consider the most common anti-drone argument: drones kill a disproportionate number of civilian non-combatants.<sup>13</sup> In another criticism, Ben Emmerson, the special rapporteur on human rights and counter-terrorism concluded that drone strikes that are known to have caused civilian casualties may have been carried out in violation of international law.<sup>14</sup> He said "It's not the drone that is the problem. The problem is the lack of clarity under which it is lawful to deploy lethal force by drone."<sup>15</sup> This chapter responds to the criticism of drone legality.

However, drones kill fewer civilians, as a percentage of total fatalities, than any other military weapon.<sup>16</sup> According to the U.N.'s mission in Afghanistan (UNAMA)<sup>17</sup> 2012 report, the number of Afghan civilian casualties caused by the U.S. and its allies did not increase in 2012, in fact, they decreased by 46 percent. More specifically, civilian casualties from 'aerial attacks' fell 42 percent.<sup>18</sup> The UNAMA report found that drones released 506 weapons in 2012, compared to

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<sup>11</sup> Heeyong Daniel Jang, *The Lawfulness of and Case for Combat Drones in the Fight Against Terrorism*, 2:1 NAT'L L.J. 2 (2013-2014).

<sup>12</sup> Rosa Brooks, *The Constitutional and Counterterrorism Implications of Targeted Killing: Hearing Before the S. Judiciary Subcomm. On the Constitution, Civil Rights, and Human Rights*, 113TH CONG., 2 (April 23, 2013) (Statement by Professor Rosa Brooks, Geo. U. L. Center),

<http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1114&context=cong>

<sup>13</sup> *Id.*

<sup>14</sup> Ed Pilkington & Ryan Devereaux, *US defends drone strikes as 'necessary and just' in face of UN criticism*, THE GUARDIAN, (October 25, 2013) <https://www.theguardian.com/world/2013/oct/25/un-drones-us-policy-debate>

<sup>15</sup> *Id.*

<sup>16</sup> William Saletan, *In Defense of Drones*, SLATE, (Feb. 2013)

[http://www.slate.com/articles/health\\_and\\_science/human\\_nature/2013/02/drones](http://www.slate.com/articles/health_and_science/human_nature/2013/02/drones)

<sup>17</sup> Hereinafter, U.N.'s mission in Afghanistan referred to as "UNAMA" or "UNAMA's."

<sup>18</sup> Saletan, *supra* note 16.

294 from the previous year.<sup>19</sup> Five incidents resulted in casualties with sixteen civilians killed and three wounded, up from just one incident in 2011.<sup>20</sup> Even as drone attacks increased, the U.N. reported an overall decrease in civilian deaths by airstrikes with the U.S.-led coalition implementing stricter measures to prevent innocent people from being killed.<sup>21</sup> In another empirical report concerning drone strikes cited by The New York Times, 522 strikes have killed an estimated 3,376 militants and 476 civilians, decimating al-Qaida leadership even as the loss of innocent life intensifies anti-American sentiment in nations where strikes occur.<sup>22</sup> Further, according to *The Long War Journal*, an estimated 801 militant deaths in Pakistan occurred from U.S. drone strikes in 2010.<sup>23</sup> This figure is significantly higher than the 195 drone-caused deaths occurring from 2004 to 2007.<sup>24</sup>

In contrast, several claims of civilian casualties caused by conventional aircrafts and weaponry have gone underreported. For example, an interview conducted by The Economist with twenty residents of the Pakistani tribal areas confirmed that many residents view individual drone strikes as preferable to the artillery barrages of the Pakistani military.<sup>25</sup> The residents insisted that the drones do not kill as many civilians—a view starkly at odds with mainstream Pakistani opinion.<sup>26</sup> An elder from North Waziristan stated, “No one dares to tell the real picture. Drone

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<sup>19</sup> Kim Gamel, *UN: Drones killed more Afghan civilians in 2012*, YAHOO NEWS, (February 19, 2013) <https://www.yahoo.com/news/un-drones-killed-more-afghan-civilians-2012-145931602.html?ref=gs>

<sup>20</sup>*Id.*

<sup>21</sup>*Id.*

<sup>22</sup> Steven Simon, *In Defense of Drones*, MSNBC, (April 26, 2015) <http://www.msnbc.com/msnbc/defense-drones>

<sup>23</sup> Jang, *supra* note 11.

<sup>24</sup>*Id.*

<sup>25</sup> Kenneth Anderson & Benjamin Wittes, *Three Deep Flaws in Two New Human-Rights Reports on U.S. Drone Strikes*, NEW REPUBLIC, (October 24, 2013) <https://newrepublic.com/article/115329/amnesty-international-human-rights-watch-drone-reports-are-flawed>

<sup>26</sup>*Id.*

attacks are killing the militants who are killing innocent people.”<sup>27</sup> *Jet planes, artillery attacks,* and *bombings* are the problem, not drones. Critics often assert that U.S. drone strikes are morally wrong because they kill innocent civilians.<sup>28</sup> This is undoubtedly both true and tragic, but nonetheless, it does not validate the arguments against drone strikes.<sup>29</sup> War kills innocent civilians, period.<sup>30</sup> But the best evidence currently available suggests that U.S. drone strikes kill fewer civilians than most other common means of warfare.<sup>31</sup>

The operational effectiveness of drones is undisputed. Martha McSally, former fighter pilot and drone squadron commander for the U.S. Air Force, stated in her April 23, 2013 testimony to the Senate Judiciary Sub-Committee on the Constitution, Civil Rights, and Human Rights, “once a decision has been made that it is a legal and wise strategy to conduct a target strike, the [drone] platform is usually the hands-down best choice to maximize precision, persistent intelligence, responsiveness, and oversight by commanders, intelligence and legal experts. It also has the benefit of minimizing civilian casualties without risk of U.S. casualties and at relatively low cost.”<sup>32</sup> Additionally, drone pilots located in air-conditioned trailers on secure bases are far less likely to err than fighter pilots, who have to deal with numerous other factors while on missions.<sup>33</sup> According to one international legal expert:

“There is little reason to treat drones as distinct from other weapons systems about

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<sup>27</sup>*Id.*

<sup>28</sup> Brooks, *supra* note 12.

<sup>29</sup>*Id.*

<sup>30</sup>*Id.*

<sup>31</sup>*Id.*

<sup>32</sup> Martha McSally, *Should the United States Continue Its Use of Drone Strikes Abroad?* PROCON.ORG, (last updated April 29, 2015) <http://drones.procon.org/view.answers.php?questionID=001894>

<sup>33</sup> Simon, *supra* note 20.

the legal consequences of their employment. Nor is there a sound basis for heightened concern as to their use. On the contrary, the use of drones may , in certain cases, enhance the protections to which various persons and objects are entitled under LOAC”<sup>34</sup>

The use of drones must therefore be carefully weighed against the fact that it creates enemies, even as it destroys them. Under that logic, the same argument might as well be used against all airstrikes, or for that matter, artillery strikes.<sup>35</sup> Both of these alternatives tend to be more indiscriminate in their effects than drones.<sup>36</sup>

This chapter argues that drones should be treated as any other component of the U.S. arsenal. A drone can be considered a weapons platform or a single weapon system. In addition, this chapter argues that drones indeed offer extensive and enhanced opportunities for compliance with LOAC and laws governing the use of certain weapons. Particularly, drones are well-suited to execute theories of self-defense in international affairs.

The first part of the chapter provided a general overview of drones and their modern-day implications. The second section will discuss the *legality per se* of drones as a weapon system in association with general principles of LOAC (i.e. military necessity, humanity, distinction, and proportionality). In addition, the third portion will also explore the application of just war theory and its two components, *jus as bellum* and *jus in bello*. In the third section, this chapter demonstrates how effective drones can be in executing self-defense operations, illustrated by a

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<sup>34</sup> Michael Schmitt, *Yearbook of International Humanitarian Law* 313 (2010)

<sup>35</sup> Simon, *supra* note 22.

<sup>36</sup> *Id.*

case study of the U.S. drone strategy during the War on Terror. Generally, this chapter examines the legality of drone strikes under LOAC based upon the geographical location of a given target. Finally, the chapter will conclude by exploring military command responsibility for the violations of LOAC during drone operations and the legal status of the drone operator.

## **2. The Law of Armed Conflict**

All warfare is governed by IHL, also known as the Law of Armed Conflict (LOAC).<sup>37</sup>

### **A. What is the Law of Armed Conflict?**

The LOAC comes from both customary international law and treaties.<sup>38</sup> Customary international law, based on a practice that nations have come to accept as legally required, establishes the traditional rules that govern the conduct of military operations in armed conflict.<sup>39</sup> The LOAC “arises from a desire among civilized nations to prevent unnecessary suffering and destruction while not impeding the effective waging of war.”<sup>40</sup> Indeed, modern LOAC is largely driven by humanitarian concerns.<sup>41</sup> As a part of public international law the LOAC regulates the conduct of armed hostilities, but only among consenting nations.<sup>42</sup> It also aims to protect civilians, prisoners of war, the wounded, sick, and shipwrecked.<sup>43</sup>

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<sup>37</sup> James Foy, *Autonomous Weapons Systems Taking the Human Out of International Humanitarian Law*, 23 DAL. J. LEGAL STUD. 47, 53 (2014)

<sup>38</sup> Rod Powers, *Law of Armed Conflict (LOAC)*, THE RULES OF WAR, <http://usmilitary.about.com/cs/wars/a/loac.htm>

<sup>39</sup> *Id.*

<sup>40</sup> *Id.*

<sup>41</sup> Solis, *supra* note 5, at 7.

<sup>42</sup> Powers, *supra* note 38.

<sup>43</sup> *Id.*

The LOAC regulates, among other things, the means, and methods of warfare – the weapons used and the tactics employed.<sup>44</sup> At its foundation, the LOAC is based on four key principles: distinction, proportionality, unnecessary suffering, and military necessity. All of which undergird the spirit and purpose of the law and drive determinations in areas such as targeting, detention, and treatment of persons.<sup>45</sup> The legality of drones can also be justified under the principles of weapon laws and targeting laws. The four fundamental LOAC principles are discussed in detail in the following section.

When determining the overall lawfulness of a weapon system under LOAC, there are two distinct aspects of the law that need to be analyzed: weapons law and lawful use of drones.<sup>46</sup> The former verifies that the weapon itself is lawful.<sup>47</sup> Weapon laws determine whether the use of the weapon system during hostilities might be prohibited in some manner under the LAOC.<sup>48</sup> A weapon must satisfy two legal aspects before it may lawfully be used on a battlefield;<sup>49</sup> the weapon should (1) prevent unnecessary suffering, and (2) be capable of effectively distinguishing targets.

The overarching principle that pertains to weapon systems is the prohibition of superfluous injury or unnecessary suffering.<sup>50</sup> Weapons that cannot be directed at specific military objectives, or weaponry considered overly dangerous by nature, can violate the principle of distinction and

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<sup>44</sup> Oren Gross, *The New Way of War: Is There a Duty to Use Drones?* 67 Fla. L. Rev. 1 27 (2015).

<sup>45</sup> Laurie R. Blank, *After “Top Gun”: How Drone strikes impact the law of war*, U. Pa. J. Int’l L. vol. 33:3, 681, (Feb. 14, 2012).

<sup>46</sup> Jeffrey Thurnher, *The Law That Applies to Autonomous Weapon Systems*, 17 AMERICAN SOCIETY OF INTERNATIONAL LAW 4, (January 18, 2013) <https://www.asil.org/insights/volume/17/issue/4/law-applies-autonomous-weapon-systems>

<sup>47</sup> *Id.*

<sup>48</sup> *Id.*

<sup>49</sup> *Id.*

<sup>50</sup> Gross, *supra* note 42, at 28.

found to be unlawful per se.<sup>51</sup> Moreover, even if a specific type of weapon is not unlawful per se, or is not specifically prohibited by particular treaties, governments are prohibited from improperly employing a weapon in a manner that would result in unnecessary suffering or in the targeting of civilian populations.<sup>52</sup> Such use is also unlawful under the relevant rules of the LOAC.<sup>53</sup> The two rules governing weapon laws are discussed in detail in the following section.

## **I. General Principles of the LOAC**

In this section, the principles of the LOAC will be applied to the use of drones in combat and combat support operations. This analysis falls squarely within LOAC principles. Again, the LOAC revolves around four core principles: distinction, proportionality, preventing unnecessary suffering, and military necessity. Application of any weapon depends upon these four general principles of the LOAC. Additionally, targeting law governs the circumstances of the use of lawful weapons and includes general principles of the LOAC. The following arguments help establish a basis for the conclusion that LOAC rules are sufficient to regulate drones.

### **i. Distinction**

“Distinction” means persons employing force must distinguish between lawful military targets (e.g., opposing combatants, equipment, or facilities), protected persons (e.g., civilians, medical personnel, chaplains, or persons who are hors de combat), property, and unlawful targets.<sup>54</sup> Greater awareness of the distinction principle has coincided with technological

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<sup>51</sup>*Id.*

<sup>52</sup>*Id.*

<sup>53</sup>*Id.*

<sup>54</sup> Christopher P. Toscano, “*Friend of Humans*”: *An Argument for Developing Autonomous Weapons Systems*, 8 J. NAT’L SEC. L. & POL’Y 189, 2010 (2010).

developments that enable increasingly precise targeting.<sup>55</sup> According to Article 48 of Additional Protocol I of the Geneva Convention,

“In order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants, and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives.”<sup>56</sup>

Through its language, Additional Protocol I prohibit the use of weapons that are “of a nature to strike military objectives and civilians or civilian objects without distinction.”<sup>57</sup>

Far from bombing entire industrial valleys or cities, which would inevitably lead to civilians being caught in the crosshairs, new technology has allowed states to be far more discriminate.<sup>58</sup> Indeed, the adoption of drones equipped with precision-guided munitions is the most recent improvement.<sup>59</sup> Drones equipped with modern imaging technologies enable operators located thousands of miles away to view details as fine as individual faces; this allows operators to distinguish between civilians and combatants far more effectively than most other weapons systems.<sup>60</sup> According to General (Ret.) James E. Cartwright, former Vice Chairman of the Joint Chiefs of Staff, “advances in high band-width satellite communications, sensing technologies –

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<sup>55</sup> John Kaag & Sarah Kreps, *Drone Warfare*, 81 (2010).

<sup>56</sup> *Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I)*, ICRC (8 June 1977) <https://www.icrc.org/ihl/4e473c7bc8854f2ec12563f60039c738/8a9e7e14c63c7f30c12563cd0051dc5c?OpenDocument>,

<sup>57</sup> *Rule 71*, CUSTOMARY IHL, [https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1\\_rul\\_rule71](https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1_rul_rule71)

<sup>58</sup> Kaag & Kreps, *supra* note 55 at 81.

<sup>59</sup> *Id.*

<sup>60</sup> Brooks, *supra* note 12.

particularly full motion video – combined with existing aircraft technology has allowed armed drones to emerge as the platform of choice in this counter terror mission space.”<sup>61</sup> On April 30, 2012, CIA Director John Brennan, said, “with the unprecedented ability of remotely piloted aircraft to precisely target a military objective while minimizing collateral damage, one could argue that never before has there been a weapon that allows U.S. to distinguish more effectively between an al-Qaida terrorist and innocent civilians...[.]”<sup>62</sup> Therefore, because drones can effectively distinguish between targets, it can be concluded that drones meet the standard of distinction under the LOAC.

## ii. Proportionality

The LOAC principle of proportionality requires that the expected loss of civilian life and damage to civilian property incidental to attack not be excessive in relation to the concrete and direct military advantage anticipated from striking the target.<sup>63</sup> Article 35 of Additional Protocol I declares that “in any armed conflict, the right of the Parties to the conflict to choose methods or means of warfare is not unlimited[;]” this basic principle was officially codified by the 1907 Hague Convention, however, studies suggest that similar albeit informal principles were commonly observed by combatants prior to the Hague Convention.<sup>64</sup> The principle focus of proportionality seeks to minimize incidental casualties during war and operationalizes the LOAC’s fundamental premise that the means and methods of attacking the enemy are not unlimited.<sup>65</sup> The key here is

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<sup>61</sup> John Brennan, *Should the United States Continue Its Use of Drone Strikes Abroad?* PROCON.ORG, (April 29, 2015) <http://drones.procon.org/view.answers.php?questionID=001894>

<sup>62</sup> *Id.*

<sup>63</sup> *Basic Principles of LOAC and their Targeting Implications*, CURTIS E. LEMAY CENTER, (last updated January 10, 2014) <https://doctrine.af.mil/download.jsp?filename=3-60-D33-Target-LOAC.pdf>

<sup>64</sup> Blank, *supra* note 43, at 681-82.

<sup>65</sup> *Id.*

the word “incidental,” meaning outside of the military target.<sup>66</sup> Importantly, however, the law does not prohibit all civilian deaths—and in fact accepts some incidental civilian casualties.<sup>67</sup>

Armed drones offer the advantage of less destructive weapons and greater command and control over firing decisions. Drones can employ Hellfire missiles that weigh one-hundred pounds with a warhead of approximately thirty fivepounds.<sup>68</sup> That is one-twentieth the size of a standard laser-guided bomb or cruise missile and less than half the size of the smallest precision ordnance dropped from conventional aircraft.<sup>69</sup> Proportionality inherently covers the notion to control and limit collateral damage to civilians and civilian property.

Proportionality is a venerable concept. Grotius writes, “one must take care of, as far as is possible, to prevent the death of innocent persons, even by accident.”<sup>70</sup> Even when a target is purely military, the element of proportionality is still considered when prosecuting a target. Proportionality brings with it an obligation to consider all options when making targeting decisions: verification of the target; timing of the attack; the chosen weapon of choice; and warnings and evacuations for civilian populations.<sup>71</sup> Drones, with their ability to see, think, and act in a controlled manner, provide ample opportunity to consider all options before engaging a target. Drone operators, after duly considering all options and taking all mitigating maneuvers into account, can minimize damage to civilian life and property.

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<sup>67</sup> *Id.*

<sup>67</sup> *Id.*

<sup>68</sup> Michael W. Lewis and Emily Crawford, *Drones and Distinction: How IHL Encouraged the Rise of Drones*, 44 *Geo. J. Int'l L.* 1151(2012-2013).

<sup>69</sup> *Id.*

<sup>70</sup> *Id.* at 275.

<sup>71</sup> *Id.*

### iii. Unnecessary suffering

The principle of humanity, also commonly referred to as the principle of unnecessary suffering, aims to minimize suffering in armed conflict.<sup>72</sup> The core LOAC concept of unnecessary suffering, a concept created to limit damage to civilians while killing combatants, is codified in Additional Protocol 1, Article 35(2) “it is prohibited to employ weapons, projectiles and materials and methods of warfare of a nature to cause superfluous injury or unnecessary suffering”<sup>73</sup> Once a military purpose has been achieved, the infliction of further suffering is unnecessary.<sup>74</sup> A weapon is not banned on the ground of superfluous injury or unnecessary suffering merely because it causes great, or even horrendous suffering or injury.<sup>75</sup> There is nothing unique about the armaments and munitions carried by drones and used by their pilots. Thus, Alston, who served as the U.N. Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions, acknowledged in his *Study on Targeted Killings* that, “a missile fired from a drone is no different from any other commonly used weapon, including a gun fired by a soldier or a helicopter or gunship that fires missiles.”

Compliance with the principle of unnecessary suffering depends upon the kind of weapon used and the kind of suffering that it might cause. Weapons can be specifically chosen to satisfy this principle; however, compliance with the LOAC depends upon the features of the weapon used and the competency of those employing the weapon to carry out a mission. Also, it is difficult to

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<sup>72</sup> *Id.*

<sup>72</sup> Blank, *supra* note 45, at 682.

<sup>73</sup> *Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I)*, *supra* note 80.

<sup>74</sup> Blank, *supra* note 43, at 682.

<sup>75</sup> Solis, *supra* note 5, at 270.

determine what constitutes “unnecessary suffering” because there is no globally accepted standard.

#### iv. Military Necessity

Finally, “military necessity” means that combatants may only employ force against legitimate military objectives.<sup>76</sup> The principle of military necessity recognizes that a military has the right to use any measures not forbidden by the laws of war that are indispensable for securing the complete submission of the enemy as soon as possible.<sup>77</sup> Military necessity requires combatforces to only engage in acts necessary to accomplish a legitimate military objective.<sup>78</sup> It further permits the killing of enemy combatants and other persons whose death is unavoidable.<sup>79</sup> The principle of military necessity is a principle of controlled violence.<sup>80</sup>

Military necessity permits the destruction of property if that destruction is imperatively demanded by the necessities of war.<sup>81</sup> Destruction of civilian property as an end in-itself is a violation of international law.<sup>82</sup> There must be a reasonable connection between the destruction of property and the overcoming of enemy forces.<sup>83</sup> IHL also prohibits weapon systems that cannot be directed at a specific military target.<sup>84</sup> Over the past few years several U.S. Government officials have confirmed that drones are an invaluable tool against Al-Qaeda, the Islamic State, Taliban,

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<sup>76</sup> Toscano, *supra* note 54, at 205.

<sup>77</sup> Blank, *supra* note 45, at 682.

<sup>78</sup> Anthony Finn & Steve Scheduling, *Developments and Challenges for Autonomous Unmanned Vehicles: A Compendium*, 172 (2010).

<sup>79</sup> *Id.*

<sup>80</sup> Gross, *supra* note 44, at 28.

<sup>81</sup> Finn & Scheduling, *supra* note 78.

<sup>82</sup> *Id.*

<sup>83</sup> *Id.*

<sup>84</sup> Michael N. Schmitt, *Autonomous Weapon Systems and International Humanitarian Law: A Reply to the Critics*, HARVARD NATIONAL SECURITY JOURNAL, (2013)10, <http://harvardnsj.org/wp-content/uploads/2013/02/Schmitt-Autonomous-Weapon-Systems-and-IHL-Final.pdf>,

and associated terrorist forces.<sup>85</sup> In some areas, drones are particularly useful because of their ability to find and identify targeted persons, and then reach into territory that ground forces cannot enter due to either military or political reasons.<sup>86</sup> In one reported case, the U.S. targeted a senior Taliban official in the impenetrable border region of Pakistan while he was resting on the roof of a house with his wife and hooked up to an IV-drip for kidney problems.<sup>87</sup> The Taliban member was wanted for his involvement in a number of suicide bombings and the assassination of former Pakistani Prime Minister Benazir Bhutto.<sup>88</sup> In such situations, and others like it, drone strikes offer a "definite military advantage."<sup>89</sup>

Drones, because of advanced technology can be very precise in targeted killing. Commanders and their legal advisors have ample to make informed decision to go after a target. They can easily assess the situation, and are capable of controlling the violence.

## **B. Drones as Lawful Weapons**

This section is intended to determine whether current weapon laws of LOAC are capable of regulating drones. In modern times, LOAC governs the choice of weapons and prohibits or restricts the use of certain weapons. Rule 71 of Customary IHL, which applies to both international and domestic conflicts, establishes the norm that the use of weapons which are indiscriminate by nature is prohibited; this norm of customary international law is applicable in both international

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<sup>85</sup> Vogel, *supra* note 3, at 115.

<sup>86</sup> *Id.*

<sup>87</sup> *Id.* (also see, Peter Finn & Joby Warrick, *Under Panetta, A More Aggressive CIA*, Wash. Post, (March. 21, 2010) [http://www.washingtonpost.com/wp-dyn/content/article/2010/03/20/AR2010032\\_003343.html](http://www.washingtonpost.com/wp-dyn/content/article/2010/03/20/AR2010032_003343.html)).

<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

and non-international armed conflicts.<sup>90</sup> In addition, many of the basic rules and specific prohibitions and restrictions on means and methods of warfare may be found in customary international law.<sup>91</sup> These restrictions can be traced back to treaties and customary international law, and are justified on the grounds that weapons which are either: (i) indiscriminate in their effect, or (ii) cause unnecessary suffering should be prohibited.<sup>92</sup>

The Declaration of Saint Petersburg is the first formal agreement prohibiting the use of certain weapons in war. “The Declaration to that effect adopted in 1868, which has the force of law, confirms the customary rule according to which the use of arms, projectiles and materials of a nature to cause unnecessary suffering is prohibited.”<sup>93</sup> Article 36 of Additional Protocol I of 1977 serves as a further reference found in international treaties for the need to carry out legal reviews of new weapons, means, and methods of warfare. The Protocol provides that:

“[I]n the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party (describes a party to any international agreement which has both signed and ratified the treaty) is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to

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<sup>90</sup> Rule 71 (Weapons That Are by Nature Indiscriminate), *Customary International Humanitarian Law*, ICRC, (accessed 7 July 2015) [https://www.icrc.org/customaryihl/eng/docs/v1\\_cha\\_chapter20\\_rul\\_71](https://www.icrc.org/customaryihl/eng/docs/v1_cha_chapter20_rul_71),

<sup>91</sup> Kathleen Law and, *A Guide to Legal Review of New Weapons, Means and Methods of Warfare, Measure to implement article 36 of Additional Protocol I of 1977 (2006)*, ICRC, Revised, Geneva, (accessed 22 July 2015) [http://www.article36.org/wp-content/uploads/2011/12/icrc\\_002\\_0902.pdf](http://www.article36.org/wp-content/uploads/2011/12/icrc_002_0902.pdf),

<sup>92</sup> A.G. Houston, *Executive Series ADDP 06.4 Law of Armed Conflict*, COMMONWEALTH OF AUSTRALIA Ed. 1, 4.4, (2006) <http://www.defence.gov.au/adfwc/documents/doctrinelibrary/addp/addp06.4-lawofarmedconflict.pdf>,

<sup>93</sup> *Treaties and State parties to such Treaties*, DECLARATION RENOUNCING THE USE, IN TIME OF WAR, OF EXPLOSIVE PROJECTILES UNDER 400 GRAMMES WEIGHT. SAINT PETERSBURG, 29 NOVEMBER / 11 DECEMBER 1868, ICRC <https://www.icrc.org/ihl/IN>

the High Contracting Party (HCP).”<sup>94</sup>

“Means of warfare” are weapons and weapon systems, whereas “method of warfare” refers to the tactics, techniques and procedures by which hostilities are conducted.<sup>95</sup> Also, international law prohibits two categories of weapons in armed conflict: indiscriminate weapons and weapons that cause unnecessary suffering.<sup>96</sup> The first prohibition appears in Article 51(4) of Additional Protocol I, which defines indiscriminate attacks as: (1) attacks “not directed at a specific military objective;” (2) attacks “which employ a method or means of combat which cannot be directed at a military objective;” or (3) attacks “which employ a method or means of combat the effects of which cannot be limited as required by this Protocol.”<sup>97</sup> It is prohibited to “use weapons that are incapable of distinguishing between civilian and military targets.”<sup>98</sup> Examples of inherently indiscriminate weapons are the rockets that Hamas and Hezbollah have fired into Israel for many years, cluster munitions, and nuclear weapons that destroy all life within the area of the detonation.<sup>99</sup> Additionally, weapons that cause unnecessary suffering or superfluous injury are prohibited.<sup>100</sup> Expanding bullets and blinding lasers offer two examples.<sup>101</sup> Peter Maurer, the president of the International Committee of Red Cross has stated:

“[U]nder IHL the rules of war, i.e. the set of laws governing armed conflict, drones

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<sup>94</sup> *Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I)*, 8 June 1977, TREATIES, ST., PARTIES & COMMENT. (Int’l Comm. of the Red Cross), at Article 35, available at <https://www.icrc.org/ihl/WebART/470-750044?OpenDocument>.

<sup>95</sup> Schmit, *supra* note 82, at 27.

<sup>96</sup> Blank, *supra* note 43, at 682.

<sup>97</sup> *Id.*

<sup>98</sup> Generally see, *Id.*

<sup>99</sup> *Id.*

<sup>100</sup> *Id.*, at 685.

<sup>101</sup> *Id.*, at 686.

are not expressly prohibited, nor are they considered to be inherently indiscriminate or perfidious. In this respect, they are no different from weapons launched from manned aircraft such as helicopters or other combat aircraft. It is important to emphasize, however, that while drones are not unlawful in themselves, their use is subject to international law.”<sup>102</sup>

Therefore, it appears drones comply with the various weapon laws, however, when a drone is acting as a “weapons platform,” the ordinance carried by the drone is still governed by other specific areas of weapons law. For example, if a drone is armed with chemical weapons, the applicable law is the convention on the Prohibition of the Development, Production, Stockpiling and use of Chemical Weapons and their Destruction.<sup>103</sup> Alternatively, if armed with ‘conventional’ munitions, then the general law of targeting would apply (be that treaty law, customary international law, or both).<sup>104</sup> Usually, drones carry Hellfire missiles, which are not banned by any international treaty or convention and do not have any characteristics that cause unnecessary injury. By both measures of weapon laws — indiscriminate targeting and preventing unnecessary suffering—armed drones pass muster.<sup>105</sup>

As discussed above, a drone can have advanced technical features and extensive surveillance capabilities, and when combined with precision-guided Hellfire missile, drones should be considered a discriminate weapon system. The ability to track a target for hours, even

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<sup>102</sup> Peter Maurer (the president of the ICRC), The use of armed drones must comply with laws, ICRC, (10-05-2013) <https://www.icrc.org/eng/resources/documents/interview/2013/05-10-drone-weapons-ihl.htm>

<sup>103</sup> M.N. Schmitt, Louise Arimatsu, & Tim McCormack, *Yearbook of International Humanitarian Law- 2010*, at 137 (Aug 5, 2011), (Ian Henderson, *chapter: Civilian Intelligence Agencies and the use of Armed Drones*)

<sup>104</sup> *Id.*

<sup>105</sup> Blank, *supra* note 45, at 686.

days, before launching an attack facilitates accurate targeting and enhances the protection of civilians by allowing drone operators the ability to choose the time and place of attack with an intent of minimizing civilian casualties or damage.<sup>106</sup> Therefore, because armed drones can easily target pure military objectives, and have effects that can be limited, as much as possible, to military objects, drones thus meet the standards of Article 51(4) of Additional Protocol I.<sup>107</sup>

### **C. Lawful Use of Drones Under the LOAC**

Drones, like any weapon, can be used for unlawful purposes, especially outside a combat zone. However, because drones are lawful weapons, the next step is to analyze their use according to the principles of the LOAC; or more particularly, the principles of distinction, proportionality, and precaution.

#### **I. Distinction**

As discussed above, advanced technology places drones in a better position to distinguish between combatants and non-combatants. Historically, distinction was easy; combatants wore uniforms and non-combatants did not. Now, the ‘global war on terrorism’ has raised new concerns because terrorists do not wear traditional uniforms, and it has become harder to distinguish between civilians and terrorists. Terrorists often take advantage of civilian populations and hide themselves among them. The situation has raised new challenges for drone operators in regards to distinction. State militaries wishing to assert compliance with a legal regime that regards human shielding and intermingling with the civilian population as unacceptable were pressured to ensure that their attacks became increasingly more discriminate and that their intelligence became more

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<sup>106</sup> *Id.*, at 687.

<sup>107</sup> *Id.*

accurate.<sup>108</sup>

The challenge found in non-state armed conflict is identifying the legitimate target. As discussed above, Article 48 of Additional Protocol I states that, “in order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives.”<sup>109</sup> Distinction is also emphasized in Article 51(4) of Additional Protocol I:

“Indiscriminate attacks are prohibited. Indiscriminate attacks are:

- (a) those which are not directed at a specific military objective;
- (b) those which employ a method or means of combat which cannot be directed at a specific military objective; or
- (c) those which employ a method or means of combat the effects of which cannot be limited as required by this Protocol; and consequently, in each such case, are of a nature to strike military objectives and civilians or civilian objects without distinction.”<sup>110</sup>

Furthermore, Article 85 of Protocol I declares that nearly all violations of distinction constitute “grave breaches”(foot note explaining or one brief sentence) of the Protocol, and the Rome Statute of the International Criminal Court similarly criminalizes attacks on civilians and

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<sup>108</sup> Lewis & Crawford, *supra* note 68, at 1153.

<sup>109</sup> *Additional Protocol I*

<https://www.icrc.org/ihl/4e473c7bc8854f2ec12563f60039c738/8a9e7e14c63c7f30c12563cd00>

<sup>110</sup> *Article 51*, Additional Protocol I, [hl/WebART/470-750065](https://www.icrc.org/ihl/WebART/470-750065)" <https://www.icrc.org/ihl>

indiscriminate attacks.<sup>111</sup> However, states have historically virtually ignored the principle of distinction by employing artillery, rocket launchers, and bombers in assaults on irregular forces occupying densely populated areas, resulting in tens of thousands of civilian casualties.<sup>112</sup> However, in order to minimize collateral damage and comply with the principle of distinction states began to employ more precise weapons than those designed to defeat a more traditional military opponent.<sup>113</sup> This is where drones enter the picture.<sup>114</sup>

The U.S. has consistently asserted that it complies with the LOAC in its battle against Al-Qaeda.<sup>115</sup> Examining how the U.S. responds to Al-Qaedas' practice of hiding amongst the civilian populations of Iraq, Afghanistan, Pakistan, and Yemen serves as a good illustration of how a state military may seek to comply with the LOAC's distinction requirements.<sup>116</sup> Persons who are members of an organized armed group, but dress the same as civilians, either for a lack of uniforms or specifically to blend into the civilian population for protection, are legitimate targets at all times.<sup>117</sup> The U.S.'s need for more robust intelligence greatly increased the demand for drones, which were first employed in the conflict with Al-Qaeda as real-time intelligence gathering vehicles for distinction purposes.<sup>118</sup> Drones are a better option as compared to boots on ground. Drone strikes give militaries more time to analyze the situation; operators and decision makers can use the 'pattern of life' method to pursue a target (analysis, using evidence collected by

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<sup>111</sup> Blank, *supra* note 45, at 691.

<sup>112</sup> Lewis & Crawford, *supra* note 68, at 1152.

<sup>113</sup> *Id.*, at 1153.

<sup>114</sup> *Id.*

<sup>115</sup> *Id.*

<sup>116</sup> *Id.*

<sup>117</sup> Blank, *supra* note 45, at 692.

<sup>118</sup> Lewis & Crawford, *supra* note 94, at 1153.

surveillance cameras on the unmanned aircraft and from other sources regarding individuals and locations).<sup>119</sup> Further, ground forces face the challenge of distinguishing between civilians and terrorists more promptly than drones, with less situational awareness. Drones may also reduce the emotional element for the humans behind the “joy sticks” when engaging targets.<sup>120</sup>

## II. Proportionality

Proportionality is closely linked with the principle of distinction and correctly identifying objects as military and civilian.<sup>121</sup> For an action to be considered proportional, the anticipated military gain must exceed the anticipated damage to civilians and their property.<sup>122</sup> Article 51(b) of Additional Protocol I proscribes that “an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated” is disproportionate.<sup>123</sup> Thus, a commander must refrain from any attack in which the expected civilian casualties will be excessive in light of the anticipated military advantage gained.<sup>124</sup>

Loss of life and damage to property *incidental* to attacks must not be excessive in relation to the concrete and direct military advantage expected to be gained.<sup>125</sup> The key here is the word “incidental,” meaning outside of the military targets or more commonly known as “collateral

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<sup>119</sup> Empty wheel, *Pattern of Life drone strikes*, SHADOW PROOF, (May 7, 2010) <https://shadowproof.com/2010/05/06/pattern-of-life-drone-strikes>

<sup>120</sup> P.W. Singer, *Military Robots and the Laws of War*, NEW ATLANTIS, at 25 (Winter 2009), at 25, 40-41 available at [http://www.thenewatlantis.com/docLib/20090203\\_TNA23Singer.pdf/](http://www.thenewatlantis.com/docLib/20090203_TNA23Singer.pdf/)

<sup>121</sup> Kaag & Kreps, *supra* note 81, at 94.

<sup>122</sup> *Id.*

<sup>123</sup> *Id.*

<sup>124</sup> Blank, *supra* note 45, at 682.

<sup>125</sup> Four basic principles, LOAC (accessed March 21, 2017) <http://loacblog.com/loac-basics/4-basic-principles/>.

damage.”<sup>126</sup> However, if a target is purely military (i.e. no civilian component) proportionality is not a requirement.<sup>127</sup> Proportionality is a necessary consideration in attacks on civilians, not on combatants.<sup>128</sup> Proportionality brings with it an obligation to consider all options when making targeting decisions: verifying the target, timing the target, identifying the weapons used, warning and evacuating civilian populations.<sup>129</sup> Grotius writes, “one must take care of, so far as is possible, to prevent the death of innocent persons, even by accident.”<sup>130</sup> According to CIA Director John Brennan:

“Compared against other options, a pilot operating this aircraft remotely, with the benefit of technology and with the safety of distance, might actually have a clearer picture of the target and its surroundings, including the presence of innocent civilians. It’s this surgical precision, the ability, with laser-like focus, to eliminate the cancerous tumor called an al-Qaida terrorist while limiting damage to the tissue around it, that makes this counterterrorism tool so essential.”<sup>131</sup>

### **III. Taking Precautions**

The principle of precaution is important because it provides constant consideration and implementation of precautionary measures that reinforces moral clarity for the warfighter thrust

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<sup>126</sup> *Id.*

<sup>127</sup> *Id.*

<sup>128</sup> Solis, *supra* note 5, at 274.

<sup>129</sup> Blank, *supra* note 45.

<sup>131</sup> *Id.* at 275.

<sup>131</sup> Brennan, *supra* note 61.

into terribly complex tactical and operational environments.<sup>132</sup> The principle of precaution can be further understood by reviewing Article 27 of the 1899 Hague Convention:

“In sieges and bombardments all necessary steps should be taken to spare as far as possible edifices devoted to religion, art, science, and charity, hospitals, and places where the sick and wounded are collected, provided they are not used at the same time for military purposes. The besieged should indicate these buildings or places by some particular and visible signs, which should previously be notified to the assailants.”<sup>133</sup>

Also, Article 2(3) of the 1907 Hague Convention (IX) further states, “[a] commander shall take all due measures in order that the town may suffer as little harm as possible.”<sup>134</sup> Article 57(2)(c) of Additional Protocol I mandates that those who plan or decide upon an attack “take all feasible precautions in the choice of means and methods of attack with a view to avoiding, and in any event to minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects.”<sup>135</sup> Additionally, according to article 57 (3) of Additional Protocol I, “when a choice is possible between several military objectives for obtaining a similar military advantage, the objective to be selected shall be that the attack on which may be expected to cause the least danger to civilian lives and to civilian objects.”<sup>136</sup> The primary variables of Article 57 may be identified

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<sup>132</sup> Geoffrey Corn, *Precautions to minimize civilian harm are a fundamental principle of the law of war*, JUST SECURITY, (July 8, 2015) <https://www.justsecurity.org/24493/obligation-precautions-fundamental-principle-law-war/>

<sup>133</sup> *Article 27 of the 1899 Hague Convention* [http://avalon.law.yale.edu/19th\\_century/hague02.as#art27](http://avalon.law.yale.edu/19th_century/hague02.as#art27)

<sup>134</sup> *Article 2 of the 1907 Hague Convention* [http://avalon.law.yale.edu/20th\\_century/hague09.asp](http://avalon.law.yale.edu/20th_century/hague09.asp)

<sup>135</sup> *Article 57 (2) (ii) of AP I*

<https://www.icrc.org/applic/ihl/ihl.nsf/9ac284404d38ed2bc1256311002afd89/50fb5579fb098aac12563cd0051dd7c>

<sup>136</sup> Article 57 (3) of AP I 136Frederik Rosén, EXTREMELY STEALTHY AND INCREDIBLY CLOSE: DRONES, CONTROL AND LEGAL RESPONSIBILITY J CONFLICT SECURITY LAW FIRST PUBLISHED ONLINE (*October 16, 2013*)<http://jcsf.oxfordjournals.org/content/early/2013/10/16/jcsf.krt024.full#xref-fn-45-1>

as “the time necessary to gather and process the additional information, the extent to which it would clarify any uncertainty, competing demands on the intelligence, surveillance, reconnaissance system in question, and risk to it and its operators’.<sup>137</sup> Finally, according to article 58 of Additional Protocol I, the Parties to the conflict shall, to the maximum extent feasible:

- “(a) without prejudice to Article 49 of the Fourth Convention, endeavor to remove the civilian population, individual civilians and civilian objects under their control from the vicinity of military objectives;
- (b) avoid locating military objectives within or near densely populated areas;
- (c) take the other necessary precautions to protect the civilian population, individual civilians and civilian objects under their control against the dangers resulting from military operations. This principle of avoidance (also known as “taking precautions”) means that it is not enough not to intend to kill civilians while attacking legitimate targets.”<sup>138</sup>

Indeed, a deliberate, affirmative effort has to be made not to harm civilians.<sup>139</sup> This may mean, for example, that certain targets ought to be attacked only during certain hours (e.g., at night, when no civilians may be around),’ that some attacks may need to be conducted from a certain angle, and that advance warnings to the civilian population must be issued by the attacker prior to the strike.<sup>140</sup> In this regard, drone technology removes a number of classic dilemmas related to

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<sup>137</sup> Frederik Rosén, *Extremely Stealthy and Incredibly Close: Drones, Control and Legal Responsibility*, J CONFLICT SECURITY LAW FIRST PUBLISHED ONLINE (October 16, 2013)

<http://jcs.l.oxfordjournals.org/content/early/2013/10/16/jcs.l.krt02>

<sup>138</sup> Gross, *supra* note 44, at 30.

<sup>139</sup> *Id.*

<sup>140</sup> *Id.*

precaution. Drones leave plenty of time for the consideration and execution of precautionary steps.<sup>141</sup> Drones allow commanders to incorporate precautionary measures in strategy formulation, executing signature strikes, and targeted killings.<sup>142</sup> Hours, days, or weeks' worth of surveillance may lie ahead of a drone attack.<sup>143</sup> It has been argued that there is "strong evidence that drones are better, not worse, at noncombatant discrimination."<sup>144</sup> The factors mentioned above do not eliminate the risk of civilian casualties, but they certainly represent feasible precautions that can minimize incidental loss of civilian life.<sup>145</sup> Conversely, drones may not be used when other means or methods of warfare that would result in less collateral damage with an equivalent prospect of mission success are available."<sup>146</sup>

The rules that govern targeting *do not turn on the type of weapon system used*, and there is no prohibition under the laws of war on the use of technologically advanced weapons systems in armed conflict--such as pilotless aircraft or so-called smart bombs—so long as they are employed in conformity with applicable laws of war.<sup>147</sup> In all three areas of distinction, proportionality, and precautions—drones' unique and advanced capabilities suggest great potential for adherence to LOAC obligations.<sup>148</sup> Drones are not automatons; they depend on human operators, analysts, and decision makers to comply with the laws of war.

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<sup>141</sup> Rosén, *supra* note 137.

<sup>142</sup> *Id.*

<sup>143</sup> *Id.*

<sup>144</sup> *Id.*

<sup>145</sup> Stuart Casey-Maslen, *Drone strikes under jus ad bellum, jus in bello, and international human rights law*, 94 INT'L REV. OF THE RED CROSS, NO. 886 AT 601 (summer 2012),

<https://www.icrc.org/eng/assets/files/review/2012/irrc-886-casey-maslen.pdf>

<sup>146</sup> Blank, *supra* note 45, at 686

<sup>147</sup> Galloway Family Foundation, *Lawful Use of Drones by Non-State Actors: Who can Kill*, (January 8, 2014) <http://www.gallowayfoundation.org/lawful-use-of-drones-by-non-state-actors-who-can-kill/>

<sup>148</sup> Blank, *supra* note 45, at 701.

## D. Just War Theory

The Just War Theory formalizes the moral justifications for war.<sup>149</sup> It is a lens fixed in the Western philosophical tradition.<sup>150</sup> From the start, Just War theorists have focused on two central questions: (1) when is it appropriate to go to war (*jus ad bellum*), and (2) how should the war be fought (*jus in bello*).<sup>151</sup>

### I. Jus Ad Bellum

*Jus ad bellum* means the legality of the use of force by a territorial state. *Jus ad bellum* governs the legality of recourse to military force (including drone strikes) by one state against another, and against armed non-state actors.<sup>152</sup> As a threshold matter, the *jus ad bellum* inquiry depends on whether the territorial state has consented to the drone strike.<sup>153</sup> However, recent history has demonstrated that consent of a state is not necessarily required when conducting drone operations.<sup>154</sup> Article 2(4) is properly interpreted as prohibiting all uses of force above a certain minimal level.<sup>155</sup> Minimal uses of force such as firing a single shot across an international boundary might violate the principle of non-intervention, but is probably too minor to come within the purview of Article 2(4).<sup>156</sup> The threshold for the occurrence of an armed attack by another state thus appears to be relatively high, going beyond a mere frontier incident between members of the

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<sup>149</sup> Ethan A. Wright, *Of Drones and Justice: A Just War Theory Analysis of the United States' Drone Campaigns*, URSINUS COLLEGE, at 12, (2015) [http://digitalcommons.ursinus.edu/cgi/viewcontent.cgi?article=1003&context=ethics\\_essay](http://digitalcommons.ursinus.edu/cgi/viewcontent.cgi?article=1003&context=ethics_essay)

<sup>150</sup> *Id.*

<sup>151</sup> Erich Freiberger, *Just War Theory and the Ethics of Drone Warfare*, E-INTERNATIONAL RELATIONS, (July 18, 2013) <http://www.e-ir.info/2013/07/18/just-war-theory-and-the-ethics-of-drone-warfare/>

<sup>152</sup> Maslen, *supra* note 145, at 601.

<sup>153</sup> Laurence Shore et al., *The Legality Under International Law of Targeted Killings by Drones Launched by the United States*, COMMITTEE ON INTERNATIONAL LAW, NEW YORK CITY BAR ASSOCIATION, at 8 (June 8, 2014)

<sup>154</sup> Maslen, *supra* note 145, at 601.

<sup>155</sup> Mary Ellen O'Connell, *Unlawful Killing with Combat Drones*, A CASE STUDY OF PAKISTAN, at 13 (2004-2009)

<sup>156</sup> *Id.*

armed forces of two states (or armed groups operating in one state with limited support from another state).<sup>157</sup> It might even be argued by some that a very limited and targeted drone strike by one state, against individuals located in another state, would not constitute an armed attack under the UN Charter or customary law.<sup>158</sup> This argument is based on the highly contested concept of anticipatory self-defense (self-defense will be discussed separately in a later section).<sup>159</sup> If there is consent, there is no infringement on sovereignty.<sup>160</sup> Although a definitive answer to this factual question is impossible without access to confidential material, the publicly available information suggests that states<sup>161</sup> have given their consent to U.S. drone strikes.<sup>162</sup> Because some state have publicly withheld their consent, the U.S. must consider whether alternative justifications provide a legal basis for continued U.S. drone strikes under Just War theory.<sup>163</sup>

## II. Jus in Bello

*Jus in bello* analysis provides a legal basis for states in determining who is an acceptable target, and who is not. The typical distinction is between “combatants,” who may be the targets of wartime operations, and “non-combatants,” who are exempt from being targets of such attacks.<sup>164</sup> *Jus in bello* is the foundation for the principles of distinction, proportionality, and necessity discussed above. Most legal scholars agree that drone strikes are legal under *jus in bello* if they occur during armed conflict.<sup>165</sup> Nothing is inherently illegal about using drones to kill during

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<sup>157</sup> Maslen, *supra* note 145, at 602.

<sup>158</sup> *Id.*

<sup>159</sup> *Id.*

<sup>160</sup> Shore et al., *supra* note 153, at 8-9.

<sup>161</sup> With the apparent exception of Pakistan.

<sup>162</sup> Shore et al., *supra* note 153, at 9.

<sup>163</sup> *Id.*

<sup>164</sup> Freiburger, *supra* note 151.

<sup>165</sup> James DeShaw Rae, John Crist, & Palgrave Macmillan, *Analyzing the Drone Debates: Targeted Killings, Remote Warfare, and Military Technology*, at 62 (March 12, 2014)

warfare, just as other airplanes are not forbidden.<sup>166</sup> Drones by themselves are not really weapons, and the armaments they do carry are generally lawful.<sup>167</sup>

### 3. Self-Defense Theory

This section demonstrates the effectiveness of drones in executing self-defense operations, illustrated by a case study of the U.S. drone strategy during the War on Terror. U.S. national security strategy has encompassed the pre-emptive self-defense doctrine since the domestic attack that took place on September 11, 2001; commonly referred to as “9/11.” This doctrine argues that it is legal for a state to launch a pre-emptive attack when it reasonably believes that another entity is planning an attack on the state.<sup>168</sup> However, the U.S. has long recognized the importance of defending its interests, both domestically and abroad. In 1854, a U.S. diplomat was attacked in the town of San Juan del Norte (Greytown)<sup>169</sup>, Nicaragua.<sup>170</sup> At the time of the attack, Greytown had been forcibly seized by forces that were [politically] unrecognized by the U.S., and engaged in other acts of violence against U.S. nationals.<sup>171</sup> The U.S. Secretary of the Navy ordered the bombardment of the town after the enemy force’s refusal to adhere to the U.S.’s demand for redress.<sup>172</sup> The presidential authorization of the military force used in Greytown was later

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[https://books.google.com/books?id=eFkJAwAAQBAJ&pg=PA62&lpg=PA62&dq=Drones+as+Lawful+Weapons&source=bl&ots=mW3rmZwFPG&sig=-I5mkvpBXyHmv3I0\\_Niv\\_jd1l-U&hl=en&sa=X&ved=0CDwQ6AEwBGoVChMIuHuqZHAYAIVi6SICCh26wwK-#v=onepage&q=Drones%20as%20Lawfu](https://books.google.com/books?id=eFkJAwAAQBAJ&pg=PA62&lpg=PA62&dq=Drones+as+Lawful+Weapons&source=bl&ots=mW3rmZwFPG&sig=-I5mkvpBXyHmv3I0_Niv_jd1l-U&hl=en&sa=X&ved=0CDwQ6AEwBGoVChMIuHuqZHAYAIVi6SICCh26wwK-#v=onepage&q=Drones%20as%20Lawfu)

<sup>166</sup> *Id.*

<sup>167</sup> *Id.*

<sup>168</sup> Kate McCann & Christopher Hope, *Are UK drone strikes in Syria legal?* THE TELEGRAPH, (September 8, 2015) <http://www.telegraph.co.uk/news/worldnews/middleeast/syria/11852228/Are-UK-drone-strikes-in-Syria-legal.html>

<sup>169</sup> Hereinafter San Juan del Norte is referred as Greytown.

<sup>170</sup> Jordan J. Paust, *Self-Defense Targeting of Non-State Actors and Permissibility of U.S. Use of Drones in Pakistan*, 19.2 J. of Transnational L. & Pol’y, at 245 (also see, *Durand v. Hollins*, 8 F. Cas. 111 (C.C.S.D.N.Y. 1860) (No. 4186). Due to lack of recognition of the putative government, the community can be classified as a non-state actor)

<sup>171</sup> *Id.*

<sup>172</sup> *Id.*

challenged in U.S. courts, with each ruling being appealed until the case arrived at the Supreme Court.<sup>173</sup> Justice Nelson of the U.S. Supreme Court stated in the opinion that the President had the power to order the responsive use of armed force as part of a power of “protection” of U.S. nationals abroad against “acts of lawless violence” and “an irresponsible and marauding community.”<sup>174</sup> At the time of the ruling, the U.S. did not consider the ongoing conflict with Nicaragua, Greytown, or its unrecognized government as “war”.<sup>175</sup>

The customary law of a state’s right to self-defense is enshrined in Article 51 of the UN Charter.<sup>176</sup> Article 51 states:

“[N]othing in the present Charter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security. Measures taken by Members in the exercise of this right of self-defense shall be immediately reported to the Security Council and shall not in any way affect the authority and responsibility of the Security Council under the present Charter to take at any time such action as it deems necessary in order to maintain or restore international peace and security.”

Article 51 of the Charter expressly affirms the right of a state to respond defensively “if an armed attack occurs.”<sup>177</sup> “Armed attack” is the operative phrase of the text; a state may use force

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<sup>173</sup> *Id.*, at X.

<sup>174</sup> *Id.*, at 245.

<sup>175</sup> *Id.*, at 246.

<sup>176</sup> Schmitt *supra* note 34, at 5.

<sup>177</sup> Paust, *supra* note 170, at 241.

against both state and non-state aggressors under a theory of self-defense. And further, nothing in the language of Article 51 or any otherwise relevant customary international law requires consent of the state from which a non-state actor attack is emanating, and on whose territory a self-defense action takes place against the non-state actor.<sup>178</sup> Article 51 provides that nothing in the present Charter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security.<sup>179</sup> The U.S. has justified its drone operations occurring outside the context of an armed conflict with another state on the basis of this right.<sup>180</sup>

In fact, with respect to permissible measures of self-defense under Article 51, a form of consent from each member of the United Nations already exists in advance by treaty.<sup>181</sup> For example, with respect to the U.S. use of drones in Pakistan to target Al-Qaeda and Taliban forces, it is clear that the U.S. would not need the express consent of Pakistan to carry out self-defense targeting.<sup>182</sup> It is also clear that the U.S. has the right to use drones in Pakistan under Article 51 of the Charter in self-defense to protect U.S. interests from continuous Al-Qaeda and Taliban attacks launched from Pakistan.<sup>183</sup> There is a growing body of law that generally recognizes the actions taken by the U.S. as legal according to international standards. According to public reports, U.S. officials have regularly consulted with Pakistani authorities when drones have been employed for

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<sup>178</sup> *Id.*, at 249.

<sup>179</sup> Schmitt *supra* note 34, at 5.

<sup>180</sup> *Id.*

<sup>181</sup> Paust, *supra* note 170, at 239.

<sup>182</sup> *Id.*, at 249.

<sup>183</sup> *Id.*, at 250.

strike operations in Pakistan.<sup>184</sup> However, Pakistan maintains only limited control over large swaths of its territory, and thus, as a result, terrorists have used that ungoverned space to their advantage; in response, President Trump and former-President Barack Obama have made clear that the U.S. will act if Pakistan cannot.<sup>185</sup>

#### 4. Geographical location of drone strikes and LOAC

Under the LOAC, in military operations, the location of a strike matters. The LOAC cannot apply places where armed conflict does not exist, and the determination of whether armed conflict does in-fact exist is based upon the intensity of the violence occurring in that given place, in addition to the level of organization employed by the forces involved, as laid out in the *Tadic* opinion.<sup>186</sup> The appearance of drones in the arsenal of armed conflict has stimulated renewed attempts to define the parameters of the modern battlefield.<sup>187</sup> The location in which military operations are actually taking place at any given time is known as the ‘area of operations,’ “the theatre of war,” or simply, the ‘battlefield.’<sup>188</sup> Conventional LOAC contains references to “zones of military operations,” the ‘zone of combat,’ and ‘battlefield areas’ although these terms remain ambiguous.<sup>189</sup>

The ever-increasing use of drones in the pursuit of the “war on terror” has raised concerns over the emergence of a global battlefield whereby the entire planet is subject to the application of

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<sup>184</sup> Vogel, *supra* note 3, at 131.

<sup>185</sup> *Id.*

<sup>186</sup> Lewis, *supra* note 1 at 301.

<sup>187</sup> Noam Lubell & Nathan Derejko, *A Global Battlefield? Drones and the Geographical Scope of Armed Conflict*, 1 J INT CRIMINAL JUSTICE at 8 (2013).

<sup>188</sup> *Id.*, at 9.

<sup>189</sup> *Id.*

the LOAC.<sup>190</sup> For the past several years, the geographical location of drone attacks has expanded at a rapid rate; Afghanistan, Pakistan, Yemen, Somalia, and Libya have all been subject to drone strikes under the blanket justification of fighting terrorism.<sup>191</sup> Some of these strikes, such as those in Afghanistan, Pakistan, and Libya, fall within the generally recognized parameters of an armed conflict. Others, such as those in Yemen and Somalia, raise more complicated questions regarding where force is being used and what that means in terms of the application of the LOAC.<sup>192</sup> These concerns primarily stem from frequent drone strikes occurring outside the ‘active battlefields’ of Afghanistan and into the bordering regions of Pakistan, Yemen, and Somalia.<sup>193</sup>

Drone strikes blur the geographical boundaries of the battlefield. In traditional conflicts, military operations were confined to the territories of the actors and were not supposed to spillover to neutral states.<sup>194</sup> The law of neutrality generally “defines the relationship under international law between states engaged in an armed conflict and those that are not participating in that conflict.”<sup>195</sup> Neutrality law thus led to a geographic-based framework in which belligerents can fight on belligerent territory or the commons, but must refrain from any operations on neutral territory.<sup>196</sup> In essence, the battle space in a traditional armed conflict between two or more states is anywhere outside the sovereign territory of any of the neutral states.<sup>197</sup> However, because the

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<sup>190</sup> *Id.*

<sup>191</sup> Generally see, Blank *supra* note 45, at 708.

<sup>192</sup> *Id.*

<sup>193</sup> Lubell & Derejko, *supra* note 187, at 11.

<sup>194</sup> Blank, *supra* note 45 at 711.

<sup>195</sup> *Id.*

<sup>196</sup> *Id.*

<sup>197</sup> *Id.*

U.S. drone program largely targets non-state actors that freely move across borders, laws of neutrality have become less effective.

The U.S. government operates two drone programs.<sup>198</sup> The military's version, which is publicly acknowledged, operates in the recognized war zones of Afghanistan and Iraq, and targets enemies of the U.S. military stationed there. As such, the program is an extension of conventional warfare.<sup>199</sup> The C.I.A.'s program is aimed at terror suspects around the world, including countries where U.S. troops are not based.<sup>200</sup> The program is classified as covert, and the intelligence agency declines to provide any information to the public about where it operates, how it selects a target, who is in charge, or how many casualties the program has led to.<sup>201</sup> It is contended that drone strikes in places like Yemen and Pakistan violate international law because there is no currently recognized conflict between these states and the US.<sup>202</sup>

However, just a few weeks after the attacks of 9/11, President George W. Bush laid the foundation for the notion of the whole world as a battlefield when he pronounced, "our war on terror will be much broader than the battlefields and beachheads of the past. This war will be fought wherever terrorists hide, or run, or plan."<sup>203</sup> The Obama Administration has not specifically adopted that same language calling for a global battlefield, but has actually significantly expanded the use of drone strikes outside of Afghanistan.<sup>204</sup> Al-Qaeda maintains a strong presence in a number of countries, most notably Yemen and Somalia, and uses such states to recruit, train, and

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<sup>198</sup> O'Connell, *supra* note 155, at 4.

<sup>199</sup> *Id.*

<sup>200</sup> *Id.*

<sup>201</sup> *Id.*

<sup>202</sup> Lewis, *supra* note 1, at 294.

<sup>203</sup> Blank, *supra* note 45, at 712.

<sup>204</sup> *Id.*

plan attacks against the U.S. and its allies. The U.S. has reportedly conducted limited drone operations in such countries.<sup>205</sup> Somalia and Yemen present an even more compelling case (than say Pakistan) of a neutral status; both states are considered “failed states” and are unable to consent or object to U.S. actions and the U.S. has not formally acknowledged the use of force in these states.<sup>206</sup>

According to Authorization for Use of Military Force (AUMF) passed by Congress in the days following 9/11 attacks:

“The President is authorized to use all necessary and appropriate force against those nations, organizations, or persons he determines planned, authorized, committed, or aided the terrorist attacks that occurred on September 11, 2001, or harbored such organizations or persons, in order to prevent any future acts of international terrorism against the U.S. by such nations, organizations or persons.”<sup>207</sup>

If consent was given by a state and U.S. personnel engaged a target authorized by the AUMF, the strike would arguably be covered under AUMF authority and fall within the LOAC.<sup>208</sup> Therefore, the U.S. is not territorially limited when conducting operations against non-state participants.<sup>209</sup> Moreover, there is no question that Pakistan's territory falls within the greater AUMF theater of conflict U.S. officials have argued that the fight

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<sup>205</sup> Vogel, *supra* note 3, at 132.

<sup>206</sup> *Id.*

<sup>207</sup> 107th Congress, PUBLIC LAW 107-40 (September 18, 2001) <http://www.gpo.gov/fdsys/pkg/PLAW-107publ40/pdf>

<sup>208</sup> Vogel, *supra* note 3, at 132.

<sup>209</sup> *Id.*

with AUMF enemies is global, not confined to the territory of one country.<sup>210</sup> In fact, most of the leadership and many of the fighters intended to be covered by the AUMF are located outside of Afghanistan and within Pakistan's borders.<sup>211</sup>

Thus, location matters, but it is not overly prohibitive.<sup>212</sup> The U.S. has consistently made the case that the war with Al-Qaeda and its terrorist associates is of global reach.<sup>213</sup> The epicenter is in Afghanistan (and to a lesser extent Iraq), but Al-Qaeda and its offshoots, as transnational non-state actors, operate in and wage war from states across the world.<sup>214</sup>

## 5. Command responsibility during drone operations

Under the LOAC and international criminal law, military personnel are criminally responsible for any war crimes they commit during war.<sup>215</sup> In the case of drones, the most controversial aspect of a drone program is the legal status of the operator.<sup>216</sup> Military commanders often consult their staff judge advocates (SJAs), especially in the escalation of conflict.<sup>217</sup> Seeking legal advice is increasing and has become prevalent, even in the battle space.<sup>218</sup> “It is also clear

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<sup>210</sup> *Id.*

<sup>211</sup> *Id.*

<sup>212</sup> *Id.*

<sup>213</sup> *Id.*

<sup>214</sup> *Id.*

<sup>215</sup> Nathalie Weizmann, *Autonomous Weapon System under International Law*, ACADEMY BRIEFING NO. 8, Nov. 2014, at 3.

<sup>216</sup> Vogel, *supra* note 111, at 134.

<sup>217</sup> Edward Major, *Law and ethics in command decision making*, UNIVERSITY OF PENN., at 61 (June 2012), <https://www.law.upenn.edu/institutes/cerl/conferences/cyberwar/papers/reading/Major.pdf>

<sup>218</sup> *Id.*

from the commanders . . . that legal advice is essential to effective combat operations in the current environment—legal advice is now part of the tooth not the tail.”<sup>219</sup>

Even those who support nearly every other aspect of drone warfare find themselves uneasy with civilian personnel performing combat functions.<sup>220</sup> According to Peter Maurer, the president of the ICRC:

“Although the operators of remote-controlled weapons systems such as drones may be far from the battlefield, they still run the weapon system, identify the target and fire the missiles. They generally operate under responsible command; therefore, under IHL, drone operators and their chain of command are accountable for what happens. The fact of their being thousands of kilometers away from the battlefield does not absolve drone operators and their chain of command of their responsibilities, which include upholding the principles of distinction and proportionality, and taking all necessary precautions in attack. Drone operators are thus no different than the pilots of manned aircraft such as helicopters or other combat aircraft as far as their obligation to comply with IHL is concerned, and they are no different as far as being targetable under the rules of IHL.”<sup>221</sup>

Military drone operators live and work in the US, leading relatively normal civilian lives outside of their occupation.<sup>222</sup> Unlike deployed personnel who remain in a combat environment

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<sup>219</sup> *Id.*

<sup>220</sup> Vogel, *supra* note 111, at 134.

<sup>221</sup> Peter Maurer (the president of the ICRC), *The use of armed drones must comply with laws*, ICRC, 10-05-2013 Interview <https://www.icrc.org/eng/resources/documents/interview/2013/05-10-drone-weapons-ihl.htm>

<sup>222</sup> Wright, *supra* note 149, at 12.

continuously, drone operators maintain more stereotypical employment; they come in to work each day, gather intelligence, execute strikes when required, and return home for dinner.<sup>223</sup> All the while, military drone operators and their chain of command are subject to the laws of war.

However, command responsibility is not as clearly defined when the CIA conducts drone operations. The CIA follows, or at least professes to follow, the laws of armed conflict.<sup>224</sup> As discussed above, the CIA operates one of the two drone programs for the U.S. The CIA program is not considered a military program, is not operated as one, and is not governed “by the same international protocols on the conduct of war” as the Department of Defense.<sup>225</sup> The clandestine and largely unaccountable nature of the CIA program creates the most ambiguities for Just War theorists.<sup>226</sup> According to Philip Alston U.N. Special Rapporteur on extrajudicial, summary, or arbitrary executions:

“Intelligence personnel do not have immunity from prosecution under domestic law for their conduct. They are thus unlike State armed forces which would generally be immune from prosecution for the same conduct.... Thus, CIA personnel could be prosecuted for murder under the domestic law of any country in which they conduct targeted drone killings, and could also be prosecuted for violations of applicable U.S. law.”<sup>227</sup>

Alston is not alone in this assessment of CIA drone pilots’ status. As noted by Rayan Vogel, a

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<sup>223</sup> *Id.*

<sup>224</sup> Lewis & Crawford, *supra* note 68, at 1158.

<sup>225</sup> Wright, *supra* note 149, at 7.

<sup>226</sup> *Id.*

<sup>227</sup> Lewis & Crawford, *supra* note 68, at 1158.

Foreign Affairs Specialist, and member of the Office of the Secretary of Defense and U.S. Department of Defense:

“The CIA is a civilian agency and not a branch of the U.S. Armed Forces. Even under a liberal reading of Article 4 from GC III, the CIA would not meet the requirements of lawful belligerency as a militia or volunteer corps because, while they do report to a responsible chain of command (albeit not always a military chain of command), as a group they do not wear uniforms or otherwise distinguish themselves, nor do they carry their arms openly. CIA personnel are therefore unprivileged belligerents in this conflict.”<sup>228</sup>

Gary Solis agrees with this assessment and has opined at some length on the status of CIA drone operators as unprivileged belligerents:

“Those CIA agents are, unlike their military counterparts but like the fighters they target, unlawful combatants. No less than their insurgent targets, they are fighters without uniforms or insignia, directly participating in hostilities, employing armed force contrary to the laws and customs of war. Even if they are sitting in Langley, the CIA pilots are civilians violating the requirement of distinction, a core concept of armed conflict, as they directly participate in hostilities .... It makes no difference that CIA civilians are employed by, or in the service of, the U.S. government or its armed forces. They are civilians; they wear no distinguishing uniform or sign, and

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<sup>228</sup>*Id.*, at 1159.

if they input target data or pilot armed drones in the combat zone, they directly participate in hostilities--which means they may be lawfully targeted .... Moreover, CIA civilian personnel who repeatedly and directly participate in hostilities may have what recent guidance from the International Committee of the Red Cross terms "a continuous combat function." That status, the ICRC guidance says, makes them legitimate targets whenever and wherever they may be found, including Langley."<sup>229</sup>

When the laws of armed conflict were developed there was no technology such as drones used in the battlefield. Perhaps, new laws should be developed, especially to protect and guide drone operators. Drones are different than traditional forces that must react promptly to various hostile situations and make decisions within their own judgment. In the case of drones, it is conceivable that the President may become involved with the assistance of military and legal advisors before authorizing a drone operator to engage a target. Therefore, the laws delineating command responsibility in both drone programs need to be updated and promulgated to ensure operations conform with the LOAC.

## **6. Conclusion**

This chapter has demonstrated that current laws are capable of governing drone warfare. The fundamental principles of the LOAC, specialized weapons treaties, The Hague and Geneva conventions, customary law, and the UN Charter all provide a thorough legal backdrop to govern

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<sup>229</sup> *Id.*, at 1159-60.

the usage of drones.<sup>230</sup> As with all weapons, it is essential to ensure that drone attacks are launched only against legitimate military objectives in accordance with the laws governing the use of force.<sup>231</sup> The sole legal issue specific to drone operations under both the *jus ad bellum* and the *jus in bello* is weapon choice.<sup>232</sup> As correctly noted by Special Reporter Alston, “a missile fired from a drone is no different from any other commonly used weapon, including a gun fired by a soldier or a helicopter or gunship that fires missiles. The critical legal question is the same for each weapon: whether its specific use complies with LOAC.”<sup>233</sup> Drones provide a legally permissible use of force to support self-defense.<sup>234</sup> Drone attacks can occur against state or non-state actors located in a foreign country from which the armed attacks emanate even though there is no special consent of the foreign state, no imputation of the non-state actor’s attacks to the foreign state, no armed conflict between the foreign state and the U.S., and the foreign state is willing or unable to stop the attacks.<sup>235</sup> However, the legal status of drone operators remains as a challenging legal question while the field continues to develop.

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<sup>230</sup> Vogel, *supra* note 3 at 137.

<sup>231</sup> Blank, *supra* note 45, at 716-17.

<sup>232</sup> Michael Schmitt, *Drone Attacks Under the Jus Ad Bellum and Jus In Bello: Clearing the ‘Fog of Law’*, at 13 <http://ssrn.com/abstract=1801179>

<sup>233</sup> *Id.*

<sup>234</sup> Paust, *supra* note 170, at 203.

<sup>235</sup> *Id.*

## Chapter 3: Legal Justifications for the Drone Targeted Killing

### 1. Introduction

This chapter aims to give an overview of the justifications for targeted killings carried out by drones as a means of warfare. The justifications for targeted drone strikes can be broken down along three lines operational considerations, theories of self-defense, and moral concerns. The chapter focuses on targeted killing as it pertains to drones employed as a means of warfare by the U.S. in its War on Terror. Further, this chapter examines whether the use of drones for targeted killings comports with the IHL. Also, this examines the effectiveness of targeted killing. This chapter analyzes the legality of targeted killing, under both domestic law and international law.

In the *Bhagavad Gita*, an Indian holy scripture, philosophical truths are expounded in the form of a dialogue between Krishna and His friend Arjuna before military combat.<sup>1</sup> Krishna told Arjuna that the warriors had already been killed at another level.<sup>2</sup> Now it was only necessary to play out the killing and that Arjuna should go forward in the name of his Lord and Master and do his duty.<sup>3</sup> War should be avoided at all costs. However, sometimes it cannot be avoided because karma is there for war. If this is the case, modern day soldiers are as helpless as Arjuna.

The current practice of using armed drone strikes to kill individuals identified as terrorist threats is the most commonly cited example of targeted killing.<sup>4</sup> Within the War on Terror, the U.S. is engaged in practice of targeted killing.<sup>5</sup> Justifying its actions as part of an ongoing war with

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<sup>1</sup> Mikhail Nikolenko, *Bhagavad Gita with Commentaries*, AQUARIAN AGE (2008)[http://aquarian-age.org.ua/en/God-speaks/bhagavad\\_gita.html](http://aquarian-age.org.ua/en/God-speaks/bhagavad_gita.html)

<sup>2</sup> Generally see, *Id.*

<sup>3</sup> *Id.*

<sup>4</sup> Kenneth R. Himes, *OFM, DRONES AND THE ETHICS OF TARGETED KILLING*, 10 (2016)

<sup>5</sup> Melanie Foreman, *When Targeted Killing is Not Permissible: An Evaluation of Targeted Killing Under the Laws of War and Morality*, 15 U. PA. J. CONST. L. 922(2012-2013)

al-Qaeda, the U.S. employs drones, often remotely piloted by Central Intelligence Agency (CIA) officials, to kill those insurgents it deems a threat to the citizens of the United State.<sup>6</sup> The use of drones and other forms of targeted killings are being increasingly criticized at the international and domestic level.<sup>7</sup> The United Nations has launched an inquiry into the overall legality of such a method of counterterrorism warfare and its associated loss of civilian life.<sup>8</sup>

Some scholars say that the use of drones for targeted killing with missiles is highly controversial under international law. Wolfgang Neskovic said, “Such attacks happen in a legal vacuum. International law contains no legal basis for the killing of alleged terrorists outside a combat situation. In the case of Pakistan, for example, so far no western country has officially announced that it is a war zone or that this is an armed conflict within the meaning of international law.”<sup>9</sup> In another criticism, In Pakistan, Mr. Obama had approved not only “personality” strikes aimed at named, high-value terrorists, but “signature” strikes that targeted training camps and suspicious compounds in areas controlled by militants.<sup>10</sup> But some State Department officials have complained to the White House that the criteria used by the C.I.A. for identifying a terrorist “signature” were too lax.<sup>11</sup> The joke was that when the C.I.A. sees “three guys doing jumping jacks,” the agency thinks it is a terrorist training camp, said one senior official. Men loading a

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<sup>6</sup> *Id.*

<sup>7</sup> Sascha-Dominik Bachmann, *Targeted Killings: Contemporary Challenges, Risks and Opportunities*, OXFORD JOURNAL OF CONFLICT & SECURITY LAW at 259 (May 31, 2013)

<sup>8</sup> *Id.*

<sup>9</sup> Stephanie Hoppner, *U.S. drone use faces mounting criticism*, DW, (February 9, 2013) <http://www.dw.com/en/us-drone-use-faces-mounting-criticism/a-16587936> (Wolfgang Neskovic, a legal expert and independent member of the German parliament, who until recently represented the Left party)

<sup>10</sup> Conor Friedersdorf, *Obama's Weak Defense of His Record on Drone Killings*, THE ATLANTIC, (December 23, 2016) <https://www.theatlantic.com/politics/archive/2016/12/president-obamas-weak-defense-of-his-record-on-drone-strikes/511454/>

<sup>11</sup> *Id.*

truck with fertilizer could be bombmakers — but they might also be farmers, skeptics argued.<sup>12</sup> This chapter responds to the criticism of drone targeted killing.

To effectively stop terror, a different model must be sought, not the model of conventional war with its machines and tools, nor that of the police and court activities conducted against ordinary criminals.<sup>13</sup> Rather, the war against terror must adopt methods that are less common, or altogether uncommon, in conventional wars.<sup>14</sup> The morality of killing enemy combatants through targeted drone strikes lies in the justifications by which targeted killings are carried out. If a commander orders a drone strike, then doing the least damage would be preferable to doing the most damage. A drone with a small explosive would be better than a plane with a big bomb. The drone causes less collateral damage.

This chapter refers to attacks against specific alleged terrorists, such as those the U.S. and Israel have engaged in, as "targeted killings," not "assassinations" or "extrajudicial executions."<sup>15</sup> This chapter focuses on legal and policy examinations of the decision to implement targeted killings within the context of the right to active self-defense as interpreted by the State of Israel.<sup>16</sup> This chapter analyzes the legality of targeted killing, under both domestic law and international law.

## **2. Historical legal background**

The discussion of the historical legal background of target killing follows in two parts: targeted killing pre-World War II and post-World War II.

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<sup>12</sup> *Id.*

<sup>13</sup> Daniel Killing, *Targeted Killing*, 5 THEORETICAL INQ. L. 179(2004)

<sup>14</sup> *Id.*, at 180.

<sup>15</sup> W. Jason Fisher, *Targeted Killing, Norms and International Law*, 45 COLUM. J. TRANSNAT'L L. 714, (2006-2007)

<sup>16</sup> Amos Guiora, *Targeted Killing as Active self-Defense*, 36 CASE W. RES. J. INT'L L. 319 (2004)

## A. Pre-World War II

Historically, the idea of killing an enemy's leadership stretches at least as far back as the fourth century B.C., when Emperor Chandragupta Maurya assassinated two Greek governors as part of his conquest of India, though the tactic has become more common over the last century.<sup>17</sup>

*Admiral Isoroku Yamamoto was shot down during World War II*

An incidence of targeted killing by the U.S. was the shooting down of Isoroku Yamamoto. In 1943, Japanese admiral Isoroku Yamamoto, the commander of the Japanese Imperial Navy and the architect of the attack on Pearl Harbor, died when an U.S. pilot shot down the plane carrying him.<sup>18</sup> The U.S. Navy code-breakers intercepted Japanese radio traffic indicating that Yamamoto, known for his fanatical punctuality, would fly over Bougainville Island early morning, April 18, 1943.<sup>19</sup> A Mitsubishi "Betty" Bomber would transport Yamamoto.<sup>20</sup> His route was within range of U.S. P-38 fighters on Guadalcanal.<sup>21</sup> A daring plan was devised to shoot him down.<sup>22</sup> The opportunity was a rare one.<sup>23</sup> Yamamoto was beloved and important to the Japanese people.<sup>24</sup> His loss would deliver a serious blow to Japanese morale.<sup>25</sup> Moreover, as the commander of the

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<sup>17</sup> Uri Friedman, *Targeted Killings: A Short History*, FOREIGN POLICY (THE MAGAZINE), (August 13, 2012)<http://foreignpolicy.com/2012/08/13/targeted-killings-a-short-history/>

<sup>18</sup> Donald Bourgeois, *Historian says Oregonian Rex Barber shot down Yamamoto in World War II*, THE OREGONIAN, (April 20, 2013)[http://www.oregonlive.com/living/index.ssf/2013/04/historian\\_says\\_oregonian\\_rex\\_b.html](http://www.oregonlive.com/living/index.ssf/2013/04/historian_says_oregonian_rex_b.html)

<sup>19</sup> Don Hollway, *Admiral Yamamoto, commander of the Imperial Japanese Navy's Combined Fleet, was the Harvard-educated, poker-playing mastermind of the December 7, 1941, attack*, HISTORY NET, (April 3, 2012)<http://www.historynet.com/death-by-p-38.htm>

<sup>20</sup> Bourgeois, *supra* note 18.

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

Imperial Japanese Navy, his death would be the equivalent of a major battle victory.<sup>26</sup> He died in a targeted killing.

## **B. Post-World War II**

Post-World War II, the idea that targeted killing somehow required greater justification would have been met with bewilderment; there was something troubling about carrying out targeted killing in an armed conflict. The argument was that all lawful killings in an armed conflict are targeted. That is to say, when a soldier on the battlefield identifies a member of the enemy armed forces through his or her rifle scope, fires the shot, and the enemy soldier falls dead, in the most basic and fundamental way, a ‘targeted killing’ occurred.<sup>27</sup> However, in modern times when one speaks of targeted killing, two combatants meeting on a battlefield is not the scenario envisaged.<sup>28</sup> Rather, the contemporary understanding of the term ‘targeted killing’ is understood as deliberate and premeditated killing of specific persons.<sup>29</sup> The tactic of targeted killing has been adopted around the globe by states that possess the capability to conduct such strikes.

In the 1990s, Israel categorically refused to admit to carrying out targeted killings, stating, “the [Israeli Defense Force] wholeheartedly rejects this accusation. There is no policy and there never will be a policy or a reality of willful killing of suspects . . . the principle of the sanctity of life is a fundamental principle of the I.D.F.”<sup>30</sup> In November 2000, the Israeli Government confirmed the existence of a policy which justified targeted killings under theories of self-defense and IHL because the Palestinian Authority was failing to prevent, investigate, and prosecute terrorism.

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<sup>26</sup> *Id.*

<sup>27</sup> Emily Crawford, *Identifying the Enemy: Civilian Participation in Armed Conflict*, at 95 (July 23, 2015)

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*

<sup>30</sup> Philip Alston, *Report of the Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions*, UNGA, at 6 (May 28, 2010)

Especially, suicide attacks directed at Israel.<sup>31</sup> The 2000 policy was reinforced by the issuance of a 2002 legal opinion (only part was published) by the Israeli Defense Force Judge Advocate General on the conditions under which Israel considered targeted killings legal.<sup>32</sup>

In modern times, sniper fire, cruise missiles, Special Ops attacks, helicopter gunships, poisonings, car bombs, and other explosive devices have all been used in targeted killings. The U.S., as recent as the Obama administration, became increasingly reliant upon the employment of drones for carrying out its policy.<sup>33</sup> The U.S. and its allies post September 11, 2001 terrorist attack (9/11) in the War on Terror to target and decapitate the leadership and command structure of Al-Qaeda, the Taliban, and their affiliates have used targeted killing as a method of warfare and counterterrorism.<sup>34</sup>

After 9/11, the availability of drones has encouraged the practice of targeted killings. However, it is an error to equate targeted killing with drone attacks.<sup>35</sup> The U.S. has used drones and airstrikes for targeted killings in the armed conflicts in Afghanistan and Iraq, where the operations are conducted (to the extent publicly known) by the armed forces.<sup>36</sup> The U.S. also reportedly adopted a secret policy of targeted killings soon after 9/11.<sup>37</sup> Pursuant to which the U.S. government has credibly been alleged to engage in targeted killings in the territory of other nation states.<sup>38</sup>

The evolution of legal justifications for the practice of targeted killing became so prominent that the President of the United States personally decides which enemies of the state should live

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<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

<sup>33</sup> Himes, *supra* note 4, at 2.

<sup>34</sup> Bachmann, *supra* note 7, at 260.

<sup>35</sup> Himes, *supra* note 4, at 1.

<sup>36</sup> Alston, *supra* note 30, at 7.

<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

or die.<sup>39</sup> The use of armed drones by the U.S. to target and kill leaders and commanders of Al-Qaeda, the Taliban, and their affiliates in Pakistan (as well as for covert operations in Yemen and Somalia) increased significantly during Obama's first term as President.<sup>40</sup> Well-known examples include, in December 2005, senior al Qaeda operative Abu Hamza Rabia was killed in Pakistan using a drone strike. However, not all efforts have led to favorable results; the targeting of al Qaeda co-leader Ayman al-Zawahiri in January 2006, killed eighteen civilians in Pakistan while allowing him to escape.<sup>41</sup> Now, with the advent of drones, such as "Predator" and "Reaper," it is possible for governments to engage in targeted killing operations, continents away, while sitting at a computer terminal.<sup>42</sup> Thus raising additional legal and policy questions regarding what constitutes an assassination and what may be deemed a permissible targeted killing.<sup>43</sup>

Military strikes against such individuals as Libyan leader Colonel Muammar al-Qadhafi, former Iraqi President Saddam Hussein, and Al-Qaeda leader Osama bin Laden, have raised questions, across the world about the gray area surrounding the law on assassinations and targeted killings.<sup>44</sup> There is no announced U.S. policy directive regarding targeted killings.<sup>45</sup> Assassinations are addressed in Executive Order 12333, which does not prohibit politically motivated killing absolutely, but requires presidential approval.<sup>46</sup> However, assassination and targeted killings are very different acts.<sup>47</sup>

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<sup>39</sup> Friedman, *supra* note 17.

<sup>40</sup> Bachmann, *supra* note 7, at 260.

<sup>41</sup> Fisher, *supra* note 11, at 712.

<sup>42</sup> Mark V. Vlasic, *Assassination and Targeted Killing*, GEORGETOWN JOURNAL OF INTERNATIONAL LAW, (2012) <http://www.cfr.org/counterterrorism/georgetown-journal-international-law-assassination-targeted-killing/p28105>

<sup>43</sup> *Id.*

<sup>44</sup> *Id.*

<sup>45</sup> Gray D. Solis, *The Law of Armed Conflict*, at 542, Cambridge University Press, New York (2010)

<sup>46</sup> *Id.*

<sup>47</sup> *Id.*

### 3. Factors behind targeted killing

There are various factors behind targeted killing. Currently, the kill-to-capture ratio is roughly 30 to 1.<sup>48</sup> In short, “killing is more convenient than capture for both the U.S. and foreign countries” where the suspects are located.<sup>49</sup> It is possible that drones will subtly affect the way in which the military determines whether to capture or kill a target by means that might better avoid civilian deaths.<sup>50</sup> The individuals targeted are alleged terrorists or others deemed dangerous, and the base of their inclusion on kill or capture lists is undisclosed intelligence applied against secret criteria.<sup>51</sup>

The standard means of fighting crime seem unaccommodating in the face of this threat.<sup>52</sup> For example, the chances of capturing Bin Laden and his followers and bringing them to justice were remote, as are the chances of the Israel arresting and trying the leaders of the Hamas and Islamic Jihad.<sup>53</sup> In the case of terrorists who publicly proclaim their own guilt by taking full credit for a terrorist act it would seem unnecessary to hold a public trial to determine guilt, therefore it seems perfectly legal to condemn someone like Osama bin Laden to death even though he was not given a trial.<sup>54</sup> No one, outside al Qaeda, questioned Obama’s right as Commander-in-Chief to target bin Laden and kill him.<sup>55</sup> In these scenarios, targeted killing is more feasible for the government.

An important factor promoting targeted killing is that individuals recently targeted are true

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<sup>48</sup> Himes, *supra* note 4, at 1.

<sup>49</sup> *Id.*

<sup>50</sup> *Id.*

<sup>51</sup> Philip Alston, *The CIA and Targeted Killings Beyond Borders*, NEW YORK UNIVERSITY SCHOOL OF LAW, VOL. 303(September 2011)<https://www.law.upenn.edu/institutes/cecl/conferences/targetedkilling/papers/AlstonCIABeyondBorders.pdf>

<sup>52</sup> Killing, *supra* note 9, at 179.

<sup>53</sup> *Id.*

<sup>54</sup> S. Casey-Maslen, *Pandoras box? Drone strikes under jus ad bellum, jus in bello, and international human rights law*, INTERNATIONAL REVIEW OF THE RED CROSS VOL. 94 NO. 886 at 606 (2012)<https://www.icrc.org/eng/assets/files/review/2012/irrc-886-casey-maslen.pdf>

<sup>55</sup> *Id.*

threats to security.<sup>56</sup> The threat posed by a single leader or a relatively small group of terrorists has provided a rationale for targeted killing as an effective and low-cost way of protecting innocent people and maintaining national security.<sup>57</sup> For example, On November 3, 2002, a U.S. Predator drone launched a missile at a car traveling in a remote part of Yemen, killing six men, all suspected members of the al Qaeda terrorist network.<sup>58</sup> Among the dead was the principal target of the attack, Qaed Sinan al-Harithi, one of Osama bin Laden's former security guards and a key figure in the October 2000 assault on the U.S.S. Cole.<sup>59</sup> In October 2001, drones and aircraft killed Mohammed Atef, the suspected military chief of al Qaeda, in Afghanistan.<sup>60</sup>

The New America Foundation reports, which relies solely on media accounts of attacks, claims that some 291 strikes have been launched since 2009, killing somewhere between 1,299 to 2,264 militants, as of January 2013.<sup>61</sup> Alternate reports document the escalation in drone strikes in recent years, but the accounting of militant and civilian deaths can vary widely depending on the source.<sup>62</sup>

#### 4. Definitions

To the extent that there is no standard, universally accepted definitions of some of the key terms employed in this chapter, there is need to stipulate those working definitions here because it is important to ensure the same basic understanding of those terms at the outset. It will help in

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<sup>56</sup> Himes, *supra* note 4.

<sup>57</sup> *Id.*, at 8.

<sup>58</sup> Fisher, *supra* note 11, at 712.

<sup>59</sup> *Id.*

<sup>60</sup> Michelle Mallette-Piasecki, *Missing the Target: Where the Geneva Conventions Fall Short in the Context of Targeted Killing*, 76 ALB. L. REV. 265(2012-2013)

<sup>61</sup> Jonatha Masters, *Targeted Killings*, CFR, (May 23, 2013)<http://www.cfr.org/counterterrorism/targeted-killings/p9627>

<sup>62</sup> *Id.*

addressing the legal issues that underlie the targeted killing. For this chapter, these terms have these assigned meanings.

### **A. Targeted killing**

“Targeting” is the process of selecting enemy objects to attack, assigning priorities to the selected objects, and matching appropriate weapons to those to assure their destruction.<sup>63</sup> The term targeted killing, however, remains undefined by international law.<sup>64</sup> Targeted killing is not a generally defined legal term in domestic or international law.<sup>65</sup> The term's first use was in 1986 by the human rights group Americas Watch to differentiate the killings of specific individuals by Salvadoran death squads from random killings done by those same death squads during that nation's civil war.<sup>66</sup>

The usage of the term, targeted killing, had greater prominence from Israel in 2000, when Israel stated its policy to eliminate selected Palestinian militants.<sup>67</sup> Moreover, the term targeted killing had been further fueled by the popularity of the media's usage in reports of Israeli strike operations targeting to kill leaders and senior members of terrorist organizations.<sup>68</sup> Targeted killing is not a term distinctly defined under international law, but gained currency in 2000 after Israel made public a policy of targeting alleged terrorists in the Palestinian territories.<sup>69</sup>

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<sup>63</sup> Solis, *supra* note 45, at 519.

<sup>64</sup> Himes, *supra* note 4, at 2.

<sup>65</sup> Kenneth Anderson, *Targeted Killing in U.S. Counterterrorism Strategy and Law, A Working Paper of the Series on Counterterrorism and American Statutory Law, a joint project of the Brookings Institution*, THE GEORGETOWN UNIVERSITY LAW CENTER, AND HOOVER INSTITUTION, at 9 (May 11, 2009)

<sup>66</sup> Himes, *supra* note 4, at 2.

<sup>67</sup> Adam Leong Kok Wey, *Targeted Killing and Lessons from History: Leadership Killings in World War II; Strategy and strategic Performance*, UNIVERSITY OF READING at 2 <https://ecpr.eu/Filestore/PaperProposal/e460a96b-9f81-4e99-a6c1-81295234e33b.pdf> (Nils Melzer: *Targeted Killing in International Law* at 28 (Oxford: Oxford University Press, 2008)

<sup>68</sup> *Id.*

<sup>69</sup> Masters, *supra* note 61.

There are other definitions too, the act of lethal force, usually undertaken by a nation's intelligence or armed services, can vary widely—from cruise missiles to drone strikes to special operations raids.<sup>70</sup> According to a U.N. special report, targeted killings are premeditated acts of lethal force employed by states in times of peace or during armed conflict to eliminate specific individuals outside their custody.<sup>71</sup>

There is no general accepted definition of targeted killing but a reasonable definition is the intentional killing of a specific civilian or unlawful combatant who cannot reasonably be apprehended, who is taking a direct part in hostilities, the targeting done at the direction of the state, in the context of an international or non-international armed conflict.<sup>72</sup> Targeted killing is extra-judicial, premeditated killing by a state of a specifically identified person not in its custody.<sup>73</sup> States have used this tool, secretly or not, throughout history.<sup>74</sup> In recent years, targeted killing has generated new controversy as two states in particular- Israel and the U.S. – that have struggled against opponents embedded in civilian populations.<sup>75</sup>

To ensure the same basic understanding of the term “targeted killing” for the purpose of this chapter, this preliminary definition should help readers in addressing the legal issues that underlie the use of drones and targeted killing. “Targeting” is the process of selecting enemy objects to attack, assigning priorities to the selected objects, matching appropriate weapons and [intelligence] to those to assure their destruction.<sup>76</sup> Targeted killings are premeditated acts of lethal force

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<sup>70</sup> *Id.*

<sup>71</sup> *Id.*

<sup>72</sup> Solis, *supra* note 45, at 538.

<sup>73</sup> Richard Murphy & Afsheen John Radsan, *Due Process and Targeted Killing of Terrorists*, 31 CARDOZO L. REV. 405 (2009-2010)

<sup>74</sup> *Id.*

<sup>75</sup> *Id.*

<sup>76</sup> Solis, *supra* note 45, at 519.

employed by states in times of peace or during armed conflict to eliminate specific individuals outside their custody.<sup>77</sup>

## **B. Assassination**

Assassination, as defined by Army JAG Tyler Harder, is “the murder of a targeted individual for a political purpose.”<sup>78</sup> Although widely practiced in different historical eras, now assassination is now commonly viewed negatively and is banned by international treaty.<sup>79</sup> Customary law also proscribes it.<sup>80</sup> Both Hugo Grotius in the seventeenth century and Emer de Vattel in the eighteenth century, forerunners of modern international law, viewed assassination as a violation of the norms of statecraft.<sup>81</sup>

The term assassination, at least in general parlance, means the murder of a political figure.<sup>82</sup> Some scholars have attempted to draw the distinction between "targeted killing" and "assassination" by saying that peacetime assassinations are illegal just as wartime assassinations are, defining the latter as "the targeting [and killing] of an individual ...[using] treacherous means."<sup>83</sup> Countries have been in the business of targeted assassinations for centuries.<sup>84</sup> For example, the U.S. involvement in multiple attempts for assassination of former Cuban president Fidel Castro.<sup>85</sup> Fabian Escalante, who protected Castro, claims that there were 638 CIA plots to

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<sup>77</sup> Masters, *supra* note 61.

<sup>78</sup> Adriana Aristeiguieta, *Targeted Killings (An Analysis from an Intelligence Perspective)*, ACADEMIA (accessed on May 9, 2016)

[http://www.academia.edu/3832440/Targeted\\_Killings\\_An\\_Analysis\\_from\\_an\\_Intelligence\\_Perspective\\_](http://www.academia.edu/3832440/Targeted_Killings_An_Analysis_from_an_Intelligence_Perspective_)

<sup>79</sup> Himes, *supra* note 4, at 3.

<sup>80</sup> *Id.*

<sup>81</sup> *Id.*

<sup>82</sup> Om M. Jahagirdar, J. ISLAMIC L. & CULTURE VOL. 10 233 (July 2008)

<sup>83</sup> *Id.*

<sup>84</sup> Gabriella Blum & Philip Heymann, *Law and Policy of Targeted Killing*, 1 HARV. NAT'L SEC. J. 145(2010)

<sup>85</sup> Hannah Parry, *From poisoned cigars to exploding seashells: How Fidel Castro survived 'more than 600' CIA assassination attempts before passing away*, DAILYMAIL, at 90, (November 26,

assassinate him.<sup>86</sup> From an exploding cigar and exploding seashells, to a poisonous fountain pen and a mafia-style execution, the CIA made countless attempts to topple the Cuban leader in the 1960s.<sup>87</sup>

## 5. Who can be targeted under IHL?

Analyses on the international lawfulness of targeted killing often begins with questioning whether the IHL or by human rights law govern these operations.<sup>88</sup> As far as the applicability of IHL is concerned, it is recognized that it presupposes the existence of a situation of armed conflict.<sup>89</sup> In 1997 *Prosecutor v. Tadic*,<sup>90</sup> the court stated:

We find that an armed conflict exists whenever there is a resort to armed force between States or protracted armed violence between governmental authorities and organized armed groups or between such groups within a State. IHL applies from the initiation of such armed conflicts and extends beyond the cessation of hostilities until a general conclusion of peace is reached; or, in the case of internal conflicts, a peaceful settlement is achieved. Until that moment, IHL continues to apply in the whole territory of the warring States or, in the case of internal conflicts, the whole territory under the control of a party, whether or not actual combat takes place there.<sup>91</sup>

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2016)<http://www.dailymail.co.uk/news/article-3973264/From-poisoned-cigars-exploding-seashells-Fidel-Castro-survived-half-century-crackpot-CIA-assassination-attempts-passing-away-90.html>

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

<sup>88</sup> Nils Melzer, *Targeted Killing in International Law*, at 55, OXFORD UNIVERSITY PRESS (2008).

<sup>89</sup> *Id.*

<sup>90</sup> *Prosecutor v. Tadic*, Case No. IT-94-1-T, Judgment, ¶¶ 664–66 (Int'l Crim. Trib. for the Former Yugoslavia) May 7, 1997.

<sup>91</sup> *Id.* Also see, Rommel Casis, *Predator Principles: Laws of Armed Conflict and Targeted Killings*, 85 Phil. L. J. 334, (2010-2011)

Under IHL, in armed conflict lethal force may be used against combatants, fighters, and against civilians taking a direct part in hostilities. A civilian does not become a combatant merely by picking up a weapon.<sup>92</sup> In order to qualify as a combatant an individual must belong to a group that has an internal disciplinary system which, *inter alia*, shall enforce compliance with the rules of international law applicable in armed conflict.<sup>93</sup> More difficult is the scope of legal authority to kill persons who do *not* pose an imminent threat.<sup>94</sup> It is commonly (but not universally) accepted that for such killing to be legal, it must comply with IHL.<sup>95</sup>

Armed conflicts can be either "international" or "non- international."<sup>96</sup> In *Hamdan v. Rumsfeld*, the United States Supreme Court held that the conflict with al Qaeda is of the non-international type.<sup>97</sup> It is taken as given that the Court's characterization is correct-as non-international armed conflict does in fact exist between al Qaeda and the U.S., which leaves room for IHL to apply.<sup>98</sup> The law of non-international armed conflicts, however, is best understood in light of the much better developed law of international armed conflicts.<sup>99</sup> The states creating IHL, in 1949 and amending it in 1977, did not intend to privilege terrorist organizations over any other form of armed group, and reading customary law to conclude otherwise would violate this intent.<sup>100</sup>

## **6. Justifications for drone targeted killing in modern times**

This section examines the operational, self-defense and moral justification given for the

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<sup>92</sup> Michael Lewis & Vincent Vitkowsky, *The Use of Drones and Targeted Killings in Counterterrorism*, VOL. 12, ISSUE 1, at 73, (June 2011)

<sup>93</sup> *Id.*

<sup>94</sup> Murphy & Radsan, *supra* note 73, at 414.

<sup>95</sup> *Id.*, at 415.

<sup>96</sup> *Id.*, at 416.

<sup>97</sup> *Id.*

<sup>98</sup> *Id.*

<sup>99</sup> *Id.*

<sup>100</sup> Lewis & Vitkowsky, *supra* note 92.

targeted killing. Targeted killing falls within the ambit of several legal regimes including the LOAC (*jus in bello*), international human rights law, the law on international use of force (*jus ad bellum*), and domestic laws.<sup>101</sup>

### **A. Operational justifications**

The U.S. adopted drone targeted killing as an essential tactic to pursue those responsible for 9/11.<sup>102</sup> The Pentagon and the CIA have employed this controversial practice with more frequency in recent years, both as part of combat operations in Afghanistan and Iraq and in counterterrorism efforts in Pakistan, Yemen, and Somalia.<sup>103</sup> The basis of adoption of justifications for operations tactics are various factors such as intelligence, surgical strikes, and military necessity.

#### **I. Intelligence**

If all goes as planned, there are only terrorists and no civilians in the targeted building or vehicle.<sup>104</sup> However, war never goes entirely as planned not even war conducted by remote control.<sup>105</sup> The basis of targeting is intelligence, which can never be perfect.<sup>106</sup>

Target killing's broadest policy description is "intelligence," but that term encompasses an extraordinarily heterogeneous set of activities.<sup>107</sup> These include classical intelligence gathering functions, such as surveillance—including telecommunications and Internet surveillance, human

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<sup>101</sup> Rommel Casis, *Predator Principles: Laws of Armed Conflict and Targeted Killings*, 85 PHIL. L. J. 331, (2010-2011)

<sup>102</sup> Masters, *supra* note 61.

<sup>103</sup> *Id.*

<sup>104</sup> Eugene Robinson, *Do we still think drones are a good idea?* THE WASHINGTON POST, (April 23, 2015) [https://www.washingtonpost.com/opinions/inevitable-consequences-of-drone-attacks/2015/04/23/ea943f02-e9f1-11e4-aae1-d642717d8afa\\_story.html?utm\\_term=.68a8c657a0c1](https://www.washingtonpost.com/opinions/inevitable-consequences-of-drone-attacks/2015/04/23/ea943f02-e9f1-11e4-aae1-d642717d8afa_story.html?utm_term=.68a8c657a0c1)

<sup>105</sup> *Id.*

<sup>106</sup> *Id.*

<sup>107</sup> Anderson, *supra* note 65, at 5.

intelligence, satellite and observation intelligence, and analysis of material collected by whatever other means.<sup>108</sup> They also include intelligence community, law enforcement, military, and diplomatic coordination and exchange of information with friends and allies abroad.<sup>109</sup>

The fact that terrorist do not wear uniform; therefore, drones collect vital information for carrying targeted killing of the terrorists. However, targeted killing may also interfere with important gathering of critical intelligence.<sup>110</sup> The threat of being targeted will drive current leaders into hiding, making the monitoring of their movements and activities by the counterterrorist forces more difficult.<sup>111</sup> Moreover, if these leaders are found and killed, instead of captured, the counterterrorism forces lose the ability to interrogate them to obtain potentially valuable information about plans, capabilities, or organizational structure.<sup>112</sup>

The administrations that follow it will rely increasingly on intelligence-based uses of force in counterterrorism undertaken outside the U.S.<sup>113</sup> However; the activity is characterized as a legal matter or as a public relations label or policy euphemism.<sup>114</sup> The U.S. administrations will rely upon targeted killing as a means of dealing with suspected terrorists—with al Qaeda, its successors, imitators and emulators, and with those who come after it.<sup>115</sup> Whether they share similar or dissimilar ideological causes, and whether or not Congress has passed a successor to the Authorization for the Use of Military Force.<sup>116</sup>

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<sup>108</sup> *Id.*

<sup>109</sup> *Id.*

<sup>110</sup> Blum & Heymann, *supra* note 84, at 165.

<sup>111</sup> *Id.*

<sup>112</sup> *Id.*

<sup>113</sup> Anderson, *supra* note 65, at 6.

<sup>114</sup> *Id.*

<sup>115</sup> *Id.*

<sup>116</sup> *Id.*

After 9/11, drones are conducting over 95% of all non-battlefield targeted killings.<sup>117</sup> Under the Bush Administration, the CIA mostly engaged in "personality" strikes targeting known terrorists with firmly established identities. The CIA establishes these identities through intelligence, including visual surveillance and electronic and human intelligence.<sup>118</sup> Caitlin Hayden, a spokesperson for the National Security Council, emphasized, "our assessments are not based on a single piece of information. Following section will gather and scrutinize information from a variety of sources and methods before drawing conclusions."<sup>119</sup>

#### **a. Ground intelligence**

Beyond technology, success in Afghanistan and Pakistan, and anywhere else, depends crucially upon on-the-ground intelligence long before the launching of any Predator.<sup>120</sup> The U.S. has invested many years in the past decade [2000's] of war in Afghanistan in establishing its own intelligence network on the ground that is able to supply information with respect to both counterinsurgency operations on both sides of the border, as well as with counterterrorism activities and targeting inside Pakistan.<sup>121</sup> The CIA has been the lead agency.<sup>122</sup> The reason why the CIA, rather than the military, is tasked with much of the drone use in the border areas of Pakistan; is it has the intelligence networks.<sup>123</sup> This is a source of irritation to the Pakistani government, which is no longer able to steer U.S. targeting and intelligence activities.<sup>124</sup> The

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<sup>117</sup> *Background of the Issue*, PROCON.ORG, (updated September 14, 2016) <http://drones.procon.org/view.resource.php?resourceID=006599>

<sup>118</sup> *Id.*

<sup>119</sup> Jeremy Scahill & Glenn Greenwald, *The NSA's Secret Role in the U.S. Assassination Program*, THE INTERCEPT, (February 9, 2014) <https://theintercept.com/2014/02/10/the-nsas-secret-role/>

<sup>120</sup> Claire Finkelstein, Jens David Ohlin, & Andrew Altman, *Targeted Killings: Law and Morality in an Asymmetrical World*, at 386, OXFORD UNIVERSITY PRESS (2012)

<sup>121</sup> *Id.*

<sup>122</sup> *Id.*

<sup>123</sup> *Id.*

<sup>124</sup> *Id.*

precision of strikes with respect to civilian casualties, and the ability to determine whom the U.S. should target and ensure that this is the person actually targeted by a drone.<sup>125</sup> This is a function of the CIA's intelligence capabilities on the ground, integrating a human network together with signals intelligence.<sup>126</sup>

Ground-level intelligence operations are vital part of making precision weapons precise; drone technology cannot make up for that capability, just as reliance upon pure signals intelligence is insufficient to direct targeting.<sup>127</sup> All of these aspects must be integrated.<sup>128</sup> Drones are only as useful as their supporting intelligence. The only kind that works over the long run, as Libya teaches in one direction and Afghanistan in the other, are dense ground-level networks of human intelligence integrated with signals intelligence and long-running drone surveillance.<sup>129</sup> However, after 9/11 when the U.S. went to Afghanistan they had zero ground level intelligence so they had to depend upon electronic intelligence especially on drones. Ground intelligence may be reliable but the question arises if it can be trusted.

#### **b. Electronic intelligence**

The lack of human intelligence has placed a greater stress on signals intelligence to provide military commanders with greater knowledge of dangerous actors and potential threats.<sup>130</sup> The National Security Agency (NSA) is using complex analysis of electronic surveillance, rather than human intelligence, as the primary method to locate targets for lethal drone strikes – an unreliable tactic

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<sup>125</sup> *Id.*

<sup>126</sup> *Id.*

<sup>127</sup> *Id.*

<sup>128</sup> *Id.*

<sup>129</sup> *Id.*

<sup>130</sup> Mark Pomerleau, *How technology has changed intelligence collection*, DEFENSE SYSTEMS, (April 22, 2015) <https://defensesystems.com/articles/2015/04/22/technology-has-changed-intelligence-gathering.aspx>

that results in the deaths of innocent or unidentified people.<sup>131</sup> According to a former drone operator for the military's Joint Special Operations Command (JSOC) who also worked with the NSA, the agency often identifies targets based on controversial metadata analysis and cell-phone tracking technologies.<sup>132</sup> Rather than confirming a target's identity with operatives or informants on the ground, the CIA or the U.S. military then orders a strike based on the activity and location of the mobile phone a person is believed to be using.<sup>133</sup> The former JSOC drone operator estimates that the overwhelming majority of high-value target operations he worked on in Afghanistan relied on signals intelligence, known as SIGINT, based on the NSA's phone-tracking technology.<sup>134</sup>

In one tactic, the NSA "geolocates" the SIM card, or handset of a suspected terrorist's mobile phone, enabling the CIA and U.S. military to conduct night raids and drone strikes to kill or capture the individual in possession of the device.<sup>135</sup> Electronic intelligence plays an important role in targeted killing.

### **c. Drone**

Drones have become a crucial tool for intelligence work, and they are hastening dramatic changes in the field.<sup>136</sup> As they are pilotless, drones can dwell over targets for long periods, collecting massive amounts of intelligence data.<sup>137</sup> During the lengthy counterinsurgency campaigns in Iraq and Afghanistan, this capability was a valuable asset to American ground

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<sup>131</sup> Scahill & Greenwald, *supra* note 119.

<sup>132</sup> *Id.*

<sup>133</sup> *Id.*

<sup>134</sup> *Id.*

<sup>135</sup> *Id.*

<sup>136</sup> *Intelligence, Surveillance, and Reconnaissance*, CENTER FOR THE STUDY OF THE DRONE AT BARD COLLEGE, (accessed on May 15, 2017) <http://dronecenter.bard.edu/multimedia-portals/intelligence-portal/>

<sup>137</sup> *Id.*

forces.<sup>138</sup> For example, a Navy SEAL team achieved President Barack Obama's greatest success in the War on Terrorism, the killing of Osama bin Laden in May 2011 in Abbottabad, Pakistan.<sup>139</sup> The hallmarks of the U.S. approach were the same.<sup>140</sup> Intelligence agencies ascertained the identity and location of the al-Qaeda leader using a variety of information sources including interrogations, electronic intercepts, satellite reconnaissance, and human agents.<sup>141</sup> This intelligence eventually supported a real-time operation targeting a specific individual rather than a military unit, asset, or location.<sup>142</sup> The use of a strike team, rather than a drone missile, allowed SEALs to verify bin Laden's death and capture items of valuable physical intelligence.<sup>143</sup> The ultimate goal of the bin Laden operation was identical to that of prior operations: to kill a specific individual because of their leadership role in al-Qaeda.<sup>144</sup>

Advanced satellites and drones, both of which keep soldiers out of harm's way, have allowed military and covert organizations to shy away from human intelligence gathering, or at the very least, rely on it less.<sup>145</sup> In an article for *Global Securities Studies* in 2013, Gabriel Margolis pointed out that, "UAVs are the ultimate intelligence platform."<sup>146</sup> However, there are those who are against the use of drones as intelligence gathering platform. Regardless of the arguments for and against drone use, U.S. military forces and intelligence agencies will continue to utilize drones since they are perceived as being reasonably effective in disrupting terrorist networks and keeping U.S. troops out of harm's way.<sup>147</sup>

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<sup>138</sup> *Id.*

<sup>139</sup> John Yoo, *Assassination or Targeted Killings after 9/11*, 56 N.Y. L. SCH. L. REV. 59, (2011-2012)

<sup>140</sup> *Id.*

<sup>141</sup> *Id.*

<sup>142</sup> *Id.*

<sup>143</sup> *Id.*

<sup>144</sup> *Id.*

<sup>145</sup> Pomerleau, *supra* note 130.

<sup>146</sup> *Id.*

<sup>147</sup> Nadav Morag, *The Debate Over Drone Use in U.S. Military and Intelligence Operations*, COLORADO TECHNICAL UNIVERSITY, (October 23, 2015) <http://www.coloradotech.edu/resources/blogs/october-2015/the-debate-over-drone-use-in-us-military-intelligence-operations>

At the same time, the debate will continue given the issue's complexity and the arguments surrounding its legality and impact on national safety and reducing terrorism.<sup>148</sup> Drones play vital role in collecting important intelligence.

## II. Signature strikes

One of the most controversial types of targeted killing is the activity called “signature strikes” or, more recently, “terrorist attack disruption strikes.”<sup>149</sup> President Obama ordered two different types of drone attacks: *personality strikes* that target “named, high-value terrorists,” and *signature strikes* that target training camps and “suspicious compounds in areas controlled by militants.”<sup>150</sup> There are some facts that have come out due to leaks, on the ground research in the Middle East region, and occasional background briefings.<sup>151</sup> In the strict sense, signature strikes do not really function as targeted killings because the specific identities of the targets are unknown.<sup>152</sup>

In the targeted killing of individuals, the U.S. has undertaken what is known as ‘signature strikes’, that is the targeted killing of individuals whose names are unknown but their behavior allegedly gives them the ‘signature’ or ‘hallmark’ of insurgents/terrorists.<sup>153</sup> In media reports, U.S. officials have offered scenarios of signature strikes hitting training camps or fighters who might

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<sup>148</sup> *Id.*

<sup>149</sup> Himes, *supra* note 4, at 10.

<sup>150</sup> Marjorie Cohn, *Drones and Targeted Killing: Legal, Moral and Geopolitical Issues*, THOMAS JEFFERSON SCHOOL OF LAW, at 2, (2014)

<sup>151</sup> Himes, *supra* note 4, at 10.

<sup>152</sup> *Id.*

<sup>153</sup> Chris Cole, *Drones and Targeted Killing*, DRONE WARS UK, (October 2014) <https://dronewars.net/drones-and-targeted-killing/>

cross the border from Pakistan to Afghanistan.<sup>154</sup> The CIA reportedly uses drone surveillance and other intelligence to try to ensure those targeted are in fact militants.<sup>155</sup> For example, the CIA has engaged in “staggered drone strikes” or “double-tap” strikes, using a second attack to kill rescuers who arrive at the scene of the initial attack upon the first victims, the presumption being that fellow jihadists would come to the rescue.<sup>156</sup>

There remain troubling, unanswered aspects of drone strikes, how the policy of “signature strikes”—killing anonymous men who appear to be associated with terrorist or militant armies through observable behavior—comport with the bedrock principle of distinction founded in IHL.<sup>157</sup>

There is different justification given for the legality of signature strikes. It was exceedingly difficult to judge the legality of such strikes because of the secrecy surrounding operations.<sup>158</sup> *John Brennan CIA director* said, “everything we do, though, that is carried out against Al Qaeda is carried out consistent with the rule of law, the authorization on the use of military force, and domestic law... that’s the whole purpose of whatever action we use, the tool we use, it’s to prevent attack [sic] and to save lives.”<sup>159</sup> Jennifer Daskal, a professor at Georgetown Law School and a former attorney in the Justice Department during the first Obama administration said, “in a traditional conflict, there is no requirement that you know every single person’s identity before

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<sup>154</sup> Cora Currier & Justin Elliot, *Drone Warfare “Signature Strikes,”* GLOBAL RESEARCH, (February 27, 2013) <http://www.globalresearch.ca/drone-warfare-signature-strikes/5324491>

<sup>155</sup> *Id.*

<sup>156</sup> Himes, *supra* note 4, at 10.

<sup>157</sup> Micah Zenko, *Obama’s Embrace of Drone Strikes Will be a Lasting Legacy,* THE NEW YORK TIMES, (January 12, 2016) <https://www.nytimes.com/roomfordebate/2016/01/12/reflecting-on-obamas-presidency/obamas-embrace-of-drone-strikes-will-be-a-lasting-legacy>

<sup>158</sup> Don Roberts & Alan Yuhas, *Obama: US was not ‘cavalier’ over hostage drone killings,* THE GUARDIAN, (April 24, 2015) <https://www.theguardian.com/world/2015/apr/24/obama-drone-strikes-killed-hostages>

<sup>159</sup> Currier & Elliot, *supra* note 154.

you strike, so long as there are reasonable grounds for determining that the target is part of the enemy force.”<sup>160</sup>

### III. Consideration of Military necessity

The employment of targeted killing should only occur when it is necessary to prevent a terrorist attack.<sup>161</sup> This inserts a further burden of proof on state authorities, not only must they positively demonstrate that the suspected individual is a member of a terrorist organization, they must also demonstrate that killing that individual is necessary to prevent further attack.<sup>162</sup> Although the evidential burden should be strict, an individual's past actions will likely be a factor in assessing the probability of future threat.<sup>163</sup> Assessed against the principle of necessity, a targeted killing will be lawful if: there is no reasonable possibility of arresting the terrorist, the killing is necessary to prevent future attacks, and there is verified proof of the identity of the terrorist and intent to commit future terrorist acts.<sup>164</sup>

As far as the conduct of hostilities is concerned, there is general agreement that, in principle, the resort to targeted killings is permissible as long as the targeted individuals are legitimate military targets, that is to say, combatants or civilians directly participating in hostilities.<sup>165</sup> Remarks by a number of authors suggest that the requirement of military necessity prohibits the targeted killing of an individual combatant (or directly participating in hostilities) in a situation where such killing is the targeted person could have been captured without unreasonable risk to

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<sup>160</sup> *Id.*

<sup>161</sup> Scott MacDonald, *The Lawful Use of Targeted Killing in Contemporary International Humanitarian Law*, JOURNAL OF TERRORISM RESEARCH, 2(3), (November 11, 2011) <http://jtr.st-andrews.ac.uk/articles/10.15664/jtr.232/>

<sup>162</sup> *Id.*

<sup>163</sup> *Id.*

<sup>164</sup> *Id.*

<sup>165</sup> Melzer, *supra* note 88, at 56.

the operating forces.<sup>166</sup> Moreover, apart from rare exceptions, there is general agreement that targeted killings must comply with the prohibitions of treachery and perfidy.<sup>167</sup> In this respect, targeted killings conducted through air strikes from clearly marked military aircraft do not raise much concern, where the use of undercover commandos disguising themselves as civilians is seen as problematic.<sup>168</sup>

## **B. Self-defense justifications**

Governments that engage in targeted killing usually invoke self-defense as a primary justification. This section assesses the justification of drone-targeted killing in combating terrorism and its role within the norm of state self-defense in the international community. This section includes self-defense theory, The Authorization for Use of Military Force (AUMF) and U.N. charter.

### **I. Self-defense theory**

The justification for targeted killing rests in the assertion of national self-defense.<sup>169</sup> The focus of this chapter is on whether the U.S. can lawfully kill terrorist leaders who are at war with the U.S.<sup>170</sup> A host of interesting questions arise from the use of drones, including the use of force in self-defense against non-state actors, the use of force across state boundaries, the nature and content of state consent to such operations, and the use of targeted killing as a lawful and effective

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<sup>166</sup> *Id.* at 57.

<sup>167</sup> *Id.*

<sup>168</sup> *Id.*

<sup>169</sup> Solis, *supra* note 45, at 540.

<sup>170</sup> Jahagirdar, *supra* note 82, at 241.

counterterrorism measure.<sup>171</sup>

The joint resolution passed by the U.S. Congress after the 9/11 attacks provided broad authority for then President Bush to fight the terrorists who attacked on that fateful day.<sup>172</sup> Right after 9/11 the policy was focused on “high-value targets” (HVTs), terrorists perceived to be significant actors in al-Qaida.<sup>173</sup> The U.S. domestic law—the law codifying the existence of the CIA and defining its functions—has long accepted implicitly at least some uses of force.<sup>174</sup> This includes targeted killing, as self-defense toward ends of vital national security that do not necessarily fall within the strict terms of armed conflict in the sense meant by the Geneva Conventions and other international treaties on the conduct of armed conflict.<sup>175</sup>

More than any other counterterrorism tactic, targeted killing operations display the tension between addressing terrorism as a crime and addressing it as war.<sup>176</sup> The right of a government to use deadly force against a citizen is constrained by both domestic criminal law and international human rights norms that seek to protect the individual's right to life and liberty.<sup>177</sup> In the U.S. law enforcement officers face punishment for their individual guilt.<sup>178</sup> Their guilt must be proven in a court of law, with the individual facing a fair trial guaranteed by the protections of due process.<sup>179</sup> Killing an individual without facing individual guilt is allowed only in very limited circumstances, such as self- defense (where the person poses an immediate threat) or the immediate necessity of

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<sup>171</sup> Laurie Blank, *After “Top Gun”: How Drone Strikes Impact the Law of War*, U. PA. J. INT’L L. VOL. 33:3, 679 (March 14, 2012)

<sup>172</sup> Jahagirdar, *supra* note 82, at 241.

<sup>173</sup> Himes, *supra* note 4, at 6.

<sup>174</sup> Anderson, *supra* note 65, at 3.

<sup>175</sup> *Id.*

<sup>176</sup> Blum & Heymann, *supra* note 84, at 145.

<sup>177</sup> *Id.*

<sup>178</sup> *Id.*

<sup>179</sup> *Id.*

saving more lives. In almost any other case, it would be clearly unlawful, tantamount to extrajudicial execution or murder.<sup>180</sup>

## II. AUMF

Using this view of the AUMF, the President of the United States can authorize the targeted killing of many terrorist leaders in the current war on terror.<sup>181</sup> According to AUMF passed by Congress in the days following 9/11,

The President is authorized to use all necessary and appropriate force against those nations, organizations, or persons he determines planned, authorized, committed, or aided the terrorist attacks that occurred on September 11, 2001, or harbored such organizations or persons, in order to prevent any future acts of international terrorism against the United States by such nations, organizations or persons.<sup>182</sup>

Under the auspice of this provision, the U.S. posits that it is justified in using force against members of al Qaeda as a legitimate method of warfare-as part of a global non-international armed conflict.<sup>183</sup>

## III. United Nation Charter

The secondary justification for the targeted killings conducted by the U.S.-self-defense is

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<sup>180</sup> *Id.*, at 146.

<sup>181</sup> Jahagirdar, *supra* note 82, at 242.

<sup>182</sup> *107th Congress*, PUBLIC LAW 107-40—(September 18, 2001) <http://www.gpo.gov/fdsys/pkg/PLAW-107publ40/pdf/PLAW-107publ40.pdf>

<sup>183</sup> Mallette-Piasecki, *supra* note 60, at 76.

found in Article 51 of the UN Charter.<sup>184</sup> Article 51 of the UN charter states in relevant parts: “nothing in relevant parts: “nothing in the present charter shall impair the inherent right off individual or collective self-defense if an armed attack occurs against a member of the United Nations.”<sup>185</sup> There is "no specific definition of 'self- defense' or 'armed attack'...the only evidence customary international law provides as to its scope arises from <sup>what</sup> is now called the *Caroline Case*.<sup>186</sup> This case arose when British troops, in 1837, launched an attack on a U.S. ship called the *Caroline*.<sup>187</sup> This ship was moving arms and volunteers to Canadian secessionists.<sup>188</sup>The U.S. Secretary of State at the time, Daniel Webster, responded to that attack, claiming that the situation was not one of self-defense.<sup>189</sup>

Article 51 of the United Nations Charter applies even if selective responsive force directed against a non-state actor occurs within a foreign country.<sup>190</sup> It is lawful to target those who are direct participants in armed attacks.<sup>191</sup> The key criteria for determining the nature of the conflict in this case, is based on the legal status of the opposing parties; a conflict between two or more states is international, while a conflict between a state and a non-state armed group (or between armed groups) is non-international.<sup>192</sup> For these reasons, and based on more detailed examination

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<sup>184</sup> *Id.*

<sup>185</sup> Jahagirdar, *supra* note 82, at 243.

<sup>186</sup> *Id.*

<sup>187</sup> *Id.*

<sup>188</sup> *Id.*

<sup>189</sup> *Id.*

<sup>190</sup> Jordan J. Paust, *Self-Defense Targeting of Non-State Actors and Permissibility of U.S. Use of Drones in Pakistan*, J. of Transitional Law & Policy, vol. 19.2, at 238-39

[http://archive.law.fsu.edu/journals/transnational/vol19\\_2/paust.pdf](http://archive.law.fsu.edu/journals/transnational/vol19_2/paust.pdf)

<sup>191</sup> Jordan Paust, *Operationalizing use of drones against non-state terrorists under the international law of self-defense*, 8 Alb. Gov't L. Rev. at 203 2015.

<sup>192</sup> Noam Lubell and Nathan Derejko, *A Global Battlefield? Drones and the Geographical Scope of Armed Conflict*, J INT CRIMINAL JUSTICE VOL. 11 ISSUE 1 at 3 (2013).

elsewhere of the applicable law, this work proceeds on the premise that international armed conflicts are those between states, while an armed conflict between a state and an organized armed group should be classified as non-international, even if it includes an extraterritorial manifestation.<sup>193</sup>

### **C. Moral justification for targeted killing**

The moral legitimacy of targeted killing becomes clearer when compared to the alternative means of fighting terror - that is, the massive invasion of the community that shelters and supports the terrorists in an attempt to catch or kill the terrorists and destroy their infrastructure.<sup>194</sup> The U.S. adopted this mode of operation, for example, and Britain in Afghanistan and by Israel in its "Operation Defensive Shield" carried out after the terrorist Passover massacre in March 2002.<sup>195</sup> While many claim this method is morally preferable to targeted killing because it bears more of a resemblance to "real" war and some disagree to it.<sup>196</sup>

First, invading a civilian area inevitably leads to the deaths and injury of far more people, mostly innocent people, than careful use of targeted killing.<sup>197</sup> Second, such actions bring death, misery, and destruction to people who are only minimally involved (if at all) in, or responsible for, terror or military attacks, whereas with targeted killing, collateral damage is significantly reduced (though not prevented altogether).<sup>198</sup> Hence, targeted killing is the preferable method not only because, on a utilitarian calculation, it saves lives - a very weighty moral consideration - but also because it is more commensurate with a fundamental condition of justified self-defense that those

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<sup>193</sup> *Id.*

<sup>194</sup> Daniel Statman, *Targeted Killing*, 5 THEORETICAL INQ. L. 186, (2004)

<sup>195</sup> *Id.*, at 187.

<sup>196</sup> *Id.*

<sup>197</sup> *Id.*

<sup>198</sup> *Id.*

killed are those responsible for the threat posed.<sup>199</sup>

### **I. Is there armed conflict?**

Most legal analyses focusing on the policies of targeted killing adopted by Israel and the U.S. address the question as to whether the Israeli-Palestinian confrontation, and the War on Terrorism can be regarded as an international or non-international armed conflict within the meaning of IHL.<sup>200</sup> “The trick is to define ‘armed conflict’ in an age of non-state-affiliated terrorist and insurgent groups operating from places where the writ of a central government does not extend.”<sup>201</sup> Perhaps the basic issue in the debate is whether targeted killing is simply extrajudicial execution, prohibited by international and domestic law, since terrorists are civilians.<sup>202</sup> The terrorists are criminals, not combatants, it is claimed, and should be captured and arrested using ordinary law enforcement measures and then prosecuted and punished according to the criminal justice system.<sup>203</sup>

However, as President Obama (in his May 23, 2013 speech on counterterrorism) reemphasized that view, stating that under both domestic and international law, the U.S. is at war with al Qaeda, the Taliban, and their associated forces.<sup>204</sup> His claim was based on that assertion, the USG claims that a jus ad bellum analysis need not be undertaken with respect to *each* individual targeting strike, as the jus ad bellum trigger is automatically satisfied more generally based on the

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<sup>199</sup> *Id.*

<sup>200</sup> Melzer, *supra* note 88, at 55.

<sup>201</sup> Himes, *supra* note 4, at 16.

<sup>202</sup> *Id.*, at 15.

<sup>203</sup> *Id.*

<sup>204</sup> *Legality of Targeted Killing Program under International Law*, LAWFARE, (BLOG) <https://www.lawfareblog.com/legality-targeted-killing-program-under-international-law>

existence of a continuing NIAC.<sup>205</sup> May Ellen O’Connell has argued that the USG targeting program violates the necessity and proportionality requirements of jus ad bellum, but others, such as Harold Koh and John Brennan, have disputed that assertion.<sup>206</sup>

## II. Moral hazard

Moral hazard is a philosophical and economic concept that describes the situation in which an agent has a perverse incentive to take an unnecessary risk because that agent does not incur the full possible costs of failure or faces no repercussions for failure.<sup>207</sup> Further, any situation in which an agent is prevented from performing a morally necessary action will also be judged as a potential moral hazard.<sup>208</sup> The U.S. follows the moral hazard philosophy. The U.S. does whatever is necessary to protect its citizens with minimum loss of life regardless of the morality issues surrounding use of military use of drones. Bradley J. Stawser, a former U.S. Air Force officer and an assistant professor of philosophy at the Naval Postgraduate School said, “I had ethical doubts and concerns when I started looking into this [military use of drones].”<sup>209</sup> But after a concentrated study of remotely piloted vehicles, he said, he concluded that using drones to go after terrorists not only was ethically permissible but also might be ethically obligatory, because of their advantages in identifying targets and striking with precision.<sup>210</sup>

However, the legalities and ethics under the concept of moral hazard are not universally

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<sup>205</sup> *Id.*

<sup>206</sup> *Id.*

<sup>207</sup> *The Drone Dilemma: Veto Players, Moral Hazard and Decision Making*, THE CENTER FOR THE STUDY OF THE PRESIDENCY & CONGRESS-PRESIDENTIAL FELLOWS BLOG, (March 12, 2013) <https://presidentialfellows.wordpress.com/2013/03/12/the-drone-dilemma-veto-player-moral-hazard-and-decision-making/>

<sup>208</sup> *Id.*

<sup>209</sup> Scott Shane, *The Moral Case for Drones*, THE NEW YORK TIMES, (July 14, 2012) <http://www.nytimes.com/2012/07/15/sunday-review/the-moral-case-for-drones.html>

<sup>210</sup> *Id.*

accepted. For example, Pakistan receives most of the military drone attacks from the US. Pakistan often argues that the use of armed drones in battlefield situations is immoral. Drones lethal operations inside sovereign countries that are not at war with the U.S. raises contentious legal questions.<sup>211</sup> The use of militarized drones has become a radicalizing force in some Muslim countries.<sup>212</sup> Dr. Aly Mageed, a Shura member of the Islamic Mosque and Religious Institute of Grand Rapids, Michigan said, “It is a moral hazard when the plaintiff becomes both the judge and the executor without giving the defendant a chance for a fair trial.”<sup>213</sup>

The problem is that terrorists do not come out into the open to fight against the armed forces of the other side, but, rather, hide amongst the civilian population and use the homes of families and friends as bases in planning and executing their attacks.<sup>214</sup> The fact that civilians are the shield behind which terrorists hide should not be grounds for granting the latter some sort of immunity from attack.<sup>215</sup> If they use their homes as terror bases, they cannot claim that these bases are innocent civilian buildings.<sup>216</sup>

If soldiers in a conventional war hide in a residential building and shoot through its windows at enemy soldiers, there is no dispute that the latter are justified in using snipers to target and kill the former.<sup>217</sup> Thus, if in a war against terror, terrorists establish their base in a residential area from where they launch murderous attacks (dispatching suicide terrorists or firing artillery), the other side is justified in using snipers, helicopters, and other methods to target and kill the

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<sup>211</sup> *Id.*

<sup>212</sup> *Id.*

<sup>213</sup> Matt V. Bunte, *Ethics and Religion Talk: The ‘moral hazard’ of U.S. drones*, MLIVE MEDIA GROUP, (March 19, 2013) [http://www.mlive.com/opinion/grand-rapids/index.ssf/2013/03/ethics\\_and\\_religion\\_talk\\_cauti.html](http://www.mlive.com/opinion/grand-rapids/index.ssf/2013/03/ethics_and_religion_talk_cauti.html)

<sup>214</sup> Statman, *supra* note 190.

<sup>215</sup> *Id.*

<sup>216</sup> *Id.*

<sup>217</sup> *Id.*

terrorists.<sup>218</sup>

Moreover, Al Qaeda and other armed groups that routinely violate the laws of war would be immune from attack as long as they crossed international borders and did not commit violent acts within their “host” state.<sup>219</sup> Instead of penalizing al Qaeda for failing to follow its rules, IHL would be rewarding them for doing so by permanently granting them the initiative in their conflict with Western nations.<sup>220</sup> By allowing al Qaeda to strike New York, London, Madrid, Bali, Washington, Mumbai, Detroit, or any other city and then prohibiting military counter-strikes on their home bases, IHL would be read to ensure that terrorist organizations enjoy the significant “first-mover” advantage throughout the conflict.<sup>221</sup>

The law does not tell commanders when they should use force to save lives. Consequently, the question here is one essentially beyond the law of war, that is, an *affirmative* moral responsibility of acting to protect others. The problem, as revealed by the Obama administration’s memorandum, is that the formal policy never tries to address what Mill calls the “evil” of “inaction.”<sup>222</sup> Moreover, nothing in it seeks to hold anyone accountable for the injury caused by decision-makers who do not exercise the moral courage to take a political risk to prevent a terrorist from wreaking havoc on the powerless.<sup>223</sup>

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<sup>218</sup> *Id.*

<sup>219</sup> Lewis & Vitkowsky, *supra* note 92, at 74.

<sup>220</sup> *Id.*

<sup>221</sup> *Id.*

<sup>222</sup> Charles Dunlap, *The Moral Hazard of Inaction in War*, WAR ON THE ROCKS, (August 19, 2016)

<https://warontherocks.com/2016/08/the-moral-hazard-of-inaction-in-war/>

<sup>223</sup> *Id.*

### III. Human rights and IHL

The main normative frameworks of international law affording protection against intentional deprivations of life on the part of state agents are human rights law and IHL.<sup>224</sup> The major human rights treaties leave no doubt as to their continued applicability also in situations of armed conflict.<sup>225</sup> Thus, Article 27(1) American Convention on Human Rights (ACHR) and Fundamental Freedom (ECHR) expressly confirm the applicability of the respective conventions in time of 'war' and the same assertion is implied in the wording of Article 4(1) International Covenant on Civil and Political Rights (ICCPR).<sup>226</sup> Those contending it that is legal to practice targeted killing because it contravenes IHR point to Article 6(1) of the International Covenant on Civil and Political Rights (ICCPR) in support of their position.<sup>227</sup> Article 6(1) states, "Every human being has the inherent right to life. Law shall protect this right. No one shall be arbitrarily deprived of his life."<sup>228</sup> The use of lethal force against an alleged terrorist without meeting the pre-conditions of the law enforcement model--due process, eminency, and absolute necessity--amounts to depriving the terrorist of his life arbitrarily.<sup>229</sup>

IHL treaty expressly recalls:

'International instruments relation to human rights offer a basic protection to the human person and recognizes that its provisions are additional to 'other applicable rules of international law relation to the protection of fundamental human rights

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<sup>224</sup> Melzer, *supra* note 88, at 76.

<sup>225</sup> *Id.*

<sup>226</sup> *Id.*

<sup>227</sup> Fisher, *supra* note 11 at 719.

<sup>228</sup> *Article 6(1) ICCPR*, UNITED NATIONS HUMAN RIGHTS, (March 23, 1976)

<http://www.ohchr.org/EN/ProfessionalInterest/Pages/CCPR.aspx>

<sup>229</sup> Fisher, *supra* note 11 at 719.

during international armed conflict and respectively, ‘constitute the foundation of respect for the human person in cases of armed conflict not of an international character.’<sup>230</sup>

As a threshold matter, the legality of one form of targeted killing is relatively clear: Recall that the human rights model for law enforcement permits targeted killing where necessary to prevent a person from posing an imminent threat of death or serious injury to others.<sup>231</sup> Here, the human rights model and IHL overlap.<sup>232</sup>

#### **D. Justification for the targeted killing of US citizen**

This chapter assumes that the U.S. generally cannot institute a targeted killing program against terrorist leaders within the U.S, whether they are American citizens or foreigners.<sup>233</sup> These actions are prohibited by the Fifth Amendment of the U.S. Constitution, which protects "any person" from being "deprived of life, liberty, or property without due process of law."<sup>234</sup> A policy of targeted killing would not suffice under any reasonable definition of “due process of law,” even if officials at the highest level of government reviewed all the evidence in order to authorize a killing.<sup>235</sup> Due process depends on the severity of the potential deprivation as well as the substantive grounds that might justify that deprivation.<sup>236</sup>

The procedures suited for determining whether a student’s suspension because she has violated school rules are not suited for determining whether a person punishment by death because he has

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<sup>230</sup> Melzer, *supra* note 88, at 76.

<sup>231</sup> Murphy & Radsan, *supra* note 69, at 414.

<sup>232</sup> *Id.*

<sup>233</sup> Jahagirdar, *supra* note 82, at 235.

<sup>234</sup> *Id.* at 233.

<sup>235</sup> *Id.*

<sup>236</sup> Murphy & Radsan, *supra* note 73, at 414.

committed murder.<sup>237</sup> Therefore, to assess the due process of targeted killing, it can be justified under the substantive law by identifying the circumstances.<sup>238</sup> U.S. exceptionalism also reared its head after the February 2013 leak of a DoJ White Paper that describes circumstances under which the President could order the targeted killing of U.S. citizens.<sup>239</sup> There had been little public concern in the U.S. about drone strikes killing people in other countries.<sup>240</sup> However, when it came to light that U.S. citizens might be targets, U.S. citizens were outraged.<sup>241</sup>

Senator Rand Paul's 13-hour filibuster of John Brennan's nomination for CIA director exemplified this.<sup>242</sup> Indeed, Georgetown University law professor Rosa Brooks testified at a congressional hearing: "[W]hen a government claims for itself the unreviewable power to kill anyone, anywhere on earth, at any time, based on secret criteria and secret information discussed in a secret process by largely unnamed individuals; it undermines the rule of law."<sup>243</sup>

Another disturbing issue is that the unlawful precedent the U.S. is setting with its use of killer drones and other forms of targeted killing not only undermines the rule of law.<sup>244</sup> It also will prevent the U.S. from reasonably objecting when other countries that obtain drone technology develop "kill lists" of persons; those countries believe represent threats to them.<sup>245</sup>

To evaluate targeted killing under just war theory and constitutional law, the case of *Anwar al-Aulaqi vs Panetta* is informative. Born in New Mexico, Al-Aulaqu was a Muslim cleric of the

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<sup>237</sup> *Id.*

<sup>238</sup> *Id.*

<sup>239</sup> Cohn, *supra* note 153, at 8.

<sup>240</sup> *Id.*

<sup>241</sup> *Id.*

<sup>242</sup> *Id.*

<sup>243</sup> *Id.*, at 11.

<sup>244</sup> *Id.*

<sup>245</sup> *Id.*

U.S.-Yemeni citizenship.<sup>246</sup> He was a propagandist for al-Qaeda in the Arabian Peninsula ("AQAP") and was thought to have played a key part in recruiting Umar Farouk Abdulmutallab, the man who attempted an airline bombing in Detroit on December 25, 2009. Al-Aulaqi also e-mailed with Nidal Hasan six months prior to Hasan's murder of thirteen men at Fort Hood, Texas in November 2009.<sup>247</sup> Although never formally charged in either incident, Al-Aulaqi was on the U.S. government's kill or capture list in April of 2010, apparently with White House approval.<sup>248</sup> On September 30, 2011, at the age of forty, Al-Aulaqi died via a U.S. drone strike, along with Pakistani-American Samir Khan.<sup>249</sup> Ehan, who produced a magazine for AQAP promoting terrorism, was not on the targeted killing list, and was considered "collateral damage."<sup>250</sup> As for al-Aulaqi, officials alleged that his role went "beyond inspiration into operational planning of attacks," but no proof of such planning has surfaced, and al-Aulaqi received no trial or judicial review.<sup>251</sup> The U.S. justified Al-Aulaqi's inclusion on the list because of his role as the leader of AQAP, and as orchestrator of numerous attacks aimed at the U.S. citing both non-international armed conflict and self-defense as the appropriate legal paradigms.<sup>252</sup> Also, the U.S.' use of force against Al-Aulaqi in Yemen must have been in accordance with Article 2(4) of the UN Charter.<sup>253</sup> While Yemen's State sovereignty right was not violated—since the President of Yemen authorized the U.S. strike, the force initiated by the U.S. must still have complied with international human

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<sup>246</sup> Foreman, *supra* note 5, at 926.

<sup>247</sup> *Id.*

<sup>248</sup> *Id.*

<sup>249</sup> *Id.*

<sup>250</sup> *Id.*

<sup>251</sup> *Id.*

<sup>252</sup> Mallette-Piasecki, *supra* note 60, at 291.

<sup>253</sup> *Id.*

right law, meaning it must have been necessary to kill Al-Aulaqi.<sup>254</sup>

## 7. Conclusion

The carrying out of targeted killings must only be an extraordinary measure, where the alternative of capture or arrest is unfeasible. In this chapter, the discussion of the justifications for targeted killing by drone strikes was along three lines operational considerations, theories of self-defense, and moral concerns.

The authentication of targeted killing of a target depends upon the reliability of intelligence. As discussed above drones play important role in collecting in gathering intelligence where ground intelligent is not available. Rachel Stohl, of the Stimson Center, a Washington research institute said, “These are precise weapons. The failure is in the intelligence about who it is that we are killing.”<sup>255</sup> In addition, precision of drone causes less collateral damage. However, legal justification of signature strikes remains vague. However, some scholar justified the legality of signature strikes because “in a traditional conflict, there is no requirement that you know every single person’s identity before you strike, so long as there are reasonable grounds for determining that the target is part of the enemy force.”<sup>256</sup>

This chapter has justified targeted killing under the principle of military necessity. In addition, this chapter justified the targeted killing under the self-defense theory, AUMF and UN Charter. There are some moral issues raised by few countries for drone-targeted killing but the

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<sup>254</sup> *Id.*, at 292.

<sup>255</sup> Scott Shane, *Drone Strikes Reveal Uncomfortable Truth: U.S. Is Often Unsure About Who Will Die*, THE NEW YORK TIMES, (April 23, 2015) <https://www.nytimes.com/2015/04/24/world/asia/drone-strikes-reveal-uncomfortable-truth-us-is-often-unsure-about-who-will-die.html>

<sup>256</sup> Currier & Elliot, *supra* note 154.

U.S. provides its justification. Finally, this chapter examined the controversial issue of targeted killing of the U.S. citizen.

## **Chapter 4: Drones Present and Future Privacy Laws: A Comparative Study of the U.S., U.K., and India**

### **1. Introduction**

This project mainly focuses on the legal justifications for the use of drones in wartime. However, the emerging range of security, law enforcement, and civilian applications for drones increasingly moves them beyond the confines of international military campaigns.<sup>1</sup> Law enforcement agency drone surveillance programs are raising privacy concerns. This chapter provides a primer on privacy issues related to various drone operations, both public and private, including an overview of current drone uses. This chapter is comparative of constitutional, privacy, property, and aviation laws of the U.S., U.K., and India in relation to their respective privacy laws. The purpose of this chapter is to analyze the government and civilian uses of drones in these three countries and identify the “best-practices” to be applied globally. This chapter examines the applicable drone laws for surveillance and the privacy rights of individuals. Finally, this chapter provides appropriate solutions for drone privacy laws.

Unarmed 'domestic drone' uses in national airspace pose a number of challenges to state regulatory frameworks for privacy, surveillance, and aviation safety.<sup>2</sup> Drones pose Challenge of a person's reasonable expectation of privacy, challenge of trespass law and upward boundaries of private property. Also, many legislators are concerned that domestic drone usage by government controllers might encumber the individual right to privacy. There are other challenges, for

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<sup>1</sup> Lachlan Urquhart, *The Aerial Gaze: Regulating domestic drones in the UK*, SCL, (2013) <http://www.scl.org/site.aspx?i=ed31354>

<sup>2</sup> *Id.*

example, critics argue that flying drones over populated areas is potentially dangerous because they may interfere with conventional aircraft. This chapter responds to the privacy challenges posed of domestic drones.

Furthermore, drones vary significantly in size, technical capabilities, and applications, resulting in a broad and unpredictable problems.<sup>3</sup> Advanced drones equipped with high-definition rotatable cameras, anti-shake technology, and the ability to track fast-moving action, offer spectacular aerial photography and film-making capabilities for the news and creative media sectors.<sup>4</sup>

One of the most immediate and promising applications of drones, is in surveillance.<sup>5</sup> Drones surveillance is a vital tool for law enforcement agencies and militaries. Drones play an important role in collecting evidence and locating people. For example, law enforcement would benefit from the use of a drone when mass shooting and terrorist attacks occur. Like law enforcement, the military regards drones as an essential tool for collecting intelligence from the air.<sup>6</sup> They play an important role in battle-field, where there is no ground intelligence available. For example, the U.S. government use drones to conduct detailed surveillance on countries such as Afghanistan, Iraq, and Iran, as well as to drop targeted missiles.<sup>7</sup> There is need for drone

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<sup>3</sup> *Id.*

<sup>4</sup> Matthew Wall, *Can technology keep our skies safe from nuisance drones?* BBC, (August 25, 2015)<http://www.bbc.com/news/business-33989289>

<sup>5</sup> Kevin Kelly, *Benefits of Drone Surveillance*, SECURITY SALES & INTEGRATION,(April 1, 2015)[http://www.securitysales.com/article/are\\_there\\_benefits\\_of\\_drone\\_surveillance/Unmanned\\_Aerial\\_Systems](http://www.securitysales.com/article/are_there_benefits_of_drone_surveillance/Unmanned_Aerial_Systems)

<sup>6</sup> Dan Gettinger, *Drone Geography: Mapping a System of Intelligence*, CENTER FOR THE STUDY OF THE DRONE AT BARD COLLEGE,(February 19, 2015)<http://dronecenter.bard.edu/drone-geography/>

<sup>7</sup> *Domestic Unmanned Aerial Vehicles (UAVs) and Drones*, ELECTRONIC PRIVACY INFORMATION CENTER,(accessed August 2, 2016) <https://epic.org/privacy/drones/>

surveillance for people's safety. Interconnected drones could enable law enforcement and the military to use mass tracking of vehicles and people in wide areas.<sup>8</sup>

Drones are a boon to many areas of society, from emergency response to industry to academia, yet they also present vulnerabilities and threats not fully considered.<sup>9</sup> Drones deployed without proper regulation, equipped with facial recognition software, infrared technology, and equipment capable of monitoring personal conversations would cause unprecedented invasions of privacy rights.<sup>10</sup> For example, tiny drones could go completely unnoticed while peering into the window of a home or place of worship.<sup>11</sup> In addition, due to the heights at which drones can fly, they are often beyond the range of sight for most people.<sup>12</sup> This means drone surveillance often occurs without the knowledge of the individual being monitored.<sup>13</sup> Also, drones have been reported for causing dangerous situations for manned aircraft and emergency responders.<sup>14</sup> News reports shed light on drones becoming a tool for perverts, spies, and criminals everywhere, as well as a hovering, disruptive expression of nationalism.<sup>15</sup> Much of the suspicious chatter conflates prescriptive societal risk with the actual risk impact from negligent or nefarious drones.<sup>16</sup>

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<sup>8</sup> *Domestic drones*, ACLU, (accessed August 3, 2016)<https://www.aclu.org/issues/privacy-technology/surveillance-technologies/domestic-drones>

<sup>9</sup> Melissa Hersh & Michael Hopmeier, *Drones: In Technology We Trust?* THE NATIONAL INTEREST, (September 13, 2015)<http://nationalinterest.org/feature/drones-technology-we-trust-13829>

<sup>10</sup> Domestic drones, *supra* note 8.

<sup>11</sup> *Id.*

<sup>12</sup> Domestic Unmanned Aerial Vehicles (UAVs) and Drones, *supra* note 7.

<sup>13</sup> *Id.*

<sup>14</sup> Melissa Hersh & Michael Hopmeier, *supra* note 9.

<sup>15</sup> *Id.*

<sup>16</sup> *Id.*

In the debate over drone use, opposing sides put forth valid positions.<sup>17</sup> On the pro drone side, people love to fly and never wanted to peep on people or invade anyone's privacy.<sup>18</sup> On the anti-drone side, people freak out from seeing a drone several hundreds of feet above which obviously is not a threat to their privacy as one could go to Google Maps and zoom down closer.<sup>19</sup> However, there are others who invade individual's privacy without any meaningful reason. The challenge is to find the right balance between the right to the skies and expectations of privacy.<sup>20</sup>

This chapter is comparative of constitutional, privacy, property, and aviation laws of the U.S., U.K., and India in relation to their respective privacy laws. All three nations have drone regulating agencies such as Federal Aviation Administration (FAA) for the U.S., Civil Aviation Authority (CAA) for U.K., and Director General of Civil Aviation (DGCA) for India. These agencies are about licensing drones, but they do not provide any regulations for privacy issues. This leaves a gap between drone usage regulations and privacy protection of the people. The other areas of law can fill this gap. Other areas of law that come into play, particularly if the drone has a camera mounted on it, are constitutional, common-law torts of nuisance and trespass, as well as the privacy, data protection laws.<sup>21</sup>

The purpose of this chapter is to briefly outline these regulating agencies, analyze the government and civilian uses of drones in the U.S., U.K., and India, and identify the “best-

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<sup>17</sup> Zsolt Vaszary, *UAV Regulations Around the World*, DRONETHUSIAST, (accessed on June 18, 2016)<http://www.dronethusiast.com/uav-regulations-around-the-world/>

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*

<sup>20</sup> Michael Frank, *Drone Privacy: Is Anyone in Charge?* CONSUMER REPORTS, (February 10, 2016)<http://www.consumerreports.org/electronics/drone-privacy-is-anyone-in-charge/>

<sup>21</sup> Clare Feikert-Ahalt, *Regulation of Drones: United Kingdom*, LIBRARY OF CONGRESS, (April 2016)<https://www.loc.gov/law/help/regulation-of-drones/united-kingdom.php>

practices” to be applied globally. This chapter is comparative because the U.S. uses armed drones for warfare and surveillance purpose; whereas, the U.K. uses drones mainly for surveillance purpose. Conversely, India is a developing country and potential user of drones, where privacy laws are less effective.

To date, most drone studies have simply identified domestic laws impacting the use of drones without a broader, global perspective. The purpose of this work is to identify the most effective domestic drone laws from these three countries and create a coherent global drone laws. This chapter examines the applicable drone laws for surveillance and the privacy rights of individuals. Finally, this chapter provides appropriate solutions for drone privacy laws.

## **2. Drone use in the U.S.**

The drone debate usually centers on the U.S. use of drones in other countries, such as Afghanistan, Pakistan, and Yemen, to target terrorists.<sup>22</sup> However, drones are used for several other purposes in the U.S. The government uses drones for surveillance and mapping. For example, the Department of Homeland Security flies Predator drones, which are about the size of a Cessna airplane, back and forth along the U.S. border to detect people crossing illegally.<sup>23</sup> For fighting wildfires, NASA and the Forest Service tested and are using drones to find and map forest fires in California.<sup>24</sup>

Civilians use drones for various purposes. For example, universities have drone programs, not just to learn how to build and maintain them, but also to train on their various uses.<sup>25</sup> Also,

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<sup>22</sup> Larisa Epatko, *How Are Drones Used in the U.S.?* PBS NEWS HOUR, (April 18, 2013) <http://www.pbs.org/newshour/rundown/how-are-drones-used-in-us/>

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

agriculture, far and away, is becoming the dominant market for drone operations.<sup>26</sup> The precision agriculture movement uses technology to monitor fields, increasing yields and saving money.<sup>27</sup> Aerial photography is one of the most popular uses and is a reason why there are so many drones with cameras, make them capable of shooting high quality pictures and video.<sup>28</sup> Aerial photography with drones in the U.S. raises significant privacy issues. These vehicles can gather detailed information on individuals.<sup>29</sup>

### **A. Drone regulations**

In the U.S., the FAA, a component of the Department of Transportation, is the agency responsible with licensing drones for domestic use.<sup>30</sup> The FAA is charged with promulgating minimum standards for air safety within U.S. air space.<sup>31</sup> Under the FAA, requirements of drone users are:<sup>32</sup>

- Unmanned aircraft must weigh less than 55 lbs. (25 kg).
- Visual line-of-sight (VLOS) only; the unmanned aircraft must remain within VLOS of the remote pilot in command and the person manipulating the flight controls of the small drones (UAS). Alternatively, the unmanned aircraft must remain within VLOS of the visual observer.

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<sup>26</sup> Brian Handwerk, *5 Surprising Drone Uses (Besides Amazon Delivery)*, NATIONAL GEOGRAPHIC, (December 2, 2013)<http://news.nationalgeographic.com/news/2013/12/131202-drone-uav-uas-amazon-octocopter-bezos-science-aircraft-unmanned-robot/>

<sup>27</sup> *Id.*

<sup>28</sup> Jesse Young, *Current Rules for Flying Drones and Drone Photography*, DRONE GURU, (updated March 26, 2017)<http://www.droneguru.net/current-rules-for-flying-drones-and-drone-photography/>

<sup>29</sup> Domestic Unmanned Aerial Vehicles (UAVs) and Drones, *supra* note 7.

<sup>30</sup> *Id.*

<sup>31</sup> *Id.*

<sup>32</sup> *Summary of Small Unmanned Aircraft Rule (part107)*, FAA NEWS, (June 21, 2016)[https://www.faa.gov/uas/media/Part\\_107\\_Summary.pdf](https://www.faa.gov/uas/media/Part_107_Summary.pdf)

- At all times the small unmanned aircraft must remain close enough to the remote pilot in command and the person manipulating the flight controls of the small drones for those people to can see the aircraft with vision unaided by any device other than corrective lenses.
- Small unmanned aircraft may not operate over any persons not directly participating in the operation, not under a covered structure, and not inside a covered stationary vehicle.
- Daylight-only operations, or civil twilight (30 minutes before official sunrise to 30 minutes after official sunset, local time) with appropriate anti-collision lighting.
- Must yield right of way to other aircraft.
- May use visual observer (VO) but not required.
- First-person view camera cannot satisfy “see-and-avoid” requirement but can be used if requirement is satisfied in other ways.
- Maximum groundspeed of 100 mph (87 knots).
- Maximum altitude of 400 feet above ground level (AGL) or, if higher than 400 feet AGL, remain within 400 feet of a structure.
- Minimum weather visibility of 3 miles from control station.
- Operations in Class B, C, D, and E airspace are allowed with the required ATC permission.
- Operations in Class G airspace are allowed without ATC permission.
- No person may act as a remote pilot in command or VO for more than one unmanned aircraft operation at one time.
- No operations from a moving aircraft.
- No operations from a moving vehicle unless the operation is over a sparsely populated area.
- No careless or reckless operations.

- No carriage of hazardous materials. Requires preflight inspection by the remote pilot in command.
- A person may not operate a small unmanned aircraft if he or she knows or has reason to know of any physical or mental condition that would interfere with the safe operation of a small drones.
- Foreign-registered small unmanned aircraft can operate under part 107 if they satisfy the requirements of part 375.
- External load operations are allowed if the object being carried by the unmanned aircraft is securely attached and does not adversely affect the flight characteristics or controllability of the aircraft.
- Transportation of property for compensation or hire allowed provided that the aircraft, including its attached systems, payload and cargo weigh less than 55 pounds total; o The flight is conducted within visual line of sight and not from a moving vehicle or aircraft; and o The flight occurs wholly within the bounds of a State and does not involve transport between (1) Hawaii and another place in Hawaii through airspace outside Hawaii; (2) the District of Columbia and another place in the District of Columbia; or (3) a territory or possession of the U.S. and another place in the same territory or possession.
- Most of the restrictions discussed above are waivable if the applicant demonstrates that his or her operation can safely be conducted under the terms of a certificate of waiver.<sup>33</sup>

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<sup>33</sup> *Id.*

Although the new rule does not specifically deal with privacy issues regarding the use of drones.<sup>34</sup> The FAA does not regulate how drones gather data on people or property, the FAA is acting to address privacy considerations in this area.<sup>35</sup> The FAA strongly encourages all drone pilots to check local and state laws before gathering information through remote sensing technology or photography.<sup>36</sup> As part of a privacy education campaign, the agency will provide all drone users with recommended privacy guidelines during the drone registration process and through the FAA's B4UFLY mobile app.<sup>37</sup>

The FAA will also educate all commercial drone pilots on privacy during their pilot certification process; and will issue new guidance to local and state governments on drone privacy issues.<sup>38</sup> The FAA's efforts build on the privacy "best practices" privacy the National Telecommunications and Information Administration Fact Sheet, published in June 2016, as the result of a year-long outreach initiative with privacy advocates and industry.<sup>39</sup> The FAA has repeatedly acknowledged the privacy risks of drone deployment, but so far has refused to adopt any privacy safeguards.<sup>40</sup> FAA should be protecting privacy. For now, the question remains: If the FAA is not protecting rights to privacy from drone spying, who is?<sup>41</sup> Reliance on other areas of law is the solution for problems with privacy protection.

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<sup>34</sup> *Fact Sheet- Small Unmanned Aircraft Regulations*, FAA, (June 21, 2016)[http://www.faa.gov/news/fact\\_sheets/news\\_story.cfm?newsId=20516](http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=20516)

<sup>35</sup> *Id.*

<sup>36</sup> *Id.*

<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

<sup>40</sup> *EPIC v. FAA*, EPIC.ORG, (accessed August 6, 2016)<https://epic.org/privacy/litigation/apa/faa/drones/>

<sup>41</sup> Michael Frank, *supra* note 20.

## **B. Privacy protection against the use of drones by U.S. government agencies through organizational efforts**

The U.S. federal government uses drones for nonmilitary, domestic purposes, and privacy questions have emerged.<sup>42</sup> The FAA has authorized 36 government agencies to use drones—whose missions include firefighting, disaster relief, search and rescue, law enforcement, border security, and military training—to operate drones.<sup>43</sup> The most prevalent use has been undertaken by the Customs and Border Protection (CBP) Office of Air and Marine for border patrol.<sup>44</sup> Deployment of drones by government agencies for surveillance raises questions regarding the proper balance between state obligations to keep people safe and to respect their privacy rights.<sup>45</sup>

Organizations such as the American Civil Liberties Union (ACLU) and the Electronic Frontier Foundation (EFF) are vocal in raising privacy concerns relating to these uses.<sup>46</sup> The ACLU works to change policies as well as hearts and minds.<sup>47</sup> The ACLU's Washington Legislative Office lobbies Congress to pass bills that advance or defend civil liberties and defeat those that do not, their affiliates work in state houses across the country to do the same, and they use strategic communications to engage supporters on the most pressing civil liberties issues of the time.<sup>48</sup> Similarly, EFF champions user privacy, free expression, and innovation through impact

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<sup>42</sup> David Young, *Government's Domestic Use of Drones Poses Privacy Questions for Congress and the Courts*, THE INTERNATIONAL ASSOCIATION OF PRIVACY PROFESSIONALS, (April 22, 2014)<https://iapp.org/news/a/governments-domestic-use-of-drones-poses-privacy-questions-for-congress-and/>

<sup>43</sup> *Id.*

<sup>44</sup> *Id.*

<sup>45</sup> *Drones in Canada*, OFFICE OF THE PRIVACY COMMISSIONER OF CANADA, (March 2013)[https://www.priv.gc.ca/en/opc-actions-and-decisions/research/explore-privacy-research/2013/drones\\_201303/](https://www.priv.gc.ca/en/opc-actions-and-decisions/research/explore-privacy-research/2013/drones_201303/)

<sup>46</sup> David Young, *supra* note 42.

<sup>47</sup> ACLU, ABOUT THE ACLU, <https://www.aclu.org/about-aclu>

<sup>48</sup> *Id.*

litigation, policy analysis, grassroots activism, and technology development.<sup>49</sup> EFF work to ensure that rights and freedoms are enhanced and protected as our use of technology grows.<sup>50</sup> Whereas these organizations are advocates for change, the protection of privacy comes under the laws of the United States Constitution and under the law of various states.

### **C. Privacy protection under the U.S. Constitutional law**

The Fourth Amendment of the United States Constitution provides “the right of people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.”<sup>51</sup>

The tension between national security and personal privacy interests is not new, especially in light of the explosion of surveillance technology in recent decades.<sup>52</sup> Yet, the question remains: what is the proper balance between the necessity of the government to enforce laws and keep people safe, and individual expectation of privacy?<sup>53</sup> Additionally, the Constitution’s traditional protections against public rather than private action; and the fact that, like much in the realm of technology, the drone was initially developed for government applications and only afterwards transitioned to private ones.<sup>54</sup>

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<sup>49</sup> ELECTRONIC FRONTIER FOUNDATION, <https://www.eff.org/about>

<sup>50</sup> *Id.*

<sup>51</sup> U.S. Const. Amend. IV

<sup>52</sup> Abigail Rehfuss, *The Domestic Use of Drone and the Fourth Amendment*, 8 ALB. GOV'T L. REV. 316(2015)

<sup>53</sup> *Id.*

<sup>54</sup> Well Bennett, *Civilian Drones, Privacy, and the Federal-State Balance*, BROOKING, 2, (September 2014)

When it comes to the use of drones by law enforcement, the situation is less clear-cut.<sup>55</sup> The United States Supreme Court has held that individuals do not generally have Fourth Amendment rights with respect to aerial surveillance because of the ability that anyone might have to observe what could be viewed from the air.<sup>56</sup> In *Florida v. Riley* the Fourth Amendment was not triggered by police flying a helicopter over a greenhouse and peering down through the greenhouse's missing roof panels.<sup>57</sup> Police do not need a warrant to take aerial photos of marijuana plants growing in residential backyards.<sup>58</sup> The Supreme Court ruled that aerial surveillance by police forces is legal, whether the subject is on private or public property.<sup>59</sup>

In the U.S., there is no reasonable expectation of privacy if something is visible from a vantage point accessible to the public.<sup>60</sup> Delivering the Supreme Court's plurality opinion, Justice Byron White stated that the helicopter surveillance did not violate the Fourth Amendment because the FAA permits helicopter to fly below 400 feet, "and any member of the public or the police could legally have observed respondent's greenhouse from that altitude."<sup>61</sup> However, in case of drones, the maximum altitude of 400 feet above ground level (AGL) or, if higher than 400 feet AGL, remain within 400 feet of a structure is permissible under the FAA as mentioned above. This is the same 400 feet where a helicopter would violate the 4<sup>th</sup> Amendment right to privacy. Therefore, drones can violate the Fourth Amendment because drones are not allowed to fly above the ground level. If drones are only to fly within the 400 feet, then under *Florida v. Riley* they are

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<sup>55</sup> Michael Frank, *supra* note 20.

<sup>56</sup> Domestic Unmanned Aerial Vehicles (UAVs) and Drones, *supra* note 7.

<sup>57</sup> *Florida v. Riley* 488 U.S. 445, 469 1989

<sup>58</sup> *Id.*

<sup>59</sup> Michael Frank, *supra* note 20.

<sup>60</sup> *Florida v. Riley*, *supra* note 57.

<sup>61</sup> Martin McKown, *The New Drone State: Suggestions for Legislatures Seeking to Limit Drone Surveillance by Government and Nongovernment Controllers*, 26 U. FLA. J.L. & PUB. POL'Y 86(2015)

flying in the zone where the expectation of privacy exist. This law could be applied to drones creating a no-fly zone where the expectation of privacy exists.

The United States House of Representatives approved an amendment to the National Defense Authorization Act of 2013 to prohibit information collected by Department of Defense drones without a warrant for use as evidence in court.<sup>62</sup> In June 2012, identical bills were introduced in the House and the Senate to require a warrant before drones could be used for most instances of criminal surveillance.<sup>63</sup>

Rather than prohibiting law enforcement officers from using drones to promote public safety and welfare within the purview of the Fourth Amendment, states should pass legislation.<sup>64</sup> That legislation should restrict private citizens, who are not bound by the Fourth Amendment, from conducting unreasonable surveillance with drones.<sup>65</sup> For example, in light of the 2012 Boston Marathon bombing, police may want to fly a drone above a marathon to ensure public safety.<sup>66</sup> Under many bills, police would not be allowed to use a drone unless they had a warrant, premised upon probable cause to believe a crime had been or was about to be committed.<sup>67</sup> This requirement exceeds current Fourth Amendment protections with regard to the reasonableness of observing activities in public places.<sup>68</sup> This means that the police would need to put together a warrant application with sufficient facts to prove to a judge that they had probable cause.<sup>69</sup> This would

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<sup>62</sup> Domestic Unmanned Aerial Vehicles (UAVs) and Drones, *supra* note 7.

<sup>63</sup> *Id.*

<sup>64</sup> Martin McKown, *supra* note 61, at 87.

<sup>65</sup> *Id.*

<sup>66</sup> Gregory McNeal, *Drones and aerial surveillance: Considerations for legislatures*, BROOKINGS, at 3, (November 2014)[https://www.brookings.edu/wp-content/uploads/2016/07/Drones\\_Aerial\\_Surveillance\\_McNeal\\_FINAL.pdf](https://www.brookings.edu/wp-content/uploads/2016/07/Drones_Aerial_Surveillance_McNeal_FINAL.pdf)

<sup>67</sup> *Id.*

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

only occur after a bombing or with enough prior knowledge to establish the particulars for the warrant. This creates a problem with preventing or minimizing criminal activity.

Private citizens will have increasing widespread drone access as the FAA integrates drone technology into national airspace.<sup>70</sup> Moreover, the proliferation of digital technology makes it inexpensive and easy for anyone to record an image that can be instantly communicated worldwide.<sup>71</sup> Current Fourth Amendment jurisprudence is in dire need of reform<sup>72</sup> so that drones may be into national airspace while simultaneously safeguarding the protections against unreasonable searches. The states must serve as the "beacon[s] of protection" for their citizens by shaping their individual constitutions to address current privacy concerns."<sup>73</sup>

#### **D. Privacy protection under State laws**

Privacy can be protected under State laws from drone use by the government and civilians.

##### **I. Government use of drones**

The advent of drone technology has made it much easier and cheaper for police departments to conduct such surveillance.<sup>74</sup> Although states benefit from drone surveillance they are grappling with the privacy implications.<sup>75</sup> State courts have reached different conclusions about privacy issues associated with aerial surveillance.<sup>76</sup> Both Nevada and Virginia have passed

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<sup>70</sup> Martin McKown, *supra* note 61, at 87.

<sup>71</sup> *Id.*

<sup>72</sup> Abigail Rehfuss, *supra* note 52, at 325.

<sup>73</sup> *Id.*, at 316

<sup>74</sup> Michael Frank, *supra* note 20.

<sup>75</sup> *Id.*

<sup>76</sup> Domestic Unmanned Aerial Vehicles (UAVs) and Drones, *supra* note 7.

legislation requiring police to obtain a warrant before using drones for surveillance.<sup>77</sup> However, Texas has gone in the opposite direction, saying that law enforcement agencies only need probable cause.<sup>78</sup>

As the American Federal Government has exclusive sovereignty over the American airspace, federal enactments pre-empt any state enactment on this issue.<sup>79</sup> Therefore, state governments are blocked out of legislating on this issued due to the passage of the FAA Modernization and Reform Act, 2012, which confirms the federal government’s intent to continue to “occupy the field” of flight.<sup>80</sup> However, states are at the liberty to provide for ancillary regulations such as providing for security safeguards, segregating no fly zone whereby 45 states have introduced legislation to protect privacy and limit the use of drones.<sup>81</sup>

Additionally, even extremely low-flying drones used to maintain simple observation are proscribed by the Fourth Amendment.<sup>82</sup> In fact, state laws that enforce across-the-board moratoriums on drone usage effectively limit law enforcement officers who appropriately use drones under federal law to produce positive outcomes in dangerous situations.<sup>83</sup> To highlight the benefit that law enforcement officers gain by lawfully using drones, DHS simulated a “dirty bomb” scenario in June 2010 by hiding a small device that emitted a safe pule of radiation nearly forty

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<sup>77</sup> Michael Frank, *supra* note 20.

<sup>78</sup> *Id.*

<sup>79</sup> *Unravelling the Future Game of Drones*, NISHITH DESAI ASSOCIATES, at 8, October 2016, [http://www.nishithdesai.com/fileadmin/user\\_upload/pdfs/Research\\_Papers/Unravelling\\_The\\_Future\\_Game\\_of\\_Drones.pdf?pdf=Research\\_Papers](http://www.nishithdesai.com/fileadmin/user_upload/pdfs/Research_Papers/Unravelling_The_Future_Game_of_Drones.pdf?pdf=Research_Papers)

<sup>80</sup> *Id.*

<sup>81</sup> *Id.*, at 9.

<sup>82</sup> Martin McKown, *supra* note 61, at 87.

<sup>83</sup> *Id.*

miles of north of Los Angeles, California.<sup>84</sup> Using a drone, DHS officials detected the radiation by toggling a joystick.<sup>85</sup>

DHS and Customs and Border Protection agency have deployed drones — originally bought to guard America’s borders — to assist local law enforcement and other federal agencies on several occasions.<sup>86</sup> Sgt. Bill Macki, the leader of the Grand Forks, N.D., SWAT team said, “the Predator drone helps us pull back and (gives us) the ability to control the perimeter and de-escalate the scene significantly. The (drones) have been a tremendous asset to our high-risk operations.”<sup>87</sup> Thus, under actual life-threatening circumstances, law enforcement officers must face a substantial, but avoidable, risk of harm because of moratoriums prohibiting drone usage.<sup>88</sup>

## II. Civilian use of drones

Some states are trying to strengthen their protections for their citizen from civilian drone usage.<sup>89</sup> For example, in California, nervous celebrities may benefit from a law signed by Governor Jerry Brown in fall 2015.<sup>90</sup> The meat of the legislation reads, “a person is liable for physical invasion of privacy when the person knowingly enters onto the land or into the airspace above the land of another person without permission...in order to capture any type of visual image, sound

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<sup>84</sup> *Id.*

<sup>85</sup> *Id.*

<sup>86</sup> Kimberly Dvorak, *Homeland Security increasingly lending drones to local police*, THE WASHINGTON TIMES, (December 10, 2012) <http://www.washingtontimes.com/news/2012/dec/10/homeland-security-increasingly-lending-drones-to-l/>

<sup>87</sup> *Id.*

<sup>88</sup> Martin McKown, *supra* note 61, at 87.

<sup>89</sup> Michael Frank, *supra* note 20.

<sup>90</sup> *Id.*

recording, or other physical impression of the plaintiff.”<sup>91</sup> A similar privacy law in Wisconsin makes it illegal to photograph a “nude or partially nude person” using a drone.<sup>92</sup>

### **E. Use of drone on private property by individuals**

Individuals do not operate drones with the same capabilities as the U.S. government.<sup>93</sup> Governments might regulate drones’ ability to record images based on the property involved, treating public and private property differently or distinguishing between congested areas and open spaces.<sup>94</sup> Likewise, the regulations could restrict or prohibit recording in places where people have a reasonable expectation of privacy.<sup>95</sup>

### **I. Privacy under Intrusion on Seclusion**

An intrusion on seclusion claim is a special form of invasion of privacy.<sup>96</sup> It applies when someone intentionally intrudes, physically or otherwise, upon the solitude or seclusion of another.<sup>97</sup> Observation of a person in public generally does not amount to liability for intrusion upon seclusion.<sup>98</sup> For example, using a drone to hover outside someone's home while using the drone's mounted camera to peer into a window without that person's permission could subject the

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<sup>91</sup> *Id.*

<sup>92</sup> *Id.*

<sup>93</sup> Domestic Unmanned Aerial Vehicles (UAVs) and Drones, *supra* note 7.

<sup>94</sup> Nabiha Syed and Michael Berry, *Journo-Drones: A Flight over the Legal Landscape*, COMMUNICATIONS LAWYERS, VOL. 30 NO. 3(June 2014)[http://www.lskslaw.com/documents/CL\\_Jun14\\_v30n4\\_SyedBerry.pdf](http://www.lskslaw.com/documents/CL_Jun14_v30n4_SyedBerry.pdf)

<sup>95</sup> *Id.*

<sup>96</sup> *Elements of an Intrusion Claim*, DIGITAL MEDIA LAW PROJECT,(August 13, 2016)<http://www.dmlp.org/legal-guide/elements-intrusion-claim>

<sup>97</sup> *Id.*

<sup>98</sup> Rayan Hilton & James Michael, *If you invade someone’s privacy with a drone, your insurance might not cover it*, PROPERTY CASUALTY 360,(December 19, 2016) <http://www.propertycasualty360.com/2016/12/19/if-you-invade-someones-privacy-with-a-drone-your-i>

drone operator to liability for common-law intrusion upon seclusion.<sup>99</sup> In most states, to make out an intrusion on seclusion claim, a plaintiff must generally establish 4 elements:

1. Intentionally Invading the Plaintiff's Privacy: The courts generally require that the intrusion take the form of a "physical trespass."<sup>100</sup> This can be met literally, by physically entering onto private property, or by an electronic or optical intrusion, such as using zoom lenses or highly sensitive microphones to photograph or record a person who has a reasonable expectation of privacy.<sup>101</sup> A court would consider this a "physical trespass" if your use of ultra-powerful or highly sensitive equipment was the only way you were able to obtain your information or recording.<sup>102</sup>
2. Highly Offensive to a Reasonable Person: The invasion of privacy must be so extreme that it caused the plaintiff more than just embarrassment or discomfort.<sup>103</sup> That is, the type of intrusion has to be so offensive that practically anybody would be distressed by it.<sup>104</sup> This would also rule out claims by persons who may be hypersensitive in some way and who would feel distress where an average or reasonable person would not.<sup>105</sup>
3. Private Matter to the Plaintiff: The intrusion involves a private matter.<sup>106</sup> If you have intruded into someone's seclusion in a place they expect privacy (e.g., a bathroom or their

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<sup>99</sup> *Id.*

<sup>100</sup> Elements of an Intrusion Claim, *supra* note 96.

<sup>101</sup> *Id.*

<sup>102</sup> *Id.*

<sup>103</sup> *Invasion of Privacy: Intrusion*, FINDLAW, (accessed on August 13, 2016) <http://injury.findlaw.com/torts-and-personal-injuries/invasion-of-privacy--intrusion.html>

<sup>104</sup> *Id.*

<sup>105</sup> *Id.*

<sup>106</sup> Elements of an Intrusion Claim, *supra* note 96.

bedroom) or while they are engaged in an activity that most reasonable people would expect to be private (e.g., intimate contact with another) this element will be met.<sup>107</sup>

4. Anguish or Suffering Caused by the Intrusion: The plaintiff must have suffered emotional harm due to the surprise or humiliation of having her privacy invaded.<sup>108</sup> The anguish or suffering can happen at the same time that the intrusion occurred, such as if someone discovered a person taking pictures through a bathroom window.<sup>109</sup> However, an intrusion claim is also allowed even if the emotional harm happened after the intrusion.<sup>110</sup> This could happen if a plaintiff later discovered photographs of her doing a private activity, even if she was unaware of being photographed at the time.<sup>111</sup>

An example of intrusion on seclusion by drone occurred when a person was sitting in his home office, working on a column about neighbors getting into arguments over drones, when he heard a strange buzzing sound outside.<sup>112</sup> He looked up, and hovering 20 feet from his window was a black drone with a beady-eyed camera pointed at him.<sup>113</sup> At first, he was upset and felt spied upon.<sup>114</sup> But the more he thought about it, the more he came to the opposite conclusion.<sup>115</sup> He said, “maybe it’s because I’ve become inured to the reality of being monitored 24/7, whether it’s through surveillance cameras or Internet browsers. I see little difference between a drone hovering near my

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<sup>107</sup> *Id.*

<sup>108</sup> Invasion of Privacy: Intrusion, *supra* note 103.

<sup>109</sup> *Id.*

<sup>110</sup> *Id.*

<sup>111</sup> *Id.*

<sup>112</sup> Nick Bilton, *When your Neighbor’s Drone Pays an Unwelcome Visit*, THE NEW YORK TIMES, (January 27, 2016) [http://www.nytimes.com/2016/01/28/style/neighbors-drones-invade-privacy.html?\\_r=0](http://www.nytimes.com/2016/01/28/style/neighbors-drones-invade-privacy.html?_r=0)

<sup>113</sup> *Id.*

<sup>114</sup> *Id.*

<sup>115</sup> *Id.*

window, and someone standing across the street with a pair of binoculars. Both can peer into my office.”<sup>116</sup>

For a person who objects to intrusiveness by a drone, a variety of remedies may be available under state law.<sup>117</sup> For example, if a person claims that a drone operator invaded his or her privacy by filming the person in a private place, the person would have a remedy through a claim for an intrusion.<sup>118</sup> The remedy is if that private footage were then tortuously broadcast, the person could file a claim for publication of private facts.<sup>119</sup> Similarly, if a person were physically injured by someone’s drone, that person could file a claim for battery.<sup>120</sup>

## II. Privacy under trespass law

Trespass law can protect individuals from the use of drones on personal property. A “trespasser” is one who enters or remains upon land in the possession of another without consent.<sup>121</sup> To state a claim for trespass, the claimant must show both that (i) he has a right of possession or ownership of the real property at issue and that (ii) the trespasser has intentionally entered that real property.<sup>122</sup> Technically, a person can go over the fence line, and if done so on foot, intentionally, that person would have nominally been guilty of trespassing. However, what if someone flies drone few hundred feet up in the air without physically entering the property? For example, in November 2014, an Australian woman was sunbathing topless in her back yard and

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<sup>116</sup> *Id.*

<sup>117</sup> Michael Berry, *The drones are coming*, THE PENNSYLVANIA LAWYER, at 53, March 2014, [http://www.lskslaw.com/documents/Drones%20Article%20\(00704789\).PDF](http://www.lskslaw.com/documents/Drones%20Article%20(00704789).PDF)

<sup>118</sup> *Id.*

<sup>119</sup> *Id.*

<sup>120</sup> *Id.*

<sup>121</sup> *Hey, that’s my air! Trespass by delivery drone*, STROUD WIL LINK & HOWARD LLC, (January 6, 2014) <http://www.stroud.com/hey-thats-my-air-trespass-by-delivery-drone/>

<sup>122</sup> *Id.*

was accidentally captured in a photograph by a drone snapping pictures for a real estate listing.<sup>123</sup> Australia also gives importance to its citizens' privacy in a similar manner to the U.S. The picture was placed in online ads and billboards before the mistake was caught.<sup>124</sup> With the U.S. working on regulations for commercial drones, you might think that cases like this would-be part of the conversation.<sup>125</sup> The first element, the extent of a landowner's rights to the airspace above his land, can be a tricky issue.<sup>126</sup>

In the U.S. trespass state laws are different. For example, the general common law rule in Wisconsin is that a trespass may be committed on, beneath, or above the surface of the earth.<sup>127</sup> Furthermore, as defined by Wis. Stat. § 844.01(2), a physical injury to real property includes unprivileged intrusions to the "surface, subsurface or suprasurface."<sup>128</sup> A trespass may therefore occur in airspace.<sup>129</sup> Therefore impacting the landowner's then existing use of the land and enveloping airspace.<sup>130</sup>

In *United States v. Causby*, 1942, a chicken farmer outside of Greensboro, North Carolina, sued the U.S. government.<sup>131</sup> He said the frequent, low overflight of military aircraft on the adjacent runway was scaring his birds and damaging his livelihood, and he wanted

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<sup>123</sup> Nathaniel Turner, *A look at the privacy policies for the FAA's six drone test sites*, ACLU, (December 10, 2014)<https://www.aclu.org/blog/free-future/look-privacy-policies-faas-six-drone-test-sites?redirect=blog/technology-and-liberty/look-privacy-policies-faas-six-drone-test-sites>

<sup>124</sup> *Id.*

<sup>125</sup> *Id.*

<sup>126</sup> Hey, that's my air! Trespass by delivery drone, *supra* note 121.

<sup>127</sup> *Id.*

<sup>128</sup> *Id.*

<sup>129</sup> *Id.*

<sup>130</sup> *Id.*

<sup>131</sup> *United States v. Causby*, 328 U.S. 256 (1946), (Also, see Michael Frank, Drone Privacy: Is Anyone in Charge? CONSUMER REPORTS, (February 10, 2016)<http://www.consumerreports.org/electronics/drone-privacy-is-anyone-in-charge/>)

compensation.<sup>132</sup> The case made it all the way to the Supreme Court in 1946.<sup>133</sup> In one result was that the Court set limits on private airspace: If you own a house, your property rights extend 83 feet up into the air.<sup>134</sup> FAA regulates the airspace laws for drones. According to FAA, maximum altitude of 400 feet above ground level (AGL) or, if higher than 400 feet AGL, remain within 400 feet of a structure. Trespass laws vary from state to state.

The upward boundaries of private property may be changing.<sup>135</sup> However, drones cannot be measured on their physical presence at certain distance because drones are equipped with advanced technology of high definition cameras and zoom-in capability. For example, a person can fly drone in his own backyard while taking pictures of neighbor's backyard by using rotational camera. The wide availability of drone technology (combined with HD video) scrambles the sense of what is right.<sup>136</sup> Specifically, it points out how much sense of privacy is intimately connected with the expectations of property rights.<sup>137</sup>

Drones -- as flying, seeing objects -- scramble the 2D sense of property boundaries, and along the way, make privacy much more complicated.<sup>138</sup> Ryan Calo, a University of Washington law professor and former research director of Stanford's Center for Internet and Society said, "What [property] rights you have beyond what you can physically touch has always been difficult

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<sup>132</sup> *Id.*

<sup>133</sup> Michael Frank, *supra* note 20.

<sup>134</sup> *Id.*

<sup>135</sup> Brian Palmer, *How much of the airspace above your home do you own?* SLATE,(July 11, 2013)[http://www.slate.com/articles/news\\_and\\_politics/explainer/2013/07/photographer\\_george\\_steinmetz\\_arrest\\_how\\_much\\_airspace\\_do\\_you\\_own.html](http://www.slate.com/articles/news_and_politics/explainer/2013/07/photographer_george_steinmetz_arrest_how_much_airspace_do_you_own.html)

<sup>136</sup> Alexis Madrigal, *If I fly a UAV over my neighbor's house, is it trespassing?* THE ATLANTIC,(October 10, 2012)<http://www.theatlantic.com/technology/archive/2012/10/if-i-fly-a-uav-over-my-neighbors-house-is-it-trespassing/263431/>

<sup>137</sup> *Id.*

<sup>138</sup> *Id.*

for the law to grapple with."<sup>139</sup> Government drones get the most media attention, but privately owned models, now affordable for many groups and individuals, are becoming a flashpoint.<sup>140</sup> Paparazzi, media organizations, or just about anyone who wants a look at private land has access to the technology.<sup>141</sup>

#### **F. Drone data protection**

However, the challenge of filming or taking pictures of individuals did not arise with the emergence of drones. This challenge is also with cameras, smartphones, dash cameras, and many other such technologies. It is difficult to find out who is filming or taking pictures. It is not fair to blame drones for the invasion of privacy of individuals. There are too many federal, state, and local agencies with too many surveillance aircraft to pretend any longer that aerial spying is rare.<sup>142</sup> There is too little oversight to presume all these government entities are acting legally.<sup>143</sup>

As for safety, Americans know neither what sort of aerial-surveillance data has been collected nor how secure it is.<sup>144</sup> Security researcher Nils Rodday learned that he could successfully hack into professional drones and take over their operations on a \$40 budget.<sup>145</sup> However, concerns of hacking and misusing of data were raised with other similar technology such as smart phones, cameras, traffic signal cameras, dash cams, and CCTV.

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<sup>139</sup> *Id.*

<sup>140</sup> Brain Palmer, *supra* note 135.

<sup>141</sup> *Id.*

<sup>142</sup> Conor Friedersdorf, *The Rapid Rise of Federal Surveillance Drones Over America*, THE ATLANTIC, (March 10, 2016) <http://www.theatlantic.com/politics/archive/2016/03/the-rapid-rise-of-federal-surveillance-drones-over-america/473136/>

<sup>143</sup> *Id.*

<sup>144</sup> *Id.*

<sup>145</sup> *Id.*

People are being monitored every day by government, law enforcement, businesses, and private citizens.<sup>146</sup> Surveillance cameras are on traffic lights, street corners, banks, hospitals, office building, parking lots, and even private citizens have cameras outside their homes.<sup>147</sup> These cameras play an important role in security and public safety.<sup>148</sup> Another example is dashcams, which are small video cameras that are typically installed on the dashboard of a car and tend to be small, compact, offer very little in the way of frills, and have one laser-focused purpose.<sup>149</sup> This purpose is to record everything that goes on in or around your vehicle on the off chance that something might go horribly awry while you are on the road.<sup>150</sup> A person can record anyone's activity by using a smart phone. However, drones are attacked for invasion of privacy and have become a more controversial issue than the other similar technologies.

The privacy of individuals is endangered by how data is being used and retained. Government should only retain data in criminal cases. All other data should be deleted. There are laws in place for the protection of data in cases like data collected by the private investigators. Data should not be used for the business purpose. For example, drone can be used to monitor consumer interest and movement. An individual profile can be developed.

One of the best practice of data protection in the U.S. is public disclosure of private facts. This tort imposes liability for the publication of private facts about an individual, provided that

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<sup>146</sup> *UAV Law Enforcement & Privacy*, HOMELAND SURVEILLANCE & ELECTRONICS LLC UAV, (accessed on January 8, 2017)[http://www.hse-uav.com/uav\\_law\\_enforcement\\_privacy\\_protection.htm](http://www.hse-uav.com/uav_law_enforcement_privacy_protection.htm)

<sup>147</sup> *Id.*

<sup>148</sup> *Id.*

<sup>149</sup> Jeremy Laukkonen, *What is a Dashcam?* LIFEWIRE,(August 20, 2016)<https://www.lifewire.com/what-is-a-dash-camera-534890>

<sup>150</sup> *Id.*

publication was highly offensive to a reasonable person.<sup>151</sup> In some states, the plaintiff must also show that the facts disclosed were not newsworthy.<sup>152</sup> This tort likely would allow individuals to sue defendants who use drones to capture intimate details of their personal lives.<sup>153</sup> For instance, a plaintiff might be successful with a public disclosure claim if a website operator used a drone to take a picture of the plaintiff showering at home.<sup>154</sup>

### **G. Strong points of the U.S. in protection of privacy**

The U.S. has strong constitution law to protect the privacy of it is citizens. The U.S. Supreme Court has extended additional privacy to its citizen. Also, the FAA can create a zone of privacy through regulating flight.

### **H. Weak points of the U.S. in protection of privacy**

States must comply with the federal laws. Federal enactments pre-empt any state enactment on this issue. State governments are blocked out of legislating on this issued due to the passage of the FAA Modernization and Reform Act, 2012.

## **3. Drone use in the U.K.**

Drone use is growing at a rapid rate in the U.K. and its skies are some of the busiest anywhere in the world.<sup>155</sup> There are rules governing ownership, flying, and using a drone in the U.K.<sup>156</sup> Government uses drones for various purpose. For example, Devon and Cornwall Police, which covers the largest geographic area of any force in England, will dispatch the technology to crime

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<sup>151</sup> Jeffrey Kosseff, *Drones: Aren't the laws already on the books?* THE PRIVACY ADVISOR,(February 25, 2014)<https://iapp.org/news/a/drones-arent-the-laws-already-on-the-books/>

<sup>152</sup> *Id.*

<sup>153</sup> *Id.*

<sup>154</sup> *Id.*

<sup>155</sup> *Drone Safe*,(accessed on January 10, 2017)<http://dronesafe.uk/>

<sup>156</sup> *U.K. drone laws*, SMASHING DRONES,(accessed on January 10, 2017)<http://smashingdrones.com/uk-drone-laws/>

scenes to take pictures and gather information.<sup>157</sup> Other organizations that operate drones in U.K. airspace are the Defense Science and Technology Laboratory, a research arm of the Ministry of Defense, and Marlborough Communications, which supplies drones and other equipment to the British military.<sup>158</sup> The Home Office and Defra have used drones, as have 11 other state bodies.<sup>159</sup> Civilian use drones for photography and analyzing agricultural land.<sup>160</sup> The use of aerial drone mounted cameras for sports coverage, such as enhancing polo's coverage, according to the sport's leading live streaming service.<sup>161</sup>

### **A. Drone regulation in the U.K.**

The Civil Aviation Authority (CAA) retains responsibility for raising the awareness of safe drone operation and the risks posed to aircraft from inappropriate and irresponsible use.<sup>162</sup> The rules governing use of drones are still evolving, as the implications of these new use cases become clear.<sup>163</sup> For example, the House of Lords E.U. Committee called for the compulsory registration of all commercial and civilian drones, amid growing concern over the use of drones by private

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<sup>157</sup> Sophie Jamieson, *Police force recruits 'drone manager' to take control of crime-fighting flying squad*, THE TELEGRAPH, (March 20, 2017) <http://www.telegraph.co.uk/news/2017/03/20/police-force-recruits-drone-manager-take-control-crime-fighting/>

<sup>158</sup> Jamie Merrill & Oliver Troen, *Drones are filling Britain's skies: Look up now to see what is looking back down at you*, INDEPENDENT, (September 20, 2014) <http://www.independent.co.uk/news/uk/home-news/drones-are-filling-the-skies-look-up-now-to-see-what-is-looking-back-down-at-you-9746459.html>

<sup>159</sup> *Id.*

<sup>160</sup> *How drones are transforming agriculture*, BBC, (August 29, 2012) <http://www.bbc.com/news/av/technology-19415290/how-drones-are-transforming-agriculture>

<sup>161</sup> Rod Gilmour, *Drones are the 'perfect tool' to help shape polo's future*, THE TELEGRAPH, (October 1, 2014) <http://www.telegraph.co.uk/sport/othersports/polo/11133321/Drones-are-the-perfect-tool-to-help-shape-polos-future.html>

<sup>162</sup> Matthew Wall, *Can technology keep our skies safe from nuisance drones?* BBC, (August 25, 2015) <http://www.bbc.com/news/business-33989289>

<sup>163</sup> Sophie Curtis, *Drone laws in the U.K. – what are the rules?* THE TELEGRAPH, (April 18, 2016) <http://www.telegraph.co.uk/technology/2016/04/18/drone-laws-in-the-uk--what-are-the-rules/>

individuals with little knowledge of aviation rules.<sup>164</sup> According to Article 167 small unmanned surveillance aircraft of Civil Aviation Authority in UK:

(1) The person in charge of a small unmanned surveillance aircraft must not fly the aircraft in any of the circumstances described in paragraph (2) except in accordance with a permission issued by the CAA.<sup>165</sup>

(2) The circumstances referred to in paragraph (1) are:

(a) over or within 150 meters of any congested area;

(b) over or within 150 meters of an organized open-air assembly of more than 1,000 persons;

(c) within 50 meters of any vessel, vehicle or structure which is not under the control of the person in charge of the aircraft;

or

(d) subject to paragraphs (3) and (4), within 50 meters of any person.<sup>166</sup>

(3) Subject to paragraph (4), during take-off or landing, a small unmanned surveillance aircraft must not be flown within 30 meters of any person.<sup>167</sup>

(4) Paragraphs (2)(d) and (3) do not apply to the person in charge of the small unmanned surveillance aircraft or a person under the control of the person in charge of the aircraft.<sup>168</sup>

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<sup>164</sup> *Id.*

<sup>165</sup> Article 167, *Unmanned Aircraft*, CIVIL AVIATION AUTHORITY, (accessed on June 13, 2016) <http://www.caa.co.uk/Commercial-industry/Aircraft/Unmanned-aircraft/Unmanned-Aircraft/>

<sup>166</sup> *Id.*

<sup>167</sup> *Id.*

<sup>168</sup> *Id.*

(5) In this article 'a small unmanned surveillance aircraft' means a small unmanned aircraft which is equipped to undertake any form of surveillance or data acquisition.<sup>169</sup>

As of 2017, there is nothing to stop you going and buying a drone and taking it out flying, as long as the drone weighs less than 20kg and you are not using it for commercial reasons.<sup>170</sup> The gadgets have become must-have gifts, prompting the CAA to highlight strict rules that recreational users must follow after they were involved in a number of incidents and near-misses.<sup>171</sup> For example, a drone came within 20ft of a passenger plane as it was about to land at Heathrow Airport.<sup>172</sup> Regulations in force include a ban on flying remote-controlled devices over congested areas or within 50 meters (164ft) of people or buildings without official permission and breaches can result in the operator being taken to court and fined up to £5,000.<sup>173</sup>

### **The U.K. drone laws for commercial users**

Unlike the U.S., U.K. has clearer laws for the commercial drones. Anyone flying a drone in the U.K. for commercial purposes must adhere to the following U.K. drone laws in addition to the U.K. drone laws listed in section above<sup>174</sup>

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<sup>169</sup> *Id.*

<sup>170</sup> Sophie Curtis, *supra* note 163.

<sup>171</sup> Press Association, *Safety warning for drones given as Christmas gifts*, THE TELEGRAPH, (December 25, 2014) <http://www.telegraph.co.uk/news/uknews/law-and-order/11313110/Safety-warning-for-drones-given-as-Christmas-gifts.html>

<sup>172</sup> *Id.*

<sup>173</sup> *Id.*

<sup>174</sup> *United Kingdom Drone Laws*, UAV SYSTEMS INTERNATIONALS, (Last updated November 1, 2015) <https://uavsystemsinternational.com/drone-laws-by-country/united-kingdom-drone-laws/>

- You MUST obtain permission from the CAA prior to any commercial activity or face prosecution for any type of drone.
- An assessment of individual knowledge will be performed. Two companies assess pilot competence on behalf of the CAA as well as guide you through the process of obtaining licensing.
- EuroUSC – Basic National Unmanned Aircraft Systems Certificate – Small
- Resource UAS – Remote Pilot Qualification – Small.<sup>175</sup>

To use a small unmanned aircraft or drone outside of the operating limits set out in the Air Navigation Order then Permission from the CAA is needed, even if the activity is non-commercial. This could include flying a device over a congested area, or within 50m of a building. The Air Navigation Order defines a congested area as being 'any area of a city, town or settlement which is substantially used for residential, industrial, commercial or recreational purposes.'<sup>176</sup>

- Permission must be obtained from the CAA to land or operate within a congested area.<sup>177</sup>
- Permissions granted may be valid for one flight or for a period of up to 12 months.<sup>178</sup>

To ensure that sufficient safety measures have been put in place, CAA needs to demonstrate that they have taken the necessary steps to ensure their drone will not endanger people, property,

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<sup>175</sup> *Id.*

<sup>176</sup> *Guidance on operating permissions for drones*, CIVIL AVIATION AUTHORITY,(accessed June 13, 2016)<http://www.caa.co.uk/Commercial-industry/Aircraft/Unmanned-aircraft/Guidance-on-operating-permissions-for-drones/>

<sup>177</sup> *Id.*

<sup>178</sup> *Id.*

or aircraft.<sup>179</sup> This may be as simple as preparing a safety case or a risk assessment for a one-off flight.<sup>180</sup>

An individual or organization that would like to conduct regular flights with their drone, however, will probably need to submit an operating manual to the CAA for a permanent approval.<sup>181</sup> This will allow greater freedom to operate continuously without the need to seek ad hoc approvals.<sup>182</sup> This type of permission could be of use to emergency services, a local authority that would like to use a drone to carry out maintenance inspections of its property.<sup>183</sup> As with a permission to carry out aerial work, the CAA will need to be assured of the competence of the person who will be flying the device.<sup>184</sup> The ‘pilot’ therefore will probably need to undergo an assessment process with one of the approved National Qualified Entities.<sup>185</sup>

#### **B. Privacy protection against the use of drones by the U.K. government agencies through organizational efforts**

The U.K. does not have a written constitution that enshrines a right to privacy for individuals and there is no common law that provides for a general right to privacy.<sup>186</sup> However, the U.K. has incorporated the European Convention on Human Rights into its national law, which provides for a limited right of respect towards an individual’s privacy and family life.<sup>187</sup> Article 8

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<sup>179</sup> *Id.*

<sup>180</sup> *Id.*

<sup>181</sup> *Id.*

<sup>182</sup> *Id.*

<sup>183</sup> *Id.*

<sup>184</sup> *Id.*

<sup>185</sup> *Id.*

<sup>186</sup> Clare Feikert-Ahalt, *Online Privacy Law: United Kingdom*, LIBRARY OF CONGRESS,(June 2012)<https://www.loc.gov/law/help/online-privacy-law/uk.php>

<sup>187</sup> *Id.*

(1) everyone has the right to respect for his private and family life, his home and his correspondence.<sup>188</sup> (2) There shall be no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others.<sup>189</sup> Several government departments and police forces have increasingly used drones, however the legal guidance warns it is “probably unlawful” for security services to “retain or use surveillance data” captured by drones under current laws.<sup>190</sup>

In September 2014, The Independent revealed that more than 300 operators, including several police forces are now licensed to operate drones in U.K. airspace.<sup>191</sup> Jemima Stratford QC, the leading public law barrister, was commissioned by the All Party Parliamentary Group on Drones, warns the use of drones for surveillance is unlawful and constitutes a “disproportionate interference” with the right to privacy under the European Convention on Human Rights.<sup>192</sup> The legal guidance states that while drone use is covered by the Regulation of Investigatory Powers Act (RIPA) this act was not designed for this purpose.<sup>193</sup> Jemima warns, “we consider, on balance, that is a disproportionate interference with an individual's right to privacy for the security services

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<sup>188</sup> Burns Weston, Richard Falk, Hilary Charlesworth & Andrew Strauss, SUPPLEMENT OF BASIC DOCUMENTS TO INTERNATIONAL LAW AND WORLD ORDER, 4<sup>TH</sup> ED. AT 536, American Casebook Series.

<sup>189</sup> *Id.*

<sup>190</sup> Jamie Merrill, *Government use of surveillance drones is 'probably illegal'*, INDEPENDENT, (October 11, 2014) <http://www.independent.co.uk/news/uk/politics/government-use-of-surveillance-drones-is-probably-illegal-9789296.html>

<sup>191</sup> *Id.*

<sup>192</sup> *Id.*

<sup>193</sup> *Id.*

(or any other government department) to retain and use surveillance data, without any safeguards concerning its use, storage or destruction.”<sup>194</sup>

However, there are ten organizations, among which Privacy International, Liberty, and Amnesty International, are taking this threat extremely seriously and have already brought it to the attention of the European Court of Human Rights.<sup>195</sup> This is the first case before Europe’s highest international human rights court to directly challenge U.K. and U.S. mass surveillance programs revealed by the Snowden disclosures.<sup>196</sup> Its judgments are legally binding and the future of hundreds of millions of people is now dependent on that.<sup>197</sup>

### **C. Use of drone on private property by individuals**

There are different laws for government drone operators and private drone operator on private property. Any individual piloting a drone should be aware of related laws and potential drone liabilities if drones are not used responsibly.<sup>198</sup> The Telegraph reported before Christmas that home insurers are beginning to exclude liability for drones from their policies because of concerns about damage or injury which they may cause.<sup>199</sup> This section discusses various laws such as intrusion upon seclusion and trespass laws to protect the privacy of individuals in the U.K.

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<sup>194</sup> *Id.*

<sup>195</sup> Tihomir Ivanov, *10 Privacy Organizations Oppose U.K.’s Mass Surveillance in Court*, SECURE GROUP,(October 3, 2016)<http://blog.securegroup.com/privacy-organizations-oppose-mass-surveillance>

<sup>196</sup> *Id.*

<sup>197</sup> *Id.*

<sup>198</sup> Michael Booth, *Drones and the law*, PRETTYS, (accessed on May 10, 2017)<http://www.prettys.co.uk/drones-and-the-law>

<sup>199</sup> *Id.*

## I. Privacy under intrusion upon seclusion law

The tort of invasion of privacy by intrusion upon seclusion is less clearly recognized in the U.K., but this appears to be changing.<sup>200</sup> Professor Chris Hunt has noted a recent trend in cases suggesting “English law is evolving to capture intrusions.”<sup>201</sup> After journalists intruded into the hospital room of the actor Gordon Kaye and took photos of the injured man, the English Court of Appeal in 1990 held that he had no right to privacy as such in English law.<sup>202</sup> And in 2004, the House of Lords in *Wainwright v Home Office* expressly declined to recognize a general right to privacy which would extend to physical privacy interferences not involving the dissemination of information.<sup>203</sup> However, in a book review published in 2014, Hunt writes that it ‘seems inevitable that English courts would in fact provide a remedy to a claimant in Kaye’s situation if the case were decided today.’<sup>204</sup>

The law of intrusion upon seclusion is recognized for invasion of privacy by the drones:

- If you intentionally or recklessly hit someone with your drone, you could be liable for battery, which carries both criminal and civil sanctions.
- If you intentionally or recklessly damage someone else’s property with your drone, you could be liable for criminal damage.

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<sup>200</sup> *Serious Invasion of Privacy in the Digital Era*, AUSTRALIAN LAW REFORM COMMISSION, at 78, (June 30, 2014) [https://www.alrc.gov.au/sites/default/files/pdfs/publications/final\\_report\\_123\\_whole\\_report.pdf](https://www.alrc.gov.au/sites/default/files/pdfs/publications/final_report_123_whole_report.pdf)

<sup>201</sup> *Id.*

<sup>202</sup> *Id.*

<sup>203</sup> *Id.*

<sup>204</sup> *Id.*

- If you fly your drone without exercising a reasonable standard of care and injure someone or damage their property, you could be negligent and liable to compensate the victim for personal injury or damage to property.<sup>205</sup>

### **I. Privacy under trespass law**

If a drone fly's low over someone's land without their permission, then the drone operator could be liable in trespass, even if operator does not personally go onto the land.<sup>206</sup> Anyone who harms, house or property intentionally or recklessly with anything, including a wayward drone, may face a claim for personal injury or trespass (and possibly prosecution for assault or criminal damage).<sup>207</sup> The operator is traced, which may not be straightforward given that there are no licensing requirements for recreational users at present.<sup>208</sup>

The lower stratum is concerned with the portion immediately above the land and interference with this air space would affect the landowner's reasonable enjoyment of the land and the structures upon it.<sup>209</sup> Section 76 Civil Aviation Act 1982 states that 'the lower stratum is unlikely to extend beyond an altitude of much more than 500 or 1,000 feet above roof level, this being roughly the minimum permissible distance for normal overflying of any aircraft.'<sup>210</sup> In the U.K., under the Civil Aviation Act of 1982, the generally accepted amount of air above one's roof

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<sup>205</sup> Michael Booth, *supra* note 198.

<sup>206</sup> *Id.* (although this is generally a civil rather than a criminal matter)

<sup>207</sup> Kate Symons, *How to stop a drone flying over your home and the rules on CCTV*, FINANCIAL TIMES, (May 6, 2016) <https://www.ft.com/content/d940ac46-0c9a-11e6-b41f-0beb7e589515>

<sup>208</sup> *Id.*

<sup>209</sup> *What is my land*, I BRIEF, (accessed October 2016) <http://www.inbrief.co.uk/land-law/land-ownership/>

<sup>210</sup> *Id.* (Also see Rules of the Air Regulations 2007, Sch 1, s. 3(5))

a person is entitled to is approximately 500-1,000 feet, though this is not a hard definition.<sup>211</sup> Contradictory to U.S. the U.K. has common law of trespass for the entire country. Vehicles parked or abandoned on private land can be treated as per civil trespass.<sup>212</sup>

#### **D. Drones data protection laws**

The Data Protection Act will be applicable to flying a drone with a surveillance camera mounted on it and collecting images of individuals who can be identified from them, even if it was unintentional.<sup>213</sup> Where drones are fitted with cameras or recording equipment, there will also be data protection and privacy issues which will need to be considered.<sup>214</sup> The laws governing the retention of data by Internet Service Providers (ISPs) are contained in the Data Protection Act 1998; the Privacy and Electronic Communications (EC Directive) Regulations 2003; and the Anti-terrorism, Crime, and Security Act 2001, along with its Code of Practice.<sup>215</sup>

The Information Commissioner makes the distinction between ‘hobbyists’ and individuals or organizations who use drones for professional or commercial purposes.<sup>216</sup> Currently data gathered by surveillance drones in the U.K. is governed by the Regulation of Investigatory Powers Act (RIPA) and the CCTV code within the Data Protection Act.<sup>217</sup> However the APPG claims

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<sup>211</sup> Karl Smallwood, *If you own land, how far above and below do you own?* TODAY I FOUND OUT, (August 6, 2014) <http://www.todayifoundout.com/index.php/2014/08/land-much-really-right/>

<sup>212</sup> *Trespassing*, MY LAWYER, (accessed on October 4, 2016) <http://www.mylawyer.co.uk/trespassing-a-A76076D34460/>

<sup>213</sup> *U.K. Drone Laws*, *supra* note 156.

<sup>214</sup> Pere Kenyon, *Drones and the law*, CRIPPS, (May 7, 2015) <http://www.cripps.co.uk/drones-and-the-law/>

<sup>215</sup> Clare Feikert-Ahalt, *supra* note 186.

<sup>216</sup> Sophie Curtis, *supra* note 163.

<sup>217</sup> Jamie Merrill, *supra* note 190.

these have been “left behind” by advances in drone technology, which now include biometric and infrared cameras able of capturing unprecedented amounts of personal information.<sup>218</sup>

The CCTV Code of Practice, which now incorporates a section on unmanned aircraft, states that professional users must comply with data privacy rules.<sup>219</sup> While the Code of Practice distinguishes between private and commercial users, and notes that commercial operators must comply with data protection obligations.<sup>220</sup> Further, code states that “it will be good practice for domestic users to be aware of the potential privacy intrusion which the use of drones can cause to make sure they’re used in a responsible manner.”<sup>221</sup>

The U.K. data protection authority, the Information Commissioner’s Office (ICO), largely views the images captured by drones as equivalent to the use of CCTV, although with drones there is even greater scope for infringement of privacy as drones can be used to film people in circumstances where they have a reasonable expectation of privacy, for example, in their back garden.<sup>222</sup>

As best practice measures, the ICO recommends, in its CCTV Code of Practice, that a drone operator should:

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<sup>218</sup> *Id.*

<sup>219</sup> Tim Wright, *Drones in U.K. skies: an increasingly crowded regulatory airspace*, COMPUTERWEEKLY.COM, (March 2015) <http://www.computerweekly.com/news/2240241676/Drones-in-UK-skies-an-increasingly-crowded-regulatory-airspace>

<sup>220</sup> *Regulation of Drones: United Kingdom*, LIBRARY OF CONGRESS, (accessed on January 8, 2017) <https://www.loc.gov/law/help/regulation-of-drones/united-kingdom.php>

<sup>221</sup> *Id.*

<sup>222</sup> Pere Kenyon, *supra* note 214.

- Ensure that the camera on the drone can be switched on and off remotely, to limit recording to the specific function planned for; and
- Ensure software that uses selective focusing or ‘tilt-shift’ effects are incorporated to minimize the risk of producing clear images of people whose images are not intended to be captured.<sup>223</sup>

The privacy and data protection obligations that arise can be further complicated if images are then posted on social media and evolve from private content into public content.<sup>224</sup> A number of social networks state in their terms and conditions that they can license user content to third parties.<sup>225</sup> Generally speaking, an individual's consent is required before his or her personal data can be processed.<sup>226</sup> However, for example, if journalists are using a drone to film a protest attended by thousands of people, it would be difficult to expect to seek consent from every individual.<sup>227</sup> In such a scenario, the ICO recommends being innovative in the provision of information to individuals who may be filmed.<sup>228</sup>

For example, it may be appropriate for a drone operator to wear high-visibility clothing to identify the fact that he or she is operating a drone in the area, to place signs near the site to explain that overhead filming is taking place, and to direct attendees to a privacy notice on a website.<sup>229</sup> The key is to find some way to ensure that the people being filmed have access to the information they require to make an informed decision as to whether they want to take the risk of having their image captured by an overhead drone.<sup>230</sup> In particular, the operator will still be obliged to process

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<sup>223</sup> Tim Wright, *supra* note 219.

<sup>224</sup> Regulation of Drones: United Kingdom, *supra* note 220.

<sup>225</sup> *Id.*

<sup>226</sup> Tim Wright, *supra* note 219.

<sup>227</sup> *Id.*

<sup>228</sup> *Id.*

<sup>229</sup> *Id.*

<sup>230</sup> *Id.*

the data collected in line with the U.K.'s Data Protection Act 1998 (DPA), store it securely and retain it only for the minimum amount of time necessary, disposing of it or destroying it when no longer required.<sup>231</sup>

Alos, "Personal data" is defined as data that "relate to a living individual who can be identified—(a) from those data, or (b) from those data and other information which is in the possession of, or is likely to come into the possession of, the data controller."<sup>232</sup> Personal data shall be accurate and, where necessary, kept up to date.<sup>233</sup> Personal data should be kept only in criminal cases everything else should be deleted.

#### **E. Strong points of the U.K. in protection of privacy**

The U.K. has incorporated the European Convention on Human Rights into its national law, which provides for a limited right of respect towards an individual's privacy and family life.<sup>234</sup> The CAA has created detailed regulations for the commercial drone users. U.K. has strong data protection laws and the U.S. should incorporate parts of the data protections laws such as CCTV code.

#### **F. Weak points of the U.K. in protection of privacy**

The U.K. constitution law does not provide privacy protection for the citizens. Broader protection under trespass law. Broader protection against use by individual through both criminal

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<sup>231</sup> *Id.*

<sup>232</sup> Clare Feikert-Ahalt, *supra* note 186.

<sup>233</sup> *Data Protection Act 1998, Schedule 1(4)*<http://www.legislation.gov.uk/ukpga/1998/29/schedule/1>

<sup>234</sup> Clare Feikert-Ahalt, *supra* note 186.

and civil law. The U.K. governments might get blocked out of legislating on this issued due to the Brit-exit.

#### 4. Drone use in India

As of 2017, lots of interests is being shown for civil uses, including both commercial and recreational, of drones in India.<sup>235</sup> Drones have potential for a large number of civil applications.<sup>236</sup> The increasing use of drone-enabled solutions by various state departments and ministries — such as the railways, surface transport, power, and law enforcement — further validates their efficacy.<sup>237</sup> Drones are quickly becoming cost effective and more capable and have been widely adopted by the law enforcement agencies in India.<sup>238</sup> Government agencies have primarily imported drones for surveillance, monitoring India's borders with China, Pakistan, and Bangladesh and maintaining law and order.<sup>239</sup>

Apart from military and law enforcement, drones have also been used for wildlife conservation, agriculture, remote monitoring, and other uses in India.<sup>240</sup> Also, some of India's startups are revolutionizing drone applications in areas as diverse as disaster management, crop insurance, mining, infrastructure projects, and land records.<sup>241</sup> The airspace over cities in India has high density of manned aircraft traffic.<sup>242</sup> Due to lack of drone regulations in India, operating

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<sup>235</sup> *Use of Unmanned Aerial Vehicle (UAV)/ Unmanned Aircraft Systems (UAS) for Civil Applications*, GOVERNMENT OF INDIA OFFICE OF THE DGCA,(October 7, 2014)[http://dgca.nic.in/public\\_notice/PN\\_UAS.pdf](http://dgca.nic.in/public_notice/PN_UAS.pdf)

<sup>236</sup> *Id.*

<sup>237</sup> Ananth Padmanabhan, *Let the Drone Industry Take Off*, CARNEGIE INDIA,(February 28, 2017)<http://carnegieindia.org/2017/02/28/let-drone-industry-take-off-pub-68147>

<sup>238</sup> *Unravelling the Future Game of Drones*, *supra* note 79.

<sup>239</sup> Hyacinth Mascarenhas, *India places drones on prohibited and dutiable goods list*, INTERNATIONAL BUSINESS TIMES,(March 3, 2016)<http://www.ibtimes.co.uk/india-places-drones-prohibited-dutiable-goods-list-1547263>

<sup>240</sup> *Id.*

<sup>241</sup> Ananth Padmanabhan, *supra* note 237.

<sup>242</sup> *Use of Unmanned Aerial Vehicle (UAV)/ Unmanned Aircraft Systems (UAS) for Civil Applications*, *supra* note 235.

procedures and standards, and uncertainty of the technology, drones pose a threat for air collisions and accidents.<sup>243</sup> However, its use besides being a safety issue, also poses security threat.<sup>244</sup>

### **A. Drone regulations in India**

Overnight in October of 2014, the DGCA, India's civil aviation regulator, banned all drones from the Indian airspace operated without "prior authorization."<sup>245</sup> The Indian drone entrepreneurs' party was over until, as was stated by the DGCA in its circular, further guidelines were framed by the DGCA.<sup>246</sup> No authorizations have been granted to any private organization or individuals since October 2014 and "further guidelines" are still in process.<sup>247</sup> In April 21, 2016, the regulator came out with draft guidelines for operation of civil drones.<sup>248</sup>

"DGCA will register all civil unmanned aircraft and issue an operator permit on case to case basis. All drones intended to be operated in India will require a Unique Identification Number (UIN) issued from DGCA. International operations of civil drones (flying across the territory) and/or over water shall be strictly prohibited. The drone shall not be flown over the entire air space over the territory of Delhi (30km radius from Rashtrapati Bhavan) and areas falling within 50 km from the

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<sup>243</sup> *Id.*

<sup>244</sup> *Id.*

<sup>245</sup> Anirudh Rastogi, *Drones in India: The Pull-Down Effect of Overly Stringent Regulations*, THE HUFFINGTON POST, (updated September 9, 2016) <http://www.huffingtonpost.in/anirudh-rastogi/drones-in-india-the-pull-down-effect-of-overly-stringent-regula/>

<sup>246</sup> *Id.*

<sup>247</sup> *Id.*

<sup>248</sup> *Govt. issues draft rules to fly drones in India*, HINDUSTAN TIMES, (April 27, 2016) <http://www.hindustantimes.com/business/govt-issues-draft-rules-to-fly-drones-in-india/story-nWvYRNzfddAHTp9jC2n1EL.html>

international borders. Also, drone shall not be flown over other sensitive locations viz. nuclear stations, military facilities, and strategic locations.”<sup>249</sup>

However, despite the uncertain regulatory future, domestic startups are producing and using drones for both security and commercial purposes.<sup>250</sup> Drones have been used to provide services ranging from disaster relief, security and surveillance, and aerial photography.<sup>251</sup>

### **General Drone Laws in India**

Many cities in India including Mumbai and Delhi have banned the use of drones without prior permission.<sup>252</sup> The argument is that it can put people's lives in danger in case the low-flying drones hurt someone or crash with an aircraft.<sup>253</sup> Also, they are considered as a security hazard as anti-national elements can use them to conduct recce of sensitive places for plotting terror attacks.<sup>254</sup> As a result, the police in other cities are booking violators - who happen to be wedding photographers and tourists in most cases - under different sections of Indian Penal Code (IPC), most prominently section 336 (an act endangering life or personal safety of others).<sup>255</sup>

In the first such instance, the Jodhpur police booked a photographer under section 336 of IPC after the drone he was test flying fell on the rooftop of a house on February 9, 2016.<sup>256</sup> The

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<sup>249</sup> *Id.*

<sup>250</sup> TekendraParmar, *Drones in India*, CENTER FOR THE STUDY OF THE DRONE AT BARD COLLEGE, (December 4, 2014)<http://dronecenter.bard.edu/drones-in-india/>

<sup>251</sup> *Id.*

<sup>252</sup> *Now, flying a drone can land you in prison*, TIMES OF INDIA,(February 15, 2016)<http://timesofindia.indiatimes.com/city/jaipur/Now-flying-a-drone-can-land-you-in-prison/articleshow/50990613.cms>

<sup>253</sup> *Id.*

<sup>254</sup> *Id.*

<sup>255</sup> *Id.*

<sup>256</sup> *Id.*

police recovered a memory card containing an 8-minute-long video recording of places like Mehrangarh Fort.<sup>257</sup> Additional commissioner of police, Jaipur, Prafulla Kumar said that there is a lot of ambiguity in the laws with regard to flying drones.<sup>258</sup> An officer said it “is illegal to fly drones over defense establishments and places of historical importance, but there are some grey areas with regard to flying drones in civilian areas. It is like riding a bike. If you hurt someone or put somebody's life in danger because of reckless driving, you are liable to be booked.”<sup>259</sup>

As of 2016, the Union government is in the process of formulating guidelines about flying drones.<sup>260</sup> Regulators, however, are concerned about the difficulty of enforcing new rules to track and monitor drones.<sup>261</sup> R N Choubey, Secretary of the Ministry of Civil Aviation told AIN Online, "even the U.S. is struggling with similar issues. While we are looking at international best practice, DGCA and MOCA are working [with] the Ministry of Home Affairs, which is responsible for homeland security, to allow civilian use of drones without a security component. We are struggling. This is a transition phase. If somebody does something dangerous, we have our standard operating procedures."<sup>262</sup>

The DGCA has announced that till proper rules and regulations are formulated use of drones in India is illegal.<sup>263</sup> The DNA India report states that guidance on the civil operation of drones is being taken from the Air Navigation Service provider, the ministry of defense, the

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<sup>257</sup> *Id.*

<sup>258</sup> *Id.*

<sup>259</sup> *Id.*

<sup>260</sup> *Id.*

<sup>261</sup> Hyacinth Mascarenhas, *supra* note 239.

<sup>262</sup> *Id.*

<sup>263</sup> *Civilian drones banned in India: Report*, INDIA TODAY IN TECH,(last updated October 13, 2014)<http://indiatoday.intoday.in/technology/story/civilian-drones-banned-in-india-report/1/395539.html>

ministry of home affairs, and other security agencies.<sup>264</sup> Some general guidelines to adhere to in India when flying your drone are the following; do not fly in crowded areas, over crowds of people, near airports, or near military installations.<sup>265</sup>

## **B. Privacy protection against the drone use by government agencies**

The current legal framework for surveillance in India is a legacy of the colonial era laws drafted by the British.<sup>266</sup> International conventions on privacy and human rights in general India is party to several international instruments containing privacy protections. These include the Universal Declaration on Human Rights (Article 12)<sup>3</sup> “everyone has the right to life, liberty and security of person.”<sup>267</sup> The International Convention on Civil and Political Rights (Article 17) 1) No one shall be subjected to arbitrary or unlawful interference with his privacy, family, home or correspondence, nor to unlawful attacks on his honor and reputation; 2) Everyone has the right to the protection of the law against such interference or attacks.<sup>268</sup>

## **I. Privacy protection under the Indian constitution law**

The Constitution of India does not specifically guarantee a “right to privacy however through various judgments over the years the Courts of the country have interpreted the other rights in the Constitution to be giving rise to a (limited) right to privacy – primarily through Article 21 –

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<sup>264</sup> *Id.*

<sup>265</sup> *India Drone Laws*, UAV SYSTEMS INTERNATIONAL,(Last modified March 1, 2016)<https://uavsystemsinternational.com/drone-laws-by-country/india-drone-laws/>

<sup>266</sup> Vipul Kharbanda, *Policy paper on surveillance in India*, THE CENTRE FOR INTERNET SOCIETY, (August 3, 2015)<http://cis-india.org/internet-governance/blog/policy-paper-on-surveillance-in-india>

<sup>267</sup> *The Universal Declaration of Human Rights*, CLAIMING HUMAN RIGHTS,(accessed on May 11, 2017) [http://www.claiminghumanrights.org/udhr\\_article\\_3.html#at4](http://www.claiminghumanrights.org/udhr_article_3.html#at4)

<sup>268</sup> *International Covenant on Civil and Political Rights*, UNITED NATIONS HUMAN RIGHTS, (accessed on May 11, 2017)<http://www.ohchr.org/EN/ProfessionalInterest/Pages/CCPR.aspx>

the right to life and liberty.<sup>269</sup> For example, in the case of *Kharak Singh v. The State of Uttar Pradesh*,<sup>270</sup> *Gobind v. State of Madhya Pradesh*<sup>271</sup> and *R Rajgopal & Anr v. State of Tamil Nadu*,<sup>272</sup> the Supreme Court of India has recognized “right to privacy” as a part of the “right to life and personal liberty” guaranteed under Article 19 and Article 21 of the Constitution<sup>273</sup> of India.<sup>274</sup> As of 2017, the Right to Privacy Bill is in a consultative stage in the Parliament.<sup>275</sup> Simultaneously, there is a writ petition pending before the Supreme Court, challenging the use of biometric traits for identification purposes, which requires considering whether “right to privacy” constitutes a fundamental right of an individual guaranteed under the Constitution of India.<sup>276</sup>

In 2015, this interpretation was challenged and referred to a larger Bench of the Supreme Court (the highest Court in the country) in the writ petition *Justice K.S Puttaswamy & Another vs. Union of India and Others*.<sup>277</sup> The constitutional right to privacy in India is not a very strong right in itself and is subject to a number of restrictions.<sup>278</sup> These restrictions have not been defined or elucidated anywhere and have been culled out through the interpretation of various provisions and judgments of the Supreme Court of India:

- The right to privacy can be restricted by procedure established by law which procedure would have to be just, fair, and reasonable;<sup>279</sup>

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<sup>269</sup> *State of Surveillance: India*, PRIVACY INTERNATIONAL, (Last modified March 2, 2016) <https://privacyinternational.org/node/738>

<sup>270</sup> AIR 1963, 1295 <http://www.judis.nic.in/supremecourt/imgs1.aspx?filename=3641>

<sup>271</sup> AIR 1975, 1378 <http://www.judis.nic.in/supremecourt/imgs1.aspx?filename=6014>

<sup>272</sup> AIR 1995 SC 264

<sup>273</sup> *India*, CONSTITUTION OF INDIA (1949)

<sup>274</sup> Unravelling the Future Game of Drones, *supra* note 79.

<sup>275</sup> *Id.*

<sup>276</sup> *Id.*

<sup>277</sup> *State of Surveillance: India*, *supra* note 269.

<sup>278</sup> *Id.*

<sup>279</sup> *Id.*

- Reasonable restrictions can be imposed on the right to privacy in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency, or morality, or in relation to contempt of court, defamation, or incitement to an offence;<sup>280</sup>
- The right to privacy can be restricted if there is an important countervailing interest which is superior;<sup>281</sup>
- The right to privacy can be restricted if there is a compelling state interest to be served;<sup>282</sup>
- Reasonable restrictions can be imposed upon the right to privacy either in the interests of the public or for the protection of the interests of any Scheduled Tribe; [Article 19(5) of the Constitution of India, 1950]<sup>283</sup>
- Certain restrictions on the right to privacy in case of public personalities, etc.<sup>284</sup>

## II. Interception and surveillance laws

There are two major laws that deal with digital and telephonic surveillance respectively.<sup>285</sup> The Information Technology Act, 2000 (“IT Act”) and the Indian Telegraph Act, 1885 (“Telegraph Act”).<sup>286</sup> The provision of the Telegraph Act relevant for surveillance is Section 5 which empowers the Central Government and State Governments of India to order the interception of messages in two circumstances:

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<sup>280</sup> *Id.*

<sup>281</sup> *Id.*

<sup>282</sup> *Id.*

<sup>283</sup> *Id.*

<sup>284</sup> *Id.*

<sup>285</sup> *Id.*

<sup>286</sup> *Id.*

(1) in the occurrence of any “public emergency” or in the interest of “public safety,”  
and

(2) if it is considered necessary or expedient to do so, in addition to the following instances: the interests of the sovereignty and integrity of India; the security of the State; friendly relations with foreign states; public order; for preventing incitement to the commission of an offense.<sup>287</sup>

The IT Act widely regulates the interception, monitoring, decryption and collection of information of digital communications in India.<sup>288</sup> More specifically, section 69 of the IT Act empowers the Central Government and the State Governments to issue directions for the monitoring, interception or decryption of any information transmitted, received or stored through a computer resource.<sup>289</sup> Section 69 of the IT Act expands the grounds upon which interception can take place as compared to the Telegraph Act.<sup>290</sup> As such, the interception of communications under Section 69 is carried out in the interest of: The sovereignty or integrity of India; Defense of India; Security of the State; Friendly relations with foreign States; Public order; Preventing incitement to the commission of any cognizable offense relating to the above; and for the investigation of any offense.<sup>291</sup>

In India, surveillance is carried out by the central intelligence agencies and the state police.<sup>292</sup> There are at least sixteen different intelligence agencies that have been established by

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<sup>287</sup> *Id.*

<sup>288</sup> *Id.*

<sup>289</sup> *Id.*

<sup>290</sup> *Id.*

<sup>291</sup> *Id.*

<sup>292</sup> *Id.*

executive order.<sup>293</sup> Typically they are established under different and relevant government departments, they are centralized in structure and opaque in nature as they are not subject to the RTI Act or to audits by the CAG.<sup>294</sup> It is hard to identify if government surveillance targets one group.<sup>295</sup> In the past, news reports indicated that a variety of actors are subject to surveillance including journalists, right to information activists, politicians, NGOs, and free speech activists.<sup>296</sup>

In the aftermath of the terrorist attacks on Mumbai in November 2008, a number of surveillance programs were introduced which amplified the demand for surveillance technologies.<sup>297</sup> Many of the world's largest surveillance companies like ZTE, Utimaco and Verint Systems have India offices.<sup>298</sup> Additionally, command and control servers of FinFisher have been found in India.<sup>299</sup> Of the 100 companies researched by civil society research group the Centre for Internet and Society, 76 companies appear to sell surveillance products performing functions such as internet monitoring software, social network analysis software, data mining and profiling software, surveillance cameras, analytics, biometric collection, access control systems etc.<sup>300</sup> Most of the companies researched were headquartered in India, however some were headquartered in other countries such as the U.S., U.K., France, and Poland.<sup>301</sup> The research conducted suggested that biometric technology, access control systems, Internet and phone monitoring solutions, as well as RFID and GPS tracking devices are high in demand.<sup>302</sup>

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<sup>293</sup> *Id.*

<sup>294</sup> *Id.*

<sup>295</sup> *Id.*

<sup>296</sup> *Id.*

<sup>297</sup> *Id.*

<sup>298</sup> *Id.*

<sup>299</sup> *Id.*

<sup>300</sup> *Id.*

<sup>301</sup> *Id.*

<sup>302</sup> *Id.*

### C. Use of drones on private property by individuals

In India, the police realized that there were no regulations on drones and banned drone use.<sup>303</sup> The ban has been imposed due to ‘national security’, the DGCA acknowledged that drones have potential for a large number of civil applications.<sup>304</sup> However, drones in India are generally permitted as long as they fly over private property, and permission is given by the owner of the private property to fly them there.<sup>305</sup> Prior permission is required to fly drone over the public property from the local authorities.<sup>306</sup> Similar to the U.S. and U.K., the privacy protection for drone use by individuals on private property can be protected by the various tort laws.

#### Privacy under tort law

India lags in the drone privacy regulations, that gap can be filled by the tort law to protect privacy. The right to privacy is encompassed in the field of tort law which include the principles of nuisance, trespass, harassment, defamation, malicious falsehood, and breach of confidence.<sup>307</sup> The tort of defamation involves the right of every person to have his reputation preserved inviolate.<sup>308</sup> It protects an individual’s estimation in the view of the society and its defenses are ‘truth’ and ‘privilege,’ which protect the competing right of freedom of speech.<sup>309</sup>

Also, state governments are seeking to bring a truant drone within the ambit of existing law by

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<sup>303</sup> *Unravelling the Future Game of Drones*, *supra* note 79.

<sup>304</sup> *Id.*

<sup>305</sup> *India Drone Laws*, *supra* note 265.

<sup>306</sup> *Id.*

<sup>307</sup> Devesh Saxena, *Position and Perspective of Privacy Laws in India*, ACADEMIKE, (September 8, 2014) <http://www.lawctopus.com/academike/position-perspective-privacy-laws-india/>

<sup>308</sup> *Id.*

<sup>309</sup> *Id.*

terming it a 'public nuisance, 'endangering public safety', etc.<sup>310</sup> For example, in the State of Tamil Nadu, on capturing an unauthorized drone and its operator, 'a police complaint was filed and a case was registered under Section 287 (negligent conduct with respect to machinery) and 336 (endangering the life or personal safety of others), of the Indian Penal Code, which carry a punishment of imprisonment for up to six months, or with a fine up to INR 1000 (approximately USD 15), or with both and imprisonment for up to three months, or with fine up to INR 250 (approximately USD 4), or with both, respectively.<sup>311</sup>

#### **D. Data protection laws**

Unlike the U.S and U.K., India does not have any separate and exclusively data protection law.<sup>312</sup> However, the courts on numeral instances have interpreted "data protection" within the ambits of "Right to Privacy" as implicit in Article 19 and 21 of the Constitution of India and "The Indian Contracts Act."<sup>313</sup> Also, the concepts of data privacy and data protection were given focused attention through provisions of the IT Act, 2000 after its amendments in the year 2009 (Information Technology (Amendment) Act, 2008).<sup>314</sup> The Information Technology (Amendment) Act, 2008, brought into existence provisions such as Section 43-A and Section 72-A.<sup>315</sup> Whereas Section 43-A of the IT Act primarily concentrates on the compensation for negligence in implementing and

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<sup>310</sup> Ridha Aditya Nugraha, Deepika Jeyakodi & Thitipon Mahem, *Urgency for Legal Framework on Drones: Lessons for Indonesia, India, and Thailand*, 6 INDON. L. REV. 142, 2016

<sup>311</sup> *Id.*, at 143.

<sup>312</sup> Vaibhava Pandey, *India: Data Protection Laws in India: The Road Ahead*, MONDAQ, (July 1, 2015) <http://www.mondaq.com/india/x/408602/data+protection/DATA+PROTECTION+LAWS+IN+INDIA+THE+ROAD+AHEAD>

<sup>313</sup> *Id.*

<sup>314</sup> Supratim Chakraborty & Aritri Chowdhury, *Overview of Data Privacy Laws in India and Aspects of Data Protection That Your Company Should Take into Account When Establishing a Business in India*, ASSOCIATION OF CORPORATE COUNSEL, (February 25, 2017) <http://www.acc.com/legalresources/quickcounsel/establishing-a-business-in-india.cfm>

<sup>315</sup> *Id.*

maintaining ‘reasonable security practices and procedures’ in relation to ‘sensitive personal data or information’ (“SPDI”), Section 72-A of the IT Act mandates punishment for disclosure of ‘personal information’ in breach of lawful contract or without the information provider’s consent.<sup>316</sup>

Civilian drones fly at lower altitudes, gathering data, and carrying out aerial remote sensing.<sup>317</sup> Many drone operators offer big data and analytics solutions to utility companies and other sectors.<sup>318</sup> The guidelines ought to have devoted much more attention to putting in place a comprehensive framework that regulates data capture and convincingly addresses privacy violations.<sup>319</sup>

***Use, retention and withdrawal:*** Data controllers can only use personal information for the purpose for which it was collected.<sup>320</sup> They cannot retain SPDI for longer than is required for the purposes for which the information can lawfully be used, or as otherwise required under any other law.<sup>321</sup> The data subject of the SPDI has the right to review the information provided, and to ask for inaccurate or deficient information to be corrected.<sup>322</sup> The data subject also has the right to withdraw his consent to the collection and use of the SPDI.<sup>323</sup>

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<sup>316</sup> *Id.*

<sup>317</sup> Ananth Padmanabhan, *supra* note 237.

<sup>318</sup> *Id.*

<sup>319</sup> *Id.*

<sup>320</sup> Stephen Mathias & Naqeeb Ahmed Kazia, *Data protection in India: overview*, THOMSON REUTERS, (December 1, 2015) [https://content.next.westlaw.com/1-505-9607?transitionType=Default&contextData=\(sc.Default\)&\\_\\_lrTS=20170519192810079&firstPage=true&bhcp=1](https://content.next.westlaw.com/1-505-9607?transitionType=Default&contextData=(sc.Default)&__lrTS=20170519192810079&firstPage=true&bhcp=1)

<sup>321</sup> *Id.*

<sup>322</sup> *Id.*

<sup>323</sup> *Id.*

India needs to legislate strong and effective data protection laws before civilian drones can regulate. Data protection law shall contain the prescribed details such as type of information collected, purpose for collection of information, disclosure policy, security practices and procedures followed, etc.

#### **E. Strong points of the India in protection of privacy**

The Constitution of India provides protection under Article 19 and Article 21. India gives more importance to the national security issues, which might arise using civilian use. According to the guidelines to operate drone Unique Identification Number (UIN) to track drones. India is potential user of civilian drones.

#### **F. Weak points of the U.K. in protection of privacy**

No steps have been taken up by the government to provide for an effective regulatory framework of drones, particularly for commercial purposes. Indian law does not determine what privacy is, but only the situations where privacy will be afforded legal protection.<sup>324</sup> India lack robust privacy laws. Broader protection against use by individual through both criminal and civil law. India is still struggling for enduring an effective and concrete legislation for data protection.<sup>325</sup>

#### **G. Comparison of U.S., U.K., and Indian Laws**

The purpose of this section is to analyze the civilian usage of drones from the U.S. and U.K. and identify “best-practices” to be applied in India. This section draws a comparison between

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<sup>324</sup> Geetika Rustagi, *Indian law only determines the situations where privacy will be afforded legal protection*, LIVE MINT, (last modified September 5, 2014) <http://www.livemint.com/Consumer/x32Rcm7I26gT1cRNMDPAMP/Indian-law-only-determines-the-situations-where-privacy-will.html> (Interview with Sajai Singh, J. Sagar Associate)

<sup>325</sup> Vaibhava Pandey, *supra* note 312.

the U.S., U.K., and India. Many countries are now struggling to adopt laws to regulate the use of civilian drones. As discussed above the U.S. finds itself lagging the rest of the world in widespread adoption, primarily due to what are currently stifling regulations.<sup>326</sup> In other countries around the world, regulatory bodies have wholeheartedly embraced the commercial use of drones.<sup>327</sup> From the above section about the U.S. and U.K., it can be concluded that every country has reasons to avoid or adopt drone laws.

Although India does not have any concrete laws vis- à-vis drones yet, there are various legal implications the existing laws may have on the operation of drones.<sup>328</sup> In the absence of a robust privacy law in India, drone-enabled solutions could wreak havoc on the notion of privacy, especially when deployed by journalists and law enforcers.<sup>329</sup> Also, national security is one of the biggest challenge for regulating drones in India. Therefore, legislators should also take into account different concerns, which may be presented due to the prospective regulations' interaction with the existing legal framework, as set out below, and work to incorporate them into the necessary legislations.<sup>330</sup>

The U.K. and India, in this study, have a strong and independent privacy or data protection law that can constitute a protective legal framework for its citizens. The U.K. has incorporated the European Convention on Human Rights into its national law, which provides for a limited right of respect towards an individual's privacy and family life.<sup>331</sup> The Constitution<sup>332</sup> of India, in Article

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<sup>326</sup> ZsoltVaszary, *supra* note 17.

<sup>327</sup> *Id.*

<sup>328</sup> *Unravelling the Future Game of Drones*, *supra* note79.

<sup>329</sup> Ananth Padmanabhan, *supra* note237.

<sup>330</sup> *Unravelling the Future Game of Drones*, *supra* note79.

<sup>331</sup> Clare Feikert-Ahalt, *supra* note186.

<sup>332</sup> Constitution of India, *supra* note 273.

21 grants the freedom of life and liberty.<sup>333</sup> Judicial interpretation, over the years, has recognized the right to privacy as a fundamental freedom under Article 21.<sup>334</sup> However, it is hard to say if such recognition can be applied generally to drone-related activities as well.<sup>335</sup>

Additionally, India struggles for enduring an effective and concrete legislation for data protection.<sup>336</sup> A new legislation dealing specifically with the protection of data and information present on the web is the dire need of the day.<sup>337</sup> However, while drafting the laws, the legislature has to be cautious of maintaining a balance between the interests of the common public and tightening its grip on the increasing rate of cyber-crimes.<sup>338</sup> On the other hand, the U.S. and U.K. has strong data protection laws to deal with the modern technology such as CCTV code in U.K.

#### **H. Solution for the privacy laws related to drone**

This section discusses the different possible solution for the drone regulations. Despite attempts to ban drones, experts on privacy law, constitutional law, aviation law and drone laws should strive to clarify the application of these to drones, because this technology is rapidly developing. This section presents different possible solutions for the privacy legal framework of drones. Privacy concerns of people were raised with other similar technology such as smart phones, cameras, traffic signal cameras, dash cams, and CCTV. When these technologies are also regulated under the present laws then drones can also be regulated under these laws.

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<sup>333</sup> Ridha Aditya Nugraha, Deepika Jeyakodi & Thitipon Mahem, *supra* note 310, at 149.

<sup>334</sup> *Id.*

<sup>335</sup> *Id.*

<sup>336</sup> Vaibhava Pandey, *supra* note 312.

<sup>337</sup> *Id.*

<sup>338</sup> *Id.*

1. ***Applying existing laws:*** Privacy issue related to the drones can be regulated under the present sets of laws such as constitutional laws, and tort laws. These laws can be applied on case by case matters. However, there are many experts arguing that present sets of laws are not sufficient.
2. ***Drone laws by the group of scholars:*** Scholars from the respective countries should get together and create a document for the laws governing the drones. For example, Surveillance Camera Commissioner for the CCTV operation in U.K. These laws can be divided into two categories: use of drones by government agencies and use of drones by individuals on private property. Then keeping the private and public property separate. The main source of law will be from the existing laws of constitutional law, property law, and tort law.
3. ***Drone laws by the regulating bodies:*** Drone regulating bodies such as FAA in the U.S., CAA in U.K., and DGCA in India should take responsibilities to draft new privacy laws for drones. These bodies have experience of dealing with the similar manned aircrafts.
4. ***Unique Identification Number:*** There should be a chip or a SIM like Unique Identification Number (UIN) like in India to track the drone for violating the law by the police. Just like regular police do it on ground. Having GPS records of drone path to track the movement of drone. For example, the authorities in Monaco, the principality hired Aveillant, a Cambridge-based tech company, to install radar systems to detect, track and jam unregulated drones.<sup>339</sup> A National Registry for drone would serve the purpose of identifying a drone with its user.<sup>340</sup> Joseph Lorenzo Hall, in his article 'License Plates' for

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<sup>339</sup> Kate Symons, *supra* note 207.

<sup>340</sup> Ridha Aditya Nugraha, Deepika Jeyakodi & Thitipon Mahem, *supra* note 310, at 150.

Drones' , advocates the use of radio-frequency drone identifier (RFID) which would allow members of the public to itemize the drones in a given airspace with relatively simple radio receivers.<sup>341</sup> Ideally, a specialized agency such as the DGCA or any department under it may maintain a drone registry.<sup>342</sup> Until the police have the means to identify drones remotely, and access to a central database of owners, it is hard to see how they will be able to catch the growing number of miscreants.<sup>343</sup> The European Union is certainly looking at these options, as well as the possibility of making built-in safety features mandatory.<sup>344</sup> Ironically, the onboard cameras most drones now come with, and users' propensity to share video footage online, are currently the best means to catch reckless operators.<sup>345</sup>

5. **Data retention:** Another important part of drone laws is the data retention section where existing laws of data protection could be enhanced for the drone technology as well as other similar technology. The use of drones presents a great threat to data protection and privacy.<sup>346</sup> Some people may be concerned about how data collected by conservation drones are used and to what ends.<sup>347</sup> It might be acceptable for data to be collected by a law enforcement agency to prevent illegal hunting, but does this still apply if those same data are then sold on to a commercial entity such as an advertiser?<sup>348</sup> Data may also be shared with wider networks such as state security agencies, which have been under attack

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<sup>341</sup> *Id.*, at 151.

<sup>342</sup> *Id.*, at 150.

<sup>343</sup> Matthew Wall, *supra* note 162.

<sup>344</sup> *Id.*

<sup>345</sup> *Id.*

<sup>346</sup> Mohd Owais Farooqui, *Drone Journalism and Regulatory Challenges in India*, OXFORD HUMAN RIGHTS HUB, (October 7, 2016) <http://ohrh.law.ox.ac.uk/drone-journalism-and-regulatory-challenges-in-india/>

<sup>347</sup> Chris Sandbrook, *The social implications of using drones for biodiversity conservation*, AMBIO, vol. 44, (November 2015) <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4623858/>

<sup>348</sup> *Id.*

from those concerned about civil liberties following recent revelations about their activities.<sup>349</sup> Finally, hackers might steal data from drones, which are considered particularly susceptible to this problem as they can be shot down, collected and dismantled by those wishing to get access to data.<sup>350</sup> Government should only retain data in criminal cases. Other data should be deleted. Also, there are laws in place for the protection of data in cases like data collected by the investigators. Data retentions section should include the purpose, collecting agency, and benefits of collected data.

## 5. Conclusion

Drones have many beneficial uses, including in search-and-rescue missions, scientific research, mapping, and more. However, deployed without proper regulation, drones equipped with facial recognition software, infrared technology, and speakers capable of monitoring personal conversations would cause unprecedented invasions of our privacy rights. Interconnected drones could enable mass tracking of vehicles and people in wide areas. Tiny drones could go completely unnoticed while peering into the window of a home or place of worship.<sup>351</sup>

A possible solution is to enact new legislation (either in the form of the Draft Bill on the Right to Privacy or another amendment to the Information Technology Act) to include drone surveillance.<sup>352</sup> However, this is cumbersome.<sup>353</sup> A more plausible solution is for the DGCA to come up with policies protecting privacy, such as prohibiting news agencies from retaining

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<sup>349</sup> *Id.*

<sup>350</sup> *Id.*

<sup>351</sup> *Domestic Drones, supra* note 8. ACLU,

<sup>352</sup> Mohd Owais Farooqui, *supra* note 346.

<sup>353</sup> *Id.*

pictures taken by drones unless required by law or for some investigation as a piece of evidence.<sup>354</sup> This chapter examined the drone laws and compare them with present Indian constitutional law, privacy law, property law and aviation law. This chapter also examined any legal constraints that different countries place on the adaptation and use of drones in civilian applications. Finally, this chapter identified appropriate laws and other institutions necessary for India to effectively employ drone technology in a variety of applications.

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<sup>354</sup> *Id.*

## **Chapter 5: Point Forward: Legitimate Concerns about Drones' Proliferation**

### **1. Introduction**

This project discusses world policy on drone strikes for counterterrorism purposes and the myths about current-generation drone's capabilities and implications. This project separates fact from fiction by examining drone effects in three different legal contexts— legality under LOAC, targeted killing for counterterrorism, and privacy laws with a comparative study between the U.S., UK, and India. This is a qualitative and descriptive research project. In addition, this research centers on comparative studies regarding drone laws and makes recommendations for creating an Indian legal regime, which may work for third-world countries. The research also analyzes and explains differences in drone laws across different countries. This project argues that drone technology advancement, and their pinpoint precision, greater stealth, and increase in human pilot safety make drones a significant technology. This chapter gives a project overview and identifies issues unanswered by this dissertation.

The next project will be a comprehensive assessment of the consequences of current-generation drone proliferation in disputed territories and vulnerabilities to cyber attack. There are three legitimate concerns with drone proliferation. First, the use of drones in disputed territories. Second, drone use by violent non-state actors. The third concern is that drone attacks are like cyber-attacks. The research will not just describe laws, but will also analyze and explain differences in drone laws across different countries. This research will make recommendations to create a legal regime that would work for many countries involved in disputed territories.

### **2. Overview of research**

This section provides the overview of this research project. This section reviews the central issue of each chapter and makes the policy and solution recommendation.

## A. Chapter 1

This chapter discusses drone evolution, definitions, historical background, and the predator drone's creation. This chapter lays the foundation for the features and functions of drones necessary for understanding drone legality. The second part of this chapter discusses three types of drones and different types of drone technologies and capabilities. Discussing technology is important because it enables drones to carry out their functions. These functions cause drone operator's various legal challenges. This chapter helps develop the drone legal analysis in following chapters. For example, drones performing surveillance presents unique legal threats to individual's safety and privacy.

## B. Chapter 2

This chapter demonstrates that current laws are capable of governing drone warfare. One body of literature justifies legal military drone use under international law and LOAC. Whereas, other scholars do not agree with military drone use under the international law and LOAC. The fundamental principles of LOAC, specialized weapons treaties, the Hague and Geneva conventions, customary law, and the UN Charter provide the legal backdrop to govern drone use.<sup>1</sup> It is necessary to ensure only launching drone attacks against legitimate military objectives in accordance with use of force laws.<sup>2</sup> Weapon choice is the specific legal issue of drone operations under *jus ad bellum* and the *jus in bello*.<sup>3</sup> Special Reporter Philip Alston noted that, "a missile fired from a drone is no different from any other commonly used weapon, including a gun fired by

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<sup>1</sup> Rayan J. Vogel, *Drone Warfare and the Law of Armed Conflict*, 39 DENV. J. INT'L L. & POL'Y, 137 (2010-2011).

<sup>2</sup> Laurie R. Blank, *After "Top Gun": How Drone strikes impact the law of war?* U. Pa. J. Int'l L. vol. 33:3, 716-17 (Feb. 14, 2012).

<sup>3</sup> Michael Schmitt, *Drone Attacks Under the Jus Ad Bellum and Jus In Bello: Clearing the 'Fog of Law'*, at 13 <http://ssrn.com/abstract=1801179>

a soldier or a helicopter or gunship that fires missiles. The critical legal question is the same for each weapon: whether its specific use complies with LOAC.”<sup>4</sup>

Drones provide legally permissible use of force in self-defense.<sup>5</sup> Drone attacks can emanate from foreign nations without governmental consent and can occur against state or non-state actors. This occurs without the non-state actor is imputing the attacks to the foreign state, without armed conflict between the states, and the foreign state is unwilling or unable to stop the attacks.<sup>6</sup> However, the legal status of drone operators remains a challenging legal question while the field continues to develop. This chapter argues that drone treatment should be as any other U.S. arsenal component. A drone can be a weapons platform or a single weapon system. In addition, this chapter argues that drones offer extensive enhanced opportunities for LOAC compliance and laws governing certain weapons use. Particularly, drones are well suited to execute self-defense in international affairs.

The first part of the chapter provides a general drone overview of drones and modern-day implications. The second section discusses drone *legality per se* as a weapon system in association with general LOAC principles. These principles include military necessity, humanity, distinction, and proportionality. Additionally, this chapter explores the application of just war theory, *jus as bellum*, and *jus in bello*. In the third section, this chapter demonstrates how effective drones could be in executing self-defense operations. A case study of U.S. drone strategy during the War on Terror illustrates self-defense operation. Generally, this chapter examines drone strikes legality under LOAC based upon the targets geographical location. Finally, this chapter concludes by

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<sup>4</sup> *Id.* Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions, has opined

<sup>5</sup> Jordan Paust, *Operationalizing use of drones against non-state terrorists under the international law of self-defense*, 8 Alb. Gov’t L. Rev. at 203 2015.

<sup>6</sup> *Id.*

exploring military commands responsibility for LOAC violations drone operations and the drone operator's legal status.

### C. Chapter 3

This chapter gives an overview of targeted killing justifications when carried out by drones as a means of warfare. The chapter focuses on targeted killing pertaining to drones employed by the U.S. in its War on Terror. Further, this chapter examines whether the use of drones for targeted killings comports with the IHL. This chapter refers to attacks against specific alleged terrorists, such as those the U.S. and Israel has engaged in, as "targeted killings," not "assassinations," or "extrajudicial executions."<sup>7</sup> This chapter examines Israel's legal and policy decisions to implement targeted killings as a right to active self-defense.<sup>8</sup> This chapter also examines targeted killing's effectiveness and legality under domestic and international law. The carrying out of targeted killings must be as an extraordinary measure employed only where capture or arrest is unfeasible. The justifications for targeted drone strikes falls are operational considerations, theories of self-defense, and moral concerns.

Targeted killing authentication should depend upon intelligence reliability. Drones play important role in collecting and gathering intelligence when ground intelligent is unavailable. According to Rachel Stohl, of the Stimson Center research institute, "These are precise weapons. The failure is in the intelligence about who it is that we are killing."<sup>9</sup> Additionally, drone precision causes less collateral damage. However, signature strike legal justifications remain vague. Some

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<sup>7</sup> W. Jason Fisher, *Targeted Killing, Norms and International Law*, 45 COLUM. J. TRANSNAT'L L. 714, (2006-2007)

<sup>8</sup> Amos Guiora, *Targeted Killing as Active self-Defense*, 36 CASE W. RES. J. INT'L L. 319 (2004)

<sup>9</sup> Scott Shane, *Drone Strikes Reveal Uncomfortable Truth: U.S. Is Often Unsure About Who Will Die*, THE NEW YORK TIMES, (April 23, 2015) <https://www.nytimes.com/2015/04/24/world/asia/drone-strikes-reveal-uncomfortable-truth-us-is-often-unsure-about-who-will-die.html>

scholar justify signature strikes legality because “in a traditional conflict, there is no requirement that you know every single person’s identity before you strike, so long as there are reasonable grounds for determining that the target is part of the enemy force.”<sup>10</sup>

This chapter justifies targeted killing under the principle of military necessity, self-defense theory, AUMF, and the UN Charter. A few countries raise moral issues with drone-targeted killing. The U.S. provides its justification. Finally, this chapter examines the controversial issue of targeted killing a U.S. citizen.

#### **D. Chapter 4**

This chapter is comparative of the U.S., UK, and India constitutional, privacy, property, and aviation laws. All three nations have drone-regulating agencies. In the U.S. the Federal Aviation Administration (FAA), in the UK the Civil Aviation Authority (CAA), and in India the Director General of Civil Aviation (DGCA) regulate drones. These agencies license drones but do not regulate privacy issues. This leaves a gap between drone use regulations and individual privacy protections. However, constitutional, tort, privacy, and data protection laws may provide privacy protection.<sup>11</sup> This chapter outlines these regulating agencies, analyzes government and civilian drone use in the U.S., U.K., and India, and identifies best practices for global application.

To date, most drone studies identify domestic laws affecting drone use absent a broader global perspective. The purpose of this work is to identify the most effective domestic drone laws from these three countries and to create a coherent global drone laws. This chapter examines

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<sup>10</sup> Cora Currier & Justin Elliot, *Drone Warfare “Signature Strikes,”* GLOBAL RESEARCH, (February 27, 2013) <http://www.globalresearch.ca/drone-warfare-signature-strikes/5324491>

<sup>11</sup> Clare Feikert-Ahalt, *Regulation of Drones: United Kingdom,* LIBRARY OF CONGRESS, (April 2016) <https://www.loc.gov/law/help/regulation-of-drones/united-kingdom.php>

applicable drone laws for surveillance and individual privacy rights. Further, this chapter provides appropriate drone privacy laws solutions.

Some scholars [Michael Berry] argue that there is no need for domestic drone laws because the current set of constitutional, trespass, and intrusion upon seclusion laws are sufficient drone regulation. Drones have many beneficial uses, including search-and-rescue missions, scientific research, mapping, and more. However, drones deployed without proper regulation, quipped with facial recognition software, infrared technology, and speakers capable of monitoring conversations cause unprecedented privacy right invasion. Interconnected drones could enable mass vehicle and individual tracking in wide areas. For example, tiny drones could go completely unnoticed while peering into a residential window or place of worship.<sup>12</sup>

A possible solution is enacting new legislation in the form of a draft bill on the right to privacy or amending the Information Technology Act to include drone surveillance.<sup>13</sup> However, a more plausible solution is for the DGCA to come up with policies protecting privacy, such as prohibiting news agencies from retaining pictures taken by drones unless required by law or for investigation evidence.<sup>14</sup> This chapter examines drone laws and compares them with present Indian constitutional law, privacy law, property law, and aviation law. This chapter also examines legal constraints different countries place on drone adaptation and use in civilian applications. Finally, this chapter identifies appropriate laws and institutions necessary for India to employ drone technology effectively in a variety of applications.

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<sup>12</sup> *Domestic drones*, ACLU, (accessed August 3, 2016) <https://www.aclu.org/issues/privacy-technology/surveillance-technologies/domestic-drones>

<sup>13</sup> Mohd Owais Farooqui, *Drone Journalism and Regulatory Challenges in India*, OXFORD HUMAN RIGHTS HUB, (October 7, 2016) <http://ohrh.law.ox.ac.uk/drone-journalism-and-regulatory-challenges-in-india/>

<sup>14</sup> *Id.*

## Comparative study

This project examines the U.S. and UK drone laws and compares them with Indian constitutional, privacy, property, and aviation laws. The research examines the current legal status of laws enforcement agency drone use. The research draws legal comparisons between countries to identify the most favorable domestic drone laws for India's application. This project examines legal constraints different countries place on drone adaptation and use in civilian applications. Finally, this research identifies appropriate laws and other institutions necessary for these countries to employ drone technology effectively in a variety of applications. Most drone studies identify domestic laws affecting drone use without a broader global perspective. This project identified the most effective drone laws from these three countries to create a coherent drone regime for India.

In ancient times, there was a tendency to consider other countries laws.<sup>15</sup> However, comparative law has become a modern character.<sup>16</sup> This project analyzes specific legal drone privacy issues and compares treatment in different legal systems. In the strict sense, comparative law is the theoretical study of legal systems by comparison with each other, and has traditions going back over a century.<sup>17</sup> In recent years, it has gained practical importance for two reasons.<sup>18</sup> First, the increasing globalization of world trade requires doing business in unfamiliar legal systems.<sup>19</sup> Additionally, publications and internet sources assemble legal materials from

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<sup>15</sup> Pan Mohamad Faiz, *Comparative Law*, (accessed on November 5, 2017)  
<https://panmohamadfaiz.com/2007/03/20/comparative-law-2/>

<sup>16</sup> *Id.*

<sup>17</sup> *Id.*

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*

several jurisdictions, without necessarily undertaking comparisons, but are tools for comparative lawyers.<sup>20</sup> The discussions are silent on the present and future legal issues pertaining to drone use in India. India uses drones for domestic and military purposes, which raise several privacy and security challenges.

Comparative law is the study of foreign law.<sup>21</sup> It is comparison of law, not really a field of substantive law.<sup>22</sup> Comparative law is not a body of rules and principles.<sup>23</sup> Primarily, it is a method, a way of looking at legal problems, legal institutions, and entire legal systems.<sup>24</sup> By the use of that method it becomes possible to make observations, and to gain insights, which would be denied to one who limits his study to the law of a single country.<sup>25</sup>

On one end of the spectrum is Alan Watson.<sup>26</sup> Watson acknowledges an important connection but does not believe the law closely intertwines with the society and culture from which it emerges. The law is much more the affair of lawyers and judges than of laypersons.<sup>27</sup> He argues that a law reformer looking for inspiration to solve a legal problem can borrow rules and institutions from other legal systems without concern for the legal, social, or cultural context of the rules or how they work in that context.<sup>28</sup> The legal rule is an idea that when taken out of context

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<sup>20</sup> *Id.*

<sup>21</sup> *Comparative Law and Legal Definition*, US LEGAL, (accessed on December 13, 2017) <https://definitions.uslegal.com/c/comparative/>

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> Author of *Comparative Law and Legal Change* (1978) and *Legal Transplants: An Approach to Comparative Law* (1993)

<sup>27</sup> Jaye Ellis, *General Principles and Comparative Law*, EUROPEAN JOURNAL OF INTERNATIONAL LAW, VOL. 22, ISSUE 4, 949-971 (November 1, 2011) <https://academic.oup.com/ejil/article/22/4/949/478203/General-Principles-and-Comparative-Law>

<sup>28</sup> *Id.*

can applied elsewhere.<sup>29</sup> He acknowledges that a transplanted rule will not be identical to the original system because a rule in one legal system will not be the same at two moments in time.<sup>30</sup> Cultures, including legal cultures, are in constant contact and communication with one another and will inevitably ‘borrow’ and learn from one another in various ways.<sup>31</sup>

The embeddedness of legal rules in a culture dooms attempts to reduce a rule to its essence: when legal cultures learn from one another, they do not take up essences but living cultural artefacts.<sup>32</sup> In order properly to understand and appreciate a rule, it is necessary to know a great deal – the more the better – about the culture from which the rule emerged and remains embedded in.<sup>33</sup> However, what are the preconditions for a successful ‘transplant’?<sup>34</sup> Watson, Glenn, and Graziadei provide similar answers, from different perspectives.<sup>35</sup> Like any process of cross culture learning or a culture adapting to changing conditions, its outcome unpredictable and uncontrollable.<sup>36</sup>

This research agrees with Weil, Verhoeven, and others. In commonality or representativeness, the quest for a universally shared body of legal rules or concepts is probably futile.<sup>37</sup> Nor is it necessarily desired.<sup>38</sup> The heterogeneity and diversity of legal systems around the world is a source of richness.<sup>39</sup> However, if general principles are to be viable law sources in a heterogeneous society then the source requires rethinking.<sup>40</sup> The world’s legal traditions could be

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<sup>29</sup> *Id.*

<sup>30</sup> *Id.*

<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

<sup>34</sup> *Id.*

<sup>35</sup> *Id.*

<sup>36</sup> *Id.*

<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

<sup>40</sup> *Id.*

resources international jurists can draw upon to solve problems and disputes, but in most cases, it is no more than a demonstration of the commonality or representativeness of a legal rule.<sup>41</sup>

### 3. Point forward to Drone Proliferation

The spread of armed drones has ignited considerable debate among scholars and policy makers about the consequences of armed and unarmed drone proliferation for international and regional security.<sup>42</sup> Drone use represents an important new tool for the use of military force in the 21st century.<sup>43</sup> Drone proliferation means countries facing off around the world are increasingly likely to deploy drones and in sometimes these drones are armed.<sup>44</sup> This project analyses drone proliferation consequences in the international security environment.<sup>45</sup> Drone proliferation carries significant potential consequences for counterterrorism operations and domestic control in authoritarian regimes.<sup>46</sup> Drones could enhance monitoring in disputed territories and potentially lead to greater stability.<sup>47</sup> This analysis has important implications for a range of policy issues, including managing regional disputes, regulating drone exports, and defending against homeland terrorist attacks.<sup>48</sup>

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<sup>41</sup> *Id.*

<sup>42</sup> Michael Horowitz, Sarah Kreps, & Matthew Fuhrmann, *The Consequences of Drone Proliferation: Separating Fact from Fiction*, FORTHCOMING AT INTERNATIONAL SECURITY, at 1, (January 25, 2016)

<sup>43</sup> *Drone Proliferation and the Use of Force: An Experimental Approach*, CENTER FOR A NEW AMERICAN SECURITY, at 15, (March 3, 2017) <http://drones.cnas.org/wp-content/uploads/2017/03/Drone-Proliferation-and-the-Use-of-Force-Proliferated-Drones.pdf>

<sup>44</sup> *Id.*

<sup>45</sup> Horowitz, Kreps, & Fuhrmann, *supra* note 42.

<sup>46</sup> *Id.*

<sup>47</sup> *Id.*

<sup>48</sup> *Id.*

However, the broader aspect for future drone use with the appearance of new technologies and public services brings more opportunities and makes individuals more vulnerable.<sup>49</sup> Therefore, society misses a chance to react to emerging threats in a timely fashion.<sup>50</sup> There are three legitimate concerns with drone use. First, the use of drones in disputed territories. Second, drone use by violent non-state actors. The third concern is that drone attacks are like cyber-attacks.

Drones are a significant technology due to the advancement of technology, their ability to perform tasks with pinpoint precision, greater stealth, and the increase in human pilot safety. This project views drones as important and transformative military technology. The current drone generation introduces unique capabilities into world conflicts. However, this project examines how the current drone are likely to produce dire consequences in the future. Drones could potentially lead to instability in disputed territories. Given their easy technical accessibilities, current generation drones are likely to have a large impact on interstate warfare. Drone proliferation carries potential significant threats from terrorist use. Drone perception is growing to include drones as a viable threat to information security, thus, making them vulnerable to physical cyber-attacks. Drones may lower the costs of using force to the point of making war too easy and therefore more likely.

Future project can answer the following:

- How could drone use in disputed borders lead to war?

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<sup>49</sup> Eugene Miasnikov, *Non-State Actors and Unmanned Aerial Vehicles*, CENTER FOR ARMS CONTROL, ENERGY & ENVIRONMENTAL STUDIES, at 11, (January 13, 2013) <https://www.armscontrol.ru/pubs/en/Miasnikov-UAV-130108.pdf>

<sup>50</sup> *Id.*

- How to treat civilian drones use in disputed territories, is it a criminal act? How to treat non-state actors using drones for terrorism?
- What are the consequences of drone proliferation for the international security environment?
- As more countries acquire drones, their widespread availability leads to greater military adventurism and conflicts.<sup>51</sup> Will countries be more willing to put a drone in harm's way?<sup>52</sup> If so, how will other nations respond?<sup>53</sup> Would they be more willing to shoot down a drone than a human-inhabited aircraft?<sup>54</sup> If they did, are those incidents likely to escalate?<sup>55</sup>

#### **A. Military Drone Use in Disputed Borders**

This section explores various militaries drone use and justification theories. This section analyses how drones use in disputed borders might lead to war. There is a growing body of law generally recognizing drone use in conflict areas is legal under international standards.

However, there is ambiguity over drone legality in disputed territories. Identification of law is especially important because of the lack of international rules governing drone treatment, including areas where sovereignty remains contested.<sup>56</sup> For example, China increasingly deploys drones in disputed areas over which it claims sovereignty.<sup>57</sup> Drones sightings occur in the East China Sea—where China claims territory also claimed by Japan and Taiwan—and the South China

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<sup>51</sup> *Drone Proliferation and the Use of Force: An Experimental Approach*, *supra* note 43.

<sup>52</sup> *Id.*

<sup>53</sup> *Id.*

<sup>54</sup> *Id.*

<sup>55</sup> *Id.*

<sup>56</sup> Charles Fain Lehman, *Report: China Increasing Drone Operations in Disputed Seas*, THE WASHINGTON FREE BEACON, (August 29, 2017) <http://freebeacon.com/national-security/report-china-operating-drones-disputed-seas/>

<sup>57</sup> *Id.*

Sea—where China contests sovereignty with a number of other countries, including Taiwan, Malaysia, and Vietnam.<sup>58</sup> Drone sightings in the disputed territories are common enough to require a guide for identification by the average seaman.<sup>59</sup> Tensions over the islands – called the Diaoyu by China and the Senkaku by Japan – arose in 2013.<sup>60</sup> Drones do not have the best record for safeguarding national sovereignty.<sup>61</sup> Their part in the Senkaku Islands dispute,<sup>62</sup> while so far relatively minor in comparison to role of civilian protesters and naval forces, adds a new dimension to this old conflict.<sup>63</sup> Two major drone-related developments could affect the East China Sea situation.

The second development is Japan’s aggressive military posture in the East China Sea.<sup>64</sup> On October 20, 2017, Japan released new rules of engagement for drones that include the proviso that it would shoot down any unauthorized drone entering Japanese airspace and ignoring warnings to leave.<sup>65</sup> These guidelines are more aggressive than manned aircraft guidelines, which stipulate that an intruder must pose a threat to Japanese nationals before qualifying as a target.<sup>66</sup> In response to the new rules, GengYansheng, the spokesperson for the Chinese Ministry of Defense, announced that if Japan shoots down a Chinese drone over the Senkaku Islands, it will be “an act of war” that would prompt severe retaliation.<sup>67</sup> For China, shooting down a drone seems as egregious as downing a manned jet while Japan appears more willing to take action against intrusive drones

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<sup>58</sup> *Id.*

<sup>59</sup> *Id.*

<sup>60</sup> Jonathan Kaiman & Justin McCurry, *Japan and China step up drone race as tension builds over disputed islands*, THE GUARDIAN, (January 9, 2013) <https://www.theguardian.com/world/2013/jan/08/china-japan-drone-race>

<sup>61</sup> Dan Getting, *An Act of War: Drones are Testing China-Japan Relations*, CENTER FOR THE STUDY OF THE DRONE AT BRAD COLLEGE, (November 8, 2013) <http://dronecenter.bard.edu/act-war-drones-testing-china-japan-relations/>

<sup>62</sup> Which is claimed by Japan, China and Taiwan

<sup>63</sup> Getting, *supra* note 61.

<sup>64</sup> *Id.*

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

than against manned aircraft.<sup>68</sup> In this case, the use of drone altered traditional rules of engagement, adding greater uncertainty and suspicion strong nationalistic sentiment.<sup>69</sup>

The concern is how to treat drone use in disputed territories. With an analytical approach, this work expands the body of research and examine how the U.S. justifies its use of drone strikes under LOAC, weapon laws, just war theory, and self-defense theory. However, using drones in disputed territories is different from conflict areas. This research will provide the applicable laws for drone usage in disputed territories. This project examines if it is possible to apply existing laws in the disputed territories or if there is need for new disputed territory drone laws.

### **Civilian Drones Use in Disputed Territories**

This section explores civilian drone use in disputed territories. Civilian drone use might accelerate conflicts and lead to war. In this context, drone use encompasses civilian hobbyist, commercial and domestic law enforcement use. Many countries are struggling to adopt laws regulating civilian drone use. For example, how to treat civilian drones use for domestic purpose and when entering other territories? Is it a criminal act? Is it a terrorist attack? Also, scenario of drone use becomes different in disputed territories by civilians.

The use of drones in hostilities against organized non-state armed groups is arguably governed by international human rights and domestic law.<sup>70</sup> With the reference to Article 2(1) and (2) Additional Protocol II, the Appeals chamber noted that IHL of NIAC is applicable to all persons affected by an armed conflict and deprived of their liberty for reasons related to an armed

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<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> Steve Barela, *Legitimacy and Drones: Investigating the Legality, MORALITY AND EFFICACY OF UCAVs*, at 80

conflict.<sup>71</sup> According to Tribunal, the relatively loose nature of this language suggests a broad geographical scope.<sup>72</sup> It thus argued that “the nexus required is only a relationship between the conflict and the deprivation of liberty, not that the deprivation occurred in the midst of battle.”<sup>73</sup>

The ICTY has established certain criteria based on which one can examine the existence of a nexus between alleged crimes and an armed conflict.<sup>74</sup> According to its jurisprudence, “the armed conflict need not have been causal to the commission of the crime, but the existence of an armed conflict must, at a minimum, have played a substantial part in the perpetrator’s ability to commit, his decision to commit it, the manner in which it was committed or the purpose for which it was committed.”<sup>75</sup> However, there is no legal protection for the individuals with hobbyist drones in the disputed territories.

## **B. Violent Non-State Actors Drone Use: A Legitimate Concern**

This section examines drone use by non-state actors in disputed areas. Advanced drones are capable of carrying sophisticated imaging equipment and significant payloads are readily available to the civilian market.<sup>76</sup> Drones present great risk because of their capabilities, widespread availability, and development opening up new avenues for hostile groups to exploit.<sup>77</sup> A range of terrorist, insurgent, criminal, corporate, and activist threat groups have demonstrated the ability to use civilian drones for attacks and intelligence gathering.<sup>78</sup> A report, commissioned

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<sup>71</sup> *Id.*, at 82.

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

<sup>74</sup> *Id.*

<sup>75</sup> *Id.*

<sup>76</sup> *Hostile Drones: The Hostile use of Drones by Non-State Actors Against British Targets*, REMOTE CONTROL PROJECT, at 1, (January 2016)

[http://www.oxfordresearchgroup.org.uk/sites/default/files/Hostile%20use%20of%20drones%20report\\_open%20briefing\\_16.pdf](http://www.oxfordresearchgroup.org.uk/sites/default/files/Hostile%20use%20of%20drones%20report_open%20briefing_16.pdf)

<sup>77</sup> *Id.*

<sup>78</sup> *Id.*

by Oxford Research Group, found approximately 200,000 civilian-use drones sell worldwide every month, legislation currently governing civilian drone use struggles to keep up with the speed of new drone development and placement in novel uses.<sup>79</sup>

Small drones could benefit militant groups where the drone with explosives attached becomes a precision weapon.<sup>80</sup> Suicide bombing is a tactic providing greater accuracy against civilian or hard military targets.<sup>81</sup> Similarly, drones provide precision allowing groups facing personnel shortages to use drones instead of suicide bombs.<sup>82</sup> Groups might accomplish useful levels of destruction without advanced drones.<sup>83</sup> In some instances, groups might accomplish useful destruction levels without advanced drones. For example, a hobbyist drone mounted with a small amount of explosive could to generate damage and terrorize the population, while having the advantage of being too small for air or ground defenses.<sup>84</sup> For example, a drone landed on the White House lawn.<sup>85</sup> Although it was benign, the ability to transgress fortified boundaries illustrates possible drones use for sinister purposes.<sup>86</sup>

Independent actors inspired by militant groups could use smaller drones.<sup>87</sup> For example, the individuals who carried out attacks in Sydney, Australia in December 2014, and the Boston Marathon in April 2013, could use hobbyist drones armed with explosives or simple firearms to

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<sup>79</sup> Remote Control Project Report: Hostile Drones, Oxford Research Group, January 11, 2016, [http://www.oxfordresearchgroup.org.uk/publications/briefing\\_papers\\_and\\_reports/remote\\_control\\_project\\_report\\_hostile\\_drones](http://www.oxfordresearchgroup.org.uk/publications/briefing_papers_and_reports/remote_control_project_report_hostile_drones)

<sup>80</sup> Horowitz, Kreps, & Fuhrmann, *supra* note 42, at 31.

<sup>81</sup> *Id.*

<sup>82</sup> *Id.*

<sup>83</sup> *Id.*

<sup>84</sup> *Id.*

<sup>85</sup> *Id.*

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

achieve the same result.<sup>88</sup>This is a real concern.<sup>89</sup> In 2014, the FBI arrested a suspect who allegedly planned to fly a drone armed with a bomb into a school.<sup>90</sup> Additionally, the FBI arrested Rezwan Ferdaus, a U.S. citizen, in September 2011.<sup>91</sup> Ferdaus planned to use small-scale versions of military jets, the F-4 Phantom and the F-86 Sabre with five pounds of plastic explosives on each plane.<sup>92</sup> His plan was to launch three planes from a park near the Pentagon and Capitol and use GPS to direct them toward the buildings.<sup>93</sup>

Dennis Gromley gave testimony possible terrorist drone use before the United States House of Representatives subcommittee in 2004. Eugene Miasnikov of the Center considered similar issues in a 2005 paper for Arms Control, Energy, and Environmental Studies at the Moscow Institute of Physics and Technology. The best defense against the hostile use of drones is to employ a hierarchy of countermeasures encompassing regulatory countermeasures, passive countermeasures, and active countermeasures.<sup>94</sup> Therefore, these issues require consideration and scholars should provide appropriate solutions.

### **Why drones may seem attractive to non-state actors?**

Drones have short flight time. Small drones launched from 25 km can reach its target less than within 15 minutes.<sup>95</sup> The existing air defenses are ineffective against low-flying drones.<sup>96</sup> The flexibility in choice of a drone launch site make it difficult to defend against drones.<sup>97</sup> Drones have

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<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> Miasnikov, *supra* note 49, at 10.

<sup>92</sup> *Id.*

<sup>93</sup> *Id.*

<sup>94</sup> *Hostile Drones: The Hostile use of Drones by Non-State Actors Against British Targets*, *supra* note 76, at 1.

<sup>95</sup> Miasnikov, *supra* note 49, at 20.

<sup>96</sup> *Id.*

<sup>97</sup> *Id.*, at 21.

high capability to “penetrate” into areas not accessible by land. It is almost impossible to prevent an attack after launching a drone.<sup>98</sup> Drones can carry out wide-scale attacks aimed at inflicting a maximum death rate on a population.<sup>99</sup> The relative simplicity of assembling drones and the covertness of preparation and carrying out an attack are appealing.<sup>100</sup> Additionally, drones are relatively cost effective in comparison to ballistic missiles and manned airplanes.<sup>101</sup> They can have a strong psychological effect in scaring people and pressuring politicians.<sup>102</sup>

### **C. Drone Attacks Are Similar to Cyber Attacks**

This section examines possible drone uses for physical cyber-attack. Cyber-attacks require a network of highly technically skilled people. However, with the availability of drone technology anyone can buy, assemble, and use a drone to carry out strike. The attention on the issue of cyberattacks focuses on the potential for the malicious use of electronic devices, computer systems, and networks.<sup>103</sup> However, there is a closely related and much less appreciated threat from physical attacks launched using cyber-physical systems.<sup>104</sup> The U.S. National Science Foundation defines cyber-physical systems as”

“the tight conjoining of and coordination between computational and physical resources.”<sup>105</sup>

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<sup>98</sup> *Id.*, at 22.

<sup>99</sup> *Id.*

<sup>100</sup> *Id.*

<sup>101</sup> *Id.*

<sup>102</sup> *Id.*

<sup>103</sup> John Villasenor, *Cyber-Physical Attack and Drone Strikes: The Next Homeland Security Threat*, BROOKINGS (July 5, 2011) <https://www.brookings.edu/research/cyber-physical-attacks-and-drone-strikes-the-next-homeland-security-threat/>

<sup>104</sup> *Id.*

<sup>105</sup> *Id.*

[1]While the research community has focused on the many beneficial uses of cyber-physical systems including robotic surgery, search and rescue, healthcare monitoring, and high-performance manufacturing,

[2] it is important to recognize that these platforms can be used for malicious purposes as well.<sup>106</sup> In that respect, drones constitute a significant potential security threat.<sup>107</sup>

Drones are essentially flying – and sometimes armed – computers.<sup>108</sup> The same advances in information technology that enable video-capable smartphones and wireless internet-based movie delivery also make it possible to build smaller, less expensive, and more versatile drones.<sup>109</sup> For example, the Wasp III micro drone used by the U.S. Air Force weighs under a pound, is less than a foot long, carries two on-board cameras and a GPS receiver, and can fly at an altitude of 1000 feet.<sup>110</sup> In February 2011, AeroVironment, a California based company, announced the successful demonstration of the prototype Nano Hummingbird, a video-capable drone developed under DARPA funding that weighs only two-thirds of an ounce with a 6.5 inch wingspan.<sup>111</sup>

The drone’s maneuverability, small size, and combination of onboard processing power, photographic equipment, and connectivity makes them the equivalent of flying computers. Drones are viable threats to information security.<sup>112</sup> Poorly secured or unsecured wireless networks are

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<sup>106</sup> *Id.*

<sup>107</sup> *Id.*

<sup>108</sup> *Id.*

<sup>109</sup> *Id.*

<sup>110</sup> *Id.*

<sup>111</sup> *Id.*

<sup>112</sup> *The Usage of Drones in Cyber Attacks-Both as Targets for Attack and as Potential Attack Vectors*, CYBER RISK(BLOG) (March 6, 2017) <http://www.cyberisk.biz/the-usage-of-drones-in-cyber-attacks/>

particularly vulnerable. Attack scenarios include where compromised or purpose-bought drones fly or discreetly land near a hot spot, and use it to stage Man in the Middle (MitM), data injection, and similar attacks over guest and short-range Wi-Fi, Bluetooth, and other wireless connections.<sup>113</sup> The success of such attacks increases because traditional security measures operate on the assumption that no one could get close enough to such short-range wireless connections to pose a serious threat.<sup>114</sup>

This project examines how existing law may be applied—and adapted and amended—to meet the distinctive challenge posed by drone cyber-attacks. It begins by clarifying what cyber-attacks are and how they already are regulated by existing bodies of law, including the law of war, international treaties, and domestic criminal law. The law of war, for example, provides a useful framework for only the very small number of cyber-attacks that amount to an armed attack or that take place in the context of an ongoing armed conflict.<sup>115</sup> This project concludes that a new, comprehensive legal framework at both the domestic and international levels is needed to more effectively address cyberattacks with the modern technologies such as drones.

The U.S. could strengthen its domestic law by giving domestic criminal laws addressing cyber-attacks extraterritorial effect and by adopting limited, internationally permissible countermeasures to combat cyber-attacks that do not rise to the level of armed attacks or that do not take place during an ongoing armed conflict.<sup>116</sup> Yet the challenge cannot be met by domestic reforms alone.<sup>117</sup> International cooperation will be essential to a truly effective legal response.<sup>118</sup>

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<sup>113</sup> *Id.*

<sup>114</sup> *Id.*

<sup>115</sup> Hathaway, Oona A. and Crootof, Rebecca, "*The Law of Cyber-Attack*" Faculty Scholarship Series. Paper no. 3852. at 817 (2012) [http://digitalcommons.law.yale.edu/fss\\_papers/3852](http://digitalcommons.law.yale.edu/fss_papers/3852)

<sup>116</sup> *Id.*

<sup>117</sup> *Id.*

<sup>118</sup> *Id.*

New international efforts to regulate cyber-attacks must begin with agreement on the problem—which means agreement on the definition of cyber-attack, cyber-crime, and cyber-warfare.<sup>119</sup> This would form the foundation for greater international cooperation on information sharing, evidence collection, and criminal prosecution of those involved in cyber-attacks—in short, for a new international law for drone cyber-attack.<sup>120</sup>

It will conclude as with the law of war, these existing bodies of law effectively address only a small part of the problem—leaving many harmful cyber-attacks unregulated and uncontrolled by either domestic or international law. These include (1) the law of countermeasures, which governs how states may respond to international law violations that do not justify uses of force in self-defense; (2) international agreements and other cooperative efforts to directly regulate cyber-attacks; (3) international agreements that regulate means or locations of cyber-attacks, including telecommunications, aviation, space, satellites, and the sea; and (4) U.S. criminal law regulating cyber-attacks.

#### **4. Conclusion**

The next project will be a comprehensive assessment of the consequences of current-generation drone proliferation in disputed territories and vulnerabilities to cyber attack. It will be a qualitative research project and a continuation of descriptive research. The research will not just describe laws, but will also analyze and explain differences in drone laws across different countries. This research will make recommendations to create a legal regime that would work for many countries involved in disputed territories.

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<sup>119</sup> *Id.*

<sup>120</sup> *Id.*

