

# Drones: Just When You Thought It Was Safe to Cancel Your Pirate Insurance

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Drones are becoming more and more ubiquitous. Drones are being used for recreational purposes, business/commercial purposes, and law-enforcement purposes.

The United States is experiencing a proliferation of mass-produced, inexpensive unmanned aircraft with capabilities that surpass anything previously available to civilians. The Federal Aviation Administration (FAA) has predicted that the number of hobbyist drones will reach 2.4 million by 2020, while the commercial fleet will grow from roughly 110,000 (the number at the end of 2017) to over 450,000 in 2022<sup>1</sup>. Recreational and commercial uses include drone racing as a spectator sport,<sup>2</sup> delivery of medical supplies<sup>3</sup> and organs for transplant<sup>4</sup>, and recently even delivery of cargo for profit.<sup>5</sup>

Of course, aside from their many harmless, productive, and useful purposes, it is inevitable that drones will be used to commit torts and crimes, too. Bad actors are a fact of life, and it behooves the insurance industry to anticipate losses that will occur as a result and create insurance products that mitigate against those risks.

## Drones in the Hands of Bad People

So, what are the sorts of trouble that we should expect to see when bad actors get their hands on drones? Because bad actors are less likely to seek proper licensure before using their drones, the FAA's<sup>6</sup> gradualism in integrating drones into the national airspace has not slowed them down. A good amount of future loss risks can be predicted by examining the improper uses of drones in the recent past. Some of the losses caused by these bad actors was entirely predictable, but sometimes they're not.

## Stealing People's Identities

Drones can be used to steal a person's confidential information and ultimately their identity. Hackers have developed a drone that can steal the contents of a smart-phone, including a person's location data and passwords for sites and applications like Amazon.<sup>7</sup> The on-board drone technology is known as Snoopy that searches for nearby devices with their Wi-Fi settings turned on.<sup>8</sup> Snoopy then links up with the devices by pretending to be a network that the device has connected with in the past.<sup>9</sup> Once connected, Snoopy can intercept everything the device sends and receives, including sites the device has connected with, credit card information entered and saved on different sites, location data, and usernames and passwords.<sup>10</sup> CNNMoney investigated this by flying a drone equipped with Snoopy for an hour in London.<sup>11</sup> In less than an hour of flight time, the drone was able to obtain network names and GPS coordinates for approximately 150 mobile devices.<sup>12</sup> With that information, a reporter with CNNMoney was able to identify the homes of several people who had walked underneath the drone.<sup>13</sup>

<sup>1</sup> Federal Aviation Administration, FAA Aerospace Forecast: Fiscal Years 2018-2038 39-49 (2018), available at [https://www.faa.gov/data\\_research/aviation/aerospace\\_forecasts/media/FY2018-38\\_FAA\\_Aerospace\\_Forecast.pdf](https://www.faa.gov/data_research/aviation/aerospace_forecasts/media/FY2018-38_FAA_Aerospace_Forecast.pdf)

<sup>2</sup> Peter Farquhar, Inside the underground drone racing league that's booming in Australia, Business Insider (June 16, 2015), <https://www.businessinsider.com.au/inside-the-underground-drone-racing-league-thats-booming-in-australia-2015-6>.

<sup>3</sup> Betsy Lillian, UPS, Matternet Conducting Medical Drone Deliveries Across N.C. Hospital System, Unmanned Aerial Online (March 27, 2019), <https://unmanned-aerial.com/ups-matternet-conducting-medical-drone-deliveries-across-n-c-hospital-system>

<sup>4</sup> Isabella Lee, Dialysis Patient Receives First Successful Drone Delivery of Kidney for Transplant, UAV Coach (May 2, 2019), available at <https://uavcoach.com/ummc-transplant-drone-delivery/>

<sup>5</sup> Eric Mandel, UPS' new 'drone airline' subsidiary flies forward with first big-name customers, BizJournals (Oct. 23, 2019), available at <https://www.bizjournals.com/atlanta/news/2019/10/23/ups-new-drone-airline-subsi-dary-flies-forward.html>

<sup>6</sup> Julia Crawford, 10 Crimes Committed Using A Drone, Listverse (July 26, 2018), available at <https://listverse.com/2018/07/26/10-crimes-committed-using-a-drone/>

<sup>7</sup> Erica Fink, This drone can steal what's on your phone, CNN Business (March 20, 2014), <https://money.cnn.com/2014/03/20/technology/security/drone-phone/>

<sup>8</sup> Id.

<sup>9</sup> Id.

<sup>10</sup> Id.

<sup>11</sup> Id.

<sup>12</sup> Id.

<sup>13</sup> Id.

## *Invasion of Privacy (Drone Voyeurism)*

Drones are also being used to spy on people. Drone voyeurism is such a real threat that more and more states, like Florida, Texas, and North Carolina, have started passing laws prohibiting it.<sup>14</sup> Intrusion upon seclusion is an intentional tort and is one of the forms of invasion of privacy. The Restatement (Second) of Torts explains the tort as follows: “One who intentionally intrudes, physically or otherwise, upon the solitude or seclusion of another or his private affairs or concerns, is subject to liability to the other for invasion of his privacy, if the intrusion would be highly offensive to a reasonable person.”<sup>15</sup> It should be emphasized that intrusion upon seclusion must always be intentional; there is no such thing as negligent intrusion upon seclusion.<sup>16</sup>

## *Drones in International Espionage*

The U.S. Department of Homeland Security recently issued a dire warning that Chinese-manufactured drones may be sending sensitive flight data to their manufacturers in China.<sup>17</sup> DHS’s Cybersecurity and Infrastructure Security Agency stated that the drones are a “potential risk to an organization’s information.” The drones “contain components that can compromise your data and share your information on a server accessed beyond the company itself.”<sup>18</sup>

The DHS did not identify any particular drone manufacturers; however, nearly 80 percent of the drones in the U.S. and Canada are manufactured by DJI, which is headquartered in Shenzhen, China.<sup>19</sup>

This is not the first time the U.S. government has warned about Chinese-manufactured drones. U.S. officials raised concerns in 2017, when the U.S. Army issued a ban on the use of DJI drones, stating in a memorandum that the company shared critical infrastructure and law enforcement data with the Chinese government. Also, the intelligence division of the Immigrations and Customs Enforcement agency assessed that DJI was “selectively targeting

government and privately owned entities within (the U.S. critical infrastructure and law enforcement sectors) to expand its ability to collect and exploit sensitive US data.”<sup>20</sup>

## *Drone Pirates*

We have all heard of “porch pirates” who steal packages left on people’s doorsteps by delivery companies such as Amazon, especially during the holidays.<sup>21</sup>

Now companies are bracing for “drone pirates.” Amazon, the retail-delivery giant, has raised the specter of drone hijacking.<sup>22</sup> Amazon has been the leading proponent of drone deliveries and has sought permission to move forward with a drone-delivery service.<sup>23</sup> Prime Air is a conceptual future delivery system from Amazon designed to deliver packages to customers in 30 minutes or less using drones.<sup>24</sup> The drones will fly under 400 feet and weigh less than 55 pounds, taking advantage of “sense and avoid” technology and a high degree of automation to safely operate beyond the line of sight to distances of 10 miles or more.<sup>25</sup>

According to one of Amazon’s patent filings, Amazon’s first defense in the prevention of jamming or hacking is a backup communications interface that can be employed if the primary system is compromised.<sup>26</sup> If a hacker jams both the primary and backup communication systems and commandeers the drone, a “mesh network” of multiple drones could help assess the situation by guiding the hacked drone to safety—or at least stop it and the payload

<sup>20</sup> Id.

<sup>21</sup> Kimberly Kolliner, It’s Porch Pirate Season: How to keep your packages safe as the holidays approach, Fox26News, <https://kmpn.com/news/local/its-porch-pirate-season-how-to-keep-your-packages-safe-as-the-holidays-approach>

<sup>22</sup> Kimberly Kolliner, It’s Porch Pirate Season: How to keep your packages safe as the holidays approach, Fox26News, <https://kmpn.com/news/local/its-porch-pirate-season-how-to-keep-your-packages-safe-as-the-holidays-approach>

<sup>23</sup> Brooks Barnes, Drone Exemptions for Hollywood Pave the Way for Widespread Use, N.Y. Times (Sept. 25, 2014), available at [http://www.nytimes.com/2014/09/26/business/media/drone-exemptions-for-hollywood-pave-the-way-for-widespread-use.html?\\_r=0](http://www.nytimes.com/2014/09/26/business/media/drone-exemptions-for-hollywood-pave-the-way-for-widespread-use.html?_r=0)

<sup>24</sup> Amazon Prime Air, <https://www.amazon.com/Amazon-Prime-Air/b?ie=UTF8&node=8037720011> (last visited Oct. 30, 2019).

<sup>25</sup> Id.

<sup>26</sup> Ananya Bhattacharya, Amazon has a plan to defend drones from hackers and bow-and-arrow-wielding troublemakers, Safe Flight (Dec. 29, 2016), <https://qz.com/873920/amazon-has-a-plan-to-defend-drones-from-hackers-and-bow-and-arrow-wielding-troublemakers/>

<sup>14</sup> See § 934.50, Fla. Stat. (2017); Tex. Gov’t Code Ann § 423.004 (2018); N.C. Gen. Stat. Ann. § 14-401.25 (West 2015).

<sup>15</sup> Restatement (Second) of Torts § 652B (1977).

<sup>16</sup> Purrelli v. State Farm Fire & Cas. Co., 698 So. 2d 618, 620 (Fla. 2d DCA 1997).

<sup>17</sup> David Shortell, DHS warns of “strong concerns” that Chinese-made drones are stealing data, CNNPolitics (May 20, 2019, 1:28 PM ET), <https://www.cnn.com/2019/05/20/politics/dhs-chinese-drone-warning/index.html>

<sup>18</sup> Id.

<sup>19</sup> Id.

from being stolen.<sup>27</sup> Amazon also intends to detect “red flights” such as a drone veering off its intended flight path by relaying data between multiple drones with a collection of sensors consisting of directional antennas and optical detectors.<sup>28</sup> If that occurs, a secondary drone can remedy a compromised drone by transmitting alerts to a server.<sup>29</sup> The compromised drone would then shift into a “fail-safe” mode.<sup>30</sup> In that mode, the compromised drone will stop trying to reach its target destination and hold its location until a rescue drone arrives, ground itself at a safe location, or return to its base.<sup>31</sup> The second drone or a third one can act as a rescue drone by approaching the compromised drone and relaying commands to direct the first drone to a safe landing, parking, docking, and so forth.<sup>32</sup>

An Oregon statute makes it a felony to interfere with or gain unauthorized control over a drone,<sup>33</sup> but most states do not yet have statutes that explicitly prohibit interference with someone else’s drone in flight. There is, however, a federal statute that criminalizes the damaging, disabling, destruction, or wrecking of any aircraft in the “special aircraft jurisdiction of the United States,” which likely applies to drones and is punishable by up to twenty years in prison.<sup>34</sup>

## Drones and Insurance

With the arrival of new risks of loss presented by the proliferation of drones, the insurance industry will inevitably have to meet the need for insurance products that mitigate against these risks. Drone insurance is not currently required for either recreational or commercial use in the United States.<sup>35</sup> In Canada, however, a person must carry

\$100,000 in liability coverage if that person is operating a drone for commercial purposes.<sup>36</sup>

Early indications are that the aircraft exclusion found in most CGL policies will work to bar claims involving drones. In *Philadelphia Indemnity Insurance Co. v. Hollycal Production, Inc.*,<sup>37</sup> a California district court found that Philadelphia Indemnity Insurance Company that issued a liability policy was not obligated to defend or indemnify a photography firm whose drone blinded a wedding guest in one eye, finding that the drone-related injury fell within the policy’s aircraft exclusion. The policy specifically excluded any “bodily injury” arising out of an aircraft operated by an insured.<sup>38</sup> The court observed that, even though the policy did not define the term “aircraft,” it is unambiguous and its ordinary meaning, as defined by Merriam-Webster’s Collegiate Dictionary, is “a vehicle (such as an airplane or balloon) for traveling through the air.”<sup>39</sup> The court also reviewed 49 U.S.C. §40102(a)(6) that defines “aircraft” as “any contrivance invented, used, or designed to navigate, or fly in, the air.”<sup>40</sup> The court referred to 14 C.F.R. §11 that defines “aircraft” as “a device that is used or intended to be used for flight in the air.”<sup>41</sup> The court noted that the ordinary definition of an “aircraft” does not require the carrying of passengers or cargo.<sup>42</sup> The court further noted that a drone’s being unmanned and operated remotely does not make it any less of an aircraft.<sup>43</sup> The court therefore found that Philadelphia Indemnity had no duty to defend or indemnify its insured for the claimant’s injuries arising out of the drone.<sup>44</sup>

Because drones pose few risks except when airborne and are limited by their battery lives as to how long they can remain airborne, on-demand insurance is expected to play a major role in the future of the insurance industry, according to research published by the International Underwriting Association (IUA).<sup>45</sup> On-demand or pay-as-you-go insurance will allow customers to automatically activate

<sup>27</sup> Id.

<sup>28</sup> Id.

<sup>29</sup> Id.

<sup>30</sup> Id.

<sup>31</sup> Id.

<sup>32</sup> Id.

<sup>33</sup> Or. Rev. Stat. § 837.995 (2017). Still, in at least one prosecution arising after passage of this statute, an Oregon man who shot down a drone with a pellet gun was charged with criminal mischief instead of being charged under the new statute. See Joseph Hoyt, Central Point man shoots \$1K drone, turns himself in, KOIN (Oct. 19, 2017 2:48 PM PDT), <https://www.koin.com/news/central-point-man-shoots-1000-drone-turns-himself-in/918016227>.

<sup>34</sup> 18 U.S.C. § 32(a)(1) (2019).

<sup>35</sup> Drone Insurance: A Step-by-Step Guide to Liability & Drone Hull Insurance, UAV Coach, <http://uavcoach.com/drone-insurance-guide/> (last visited Oct. 30, 2019).

<sup>36</sup> Id.

<sup>37</sup> *Philadelphia Indemnity Insurance Co., v. Hollycal Production, Inc.*, No. 5:18-cv-000768-PA-SP, 2018 WL 6520412 (C.D. Cal. Dec. 7, 2018)

<sup>38</sup> 2018 WL 6520412, at \*4.

<sup>39</sup> Id. (internal citation omitted).

<sup>40</sup> Id.

<sup>41</sup> Id.

<sup>42</sup> Id.

<sup>43</sup> Id.

<sup>44</sup> Id. at \*5.

<sup>45</sup> On-Demand Insurance to Play Major Role in Industry’s Future: IUA Research, Insurance Journal (Oct. 18, 2019), <https://www.insurancejournal.com/news/international/2019/10/18/545833.htm>.

policies when and where they need them. Flock, Europe's first pay-as-you-fly drone insurance product, which was launched last year, allows users to enter flight details and receive a quote based on real-time factors such as time of day, location and flight conditions.<sup>46</sup> On-demand insurance is starting to become available in the U.S. as well.<sup>47</sup>

## Conclusion

While drones represent a relatively new technology, the risks they present are a combination of new and not-so-new. Identity theft isn't a new risk, but the prospect of identity theft via a drone's unauthorized access of an iPhone is a risk that the first insurers to insure against identity theft could not have foreseen. The risk of cargo loss by piracy is as ancient as international shipping, but industries should expect its resurrection after a century or so of decline now that cargo will begin being transported by flying devices that cannot easily defend against an attempt to steal their cargo.

Drones are a disruptive technology, and the risks they bring will be disruptive to the insurance industry. Insuring against these new risks poses challenges without loss data upon which to assess risks, but the insurers who are best able to anticipate risks and offer products to mitigate against them will be rewarded for their efforts by domination of a new and growing field.

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<sup>46</sup> Id.

<sup>47</sup> Mark Hollmer, Verify, Now Thimble, Raises \$22M to Fuel On-Demand Insurance Growth, Insurance Journal (Oct. 16, 2019), available at <https://www.insurancejournal.com/news-national/2019/10/16/545574.htm>.