



DRONES: TAKING STOCK OF ITS APPLICATIONS AND ISSUES

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Amid the holiday rush in 23 December 2018, Gatwick Airport in the U.K. was shut down for 36 hours. With about a thousand flights either cancelled or delayed, roughly 140,000 passengers were left stranded.

The cause for the mayhem? Drones. People had seen them hovering around the airport, prompting authorities—fearing the worst—to scramble and try to contain the situation.

It was not the first time these flying contraptions have caused trouble for the airline industry. In October 2017, a drone actually hit an aircraft as it landed at a Canadian airport. While no one was hurt, the plane suffered minor damage as a result. There have also been near-misses between drones and passenger planes in other areas of the globe.

These recent reports have largely eclipsed another common issue associated with drones: their use in surveillance activities, especially the unwarranted kind. Equipped with powerful cameras (and possibly other recording devices), drones have found a place in the arsenal of military and law enforcement agencies around the world. The private sector is in on the act, too, as are terrorists, dissidents, and criminals.

With the drone phenomenon in full swing, states have begun issuing policies and regulations to keep their ubiquitous use in check. Most focus on safety and security issues not just in airports but also other public and heavily populated spaces. Some manufacturers are doing their part by incorporating features that limit the use of their own products. Meanwhile, enthusiasts are into developing codes of conduct as some form of self-regulation.

Altogether they point to one certainty: the era of drones has arrived, and everyone has been put on notice.

Introduction

The term, “drones”, as used today, often refers to remotely-controlled unmanned aerial vehicles (UAVs). A more formal definition would be that of the International Civil Aviation Organization (ICAO), which calls it “a set of configurable elements consisting of a remotely piloted aerial device, which is associated with a pilot station, which requires command and control links, and any other system that is required during flight operations”¹.

They come in many sizes and configurations. Some are meant to be weapons of war, while others actually qualify as toys that even kids can figure out and play with. Most are remotely-piloted, while a few sophisticated ones are programmed to operate autonomously.

In the U.S., a recent government estimate puts the number of commercial drones currently in operation at about 110,000.² This number is expected to increase to around 450,000 by the year, 2022.³

The sharp rise in their popularity is best explained by their numerous practical applications. Many industries have seamlessly integrated drone technology into their businesses and key

¹ ICAO, Unmanned Aircraft Systems (UAS), Order Number: CIR328, 2011, Glossary.

² Koenig, D., & Pisani, J. (2018, 8 December). Where are the drones? Amazon’s customers are still waiting. *Businessmirror*. businessmirror.com.ph/where-are-the-drones-amazons-customers-are-still-waiting/

³ *Ibid.*

operations. Here in the Philippines, the following list provides a glimpse of the range of functions drones have come to assume:

- *Surveillance Support in Military and Law Enforcement Operations.* One aspect most associated with drones is its camera. This trademark feature makes them extremely useful for surveillance and reconnaissance tasks. During the Marawi conflict in 2017, drones were supposedly used by both sides as each one sought to gain every bit of advantage over its enemy.⁴ That same time, the U.S. military reportedly deployed one their most advanced surveillance drones to provide support to their Filipino counterparts.⁵ Singapore also offered their own UAVs to help enhance the intelligence and reconnaissance capabilities of the Philippine armed forces.⁶ In March 2018, the U.S. government went further and actually donated six (6) surveillance drones as part of its foreign military assistance program.⁷ Reports say they would be deployed to conduct surveillance against militants and pirates, and to survey disaster-stricken areas.⁸ The \$13.7M grant was a follow-up to the transfer of two single-engine surveillance planes made the previous year.⁹ Months later, the Philippine Air Force purchased more UAVs—this time from Israel’s Elbit Systems. According to the air force, the drones will form part of its Medium Altitude Long Endurance Unmanned Aerial Systems (MALE UAS).¹⁰ The police have joined the fray, as well. Also in 2018, Philippine National Police (PNP) Chief Director General, Oscar Albayalde, announced that they are also deploying 700 drones to their regional units in support of law enforcement operations.¹¹ The PhP56M effort is expected to address a number of domestic security threats like terrorism and the country’s long-standing communist insurgency.¹²
- *Traffic Management Support.* The Metropolitan Manila Development Authority (MMDA) usually carries out its traffic management mandate by having its personnel work directly on the ground. It also utilizes hundreds of CCTV cameras it has installed all over the capital. Beginning 2018, though, the agency said they will start using drones to monitor traffic and flooding, especially during the rainy season. In June that year, the agency tested a few drone units during the first day of school.¹³
- *Disaster Management.* The Philippine government, working with the Food and Agriculture Organization of the United Nations, have also used drones to identify farmlands most at risk from natural disasters.¹⁴ In 2016, for instance, drones were

⁴ Luna, T. (2017, 17 July). DJI drones are getting shot down in the Battle of Marawi. *WETALKUAV*. www.wetalkuav.com/dji-drones-used-surveillance-battle-marawi/

⁵ Watts, J.M. (2017, 11 September). U.S. deploys drone to Philippines in fight against Islamic State-linked militants. *The Wall Street Journal*. www.wsj.com/articles/u-s-deploys-drone-to-philippines-in-fight-against-islamic-state-linked-militants-1505130688

⁶ Dancel, R. (2017, 19 July). Singapore offers drones, urban warfare training grounds, aid to help Philippines fight militants in Marawi. *The Straits Times*. www.straitstimes.com/asia/se-asia/singapore-offers-saf-assistance-to-philippines-in-fight-against-terrorism

⁷ Reuters (2018, 13 March). U.S. gives 6 surveillance drones to Philippines. *ABS-CBN News*. news.abs-cbn.com/news/03/13/18/us-gives-6-surveillance-drones-to-philippines

⁸ *Ibid.*

⁹ *Ibid.*

¹⁰ Tony, R. (2018, 18 October). PNP deploying 700 drones. *Taxial*. www.taxial.com/2018/10/18/pnp-deploying-700-drones/

¹¹ *Ibid.*

¹² Parameswaran, P. (2018, 16 October). What will 700 new drones mean for the Philippines?. *The Diplomat*. thediplomat.com/2018/10/what-will-700-new-drones-mean-for-the-philippines/

¹³ Cabalza, D. (2018, 5 June). MMDA turns to drones to manage traffic. *Inquirer.net*. newsinfo.inquirer.net/997530/mmda-turns-to-drones-to-manage-traffic

¹⁴ Food and Agriculture Organization of the United Nations (2016, 25 April) Drones help farmers in the Philippines prepare for climate disasters. *Food and Agriculture Organization of the United Nations*. www.fao.org/news/story/en/item/411596/icode

deployed to ascertain which areas were most affected by El Niño. There are efforts in the private sector operating along the same lines. One involves *Nokia* teaming up with local telco, *SMART Communications*, and the *Philippine Red Cross* (PRC) to develop a drone program that extends communications technology and technical assistance to emergency response teams operating in calamities and disaster zones.¹⁵ The phone manufacturer provided PRC with UAVs, a portable rescue application center, a private mobile broadband network, and relevant applications. Using SMART's network, the program will establish a secure communication line between the drones and rescue teams. The UAVs are equipped with cameras and microphones, and are able to carry critical items like first aid kits. In a similar initiative, Internet Society's Philippine chapter also embarked on a drone project that aims to assist in providing communications interconnectivity in areas in the wake of a disaster. The UAVs will be sent to disaster zones to serve as "wireless relays and data aggregators".¹⁶ In creating a local MESH network, they will help people to get in touch with loved ones, while aiding emergency workers communicate while at work.

- *Agriculture*. In the field of agriculture, particularly in aerial spraying (of fertilizers and pesticides), there is another government-sponsored drone project.¹⁷ Its main intention is to make agriculture management more efficient and to keep farmers away from the harmful effects of chemicals. In April 2018, a successful test was carried out in the province of Benguet, courtesy of Japanese firm, DMM Corporation. DMM is a leader in crop management techniques that use drone technology. Today, it is known for using UAVs to plant rice.
- *Land Survey and Infrastructure Inspection*. Meanwhile, to help advance the property rights of Filipinos, international nonprofit development organization, The Asia Foundation, through its Technology for Property Rights project, is working with both government and the private sector entities to promote the use of drones for land surveying which is essential for land titling.¹⁸ The idea is that with a more efficient and more affordable land-titling process, people will be able to expedite the resolution of boundary issues or conflicting land claims, and will be able to access credit much easier because of the availability of titled property as collateral.
- *News Reporting*. Drones have also been used for news reporting. They have proven useful in providing aerial video footages of disaster-stricken areas and even of the daily traffic situation in the capital.¹⁹ According to at least one broadcasting company, they are also looking at the possibility of tapping underwater drones for certain rescue operations.²⁰

¹⁵ Quintos, C. (2018, 3 December). Smart, Nokia show use of drones as disaster tool for PH Red Cross. *Newsbytes Philippines*. newsbytes.ph/2018/12/03/smart-nokia-show-use-of-drones-as-disaster-tool-for-ph-red-cross/

¹⁶ Sevilla, B.G. (2017, 13 April). A drone project to change humanitarian disaster response in Philippines. *Internet Society Philippines*. www.internetsociety.org/blog/2017/04/a-drone-project-to-change-humanitarian-disaster-response-in-philippines/

¹⁷ Felongco, G. (2018, 29 April). Philippines to start using drones for crop chemical spraying. *Gulf News*. gulfnews.com/world/asia/philippines/philippines-to-start-using-drones-for-crop-chemical-spraying-1.2213464

¹⁸ Wynn, L. & Faustino, J. (2018, 7 November). This land is our land: How drones can advance property rights in the Philippines. *The Asia Foundation*. asiafoundation.org/2018/11/07/this-land-is-our-land-how-drones-can-advance-property-rights-in-the-philippines/

¹⁹ Magdirila, P. (2014, 22 January). In the Philippines, drones are used for news reporting and rescue operations. *Tech In Asia*. www.techinasia.com/philippines-drones-news-reporting-rescue-operations

²⁰ *Ibid*.

- *Professional Filming and Photography.* Perhaps the most visible use of drones to date lies in the realm of film and photography. Both amateur and professional photographers and filmmakers wasted no time in adopting the technology as their newest gadget. The mobility and affordability of UAVs now allow scenic shots and footages previously possible only when taken by professional cameramen aboard actual planes and other similar modes of transport.

Taking Note of the Risks

Without making light of the benefits they provide, UAVs, in the course of their use, are also attended by a number of issues. And while it seems the Philippines has yet to shoulder its share of these problems, they are already a staple occurrence in other countries. There are three prominent concerns, namely:

- *Safety.* Many note that drones, in general, do not operate well with other aircraft. For one, they technically fly blind, as their operators are usually preoccupied with the images being broadcast by their onboard cameras. This leaves UAVs less likely to steer clear of low-lying obstructions and other aircraft. Conversely, passenger planes and other air transport also find it difficult to spot them in advance given their small size. In 2017, among the 1,596 drone incidents reported to Transport Canada, 131 were considered as aviation safety concerns.²¹ Calls for increased safety rules there eventually waned before being rekindled late last year when planes had near misses with UAVs hovering along their path in at least 2 separate incidents.²² Drones can also exacerbate existing problems, such as when they end up grounding fire-fighting planes and helicopters that are supposed to respond to emergencies. Coming into contact with these air transports could cause crashes, thereby endangering the lives of firefighters and other emergency response teams. Even crashing drones pose serious risks, too. In early 2018 in Arizona, U.S.A., a hobby drone caught fire as it crashed at the Coconino National Forest.²³ It ignited a grassy area, which then quickly turned into a wildfire that spread across 300 acres before firefighters successfully contained it.
- *Security.* Without a doubt, the Gatwick airport incident highlighted the extent of the security problem posed by drones today. When taken into context, the response of public authorities in that episode was not unreasonable. Drones, after all, did become famous as weapon delivery systems of the world's advanced military forces. Unfortunately, with their prevalent use today, drone-enabled attacks are no longer limited to those carried out by government elements. In many modern-day conflict areas, drones have been used by combatants to conduct armed sorties, or at least to do reconnaissance work prior to actual attacks. This was the case in Iraq, where Islamic State forces had a campaign of armed drone strikes against Iraqi troops,²⁴ and in nearby Israel, where Palestinian group, Hezbollah, also tried repeatedly to

²¹ The Canadian Press (2017, 15 October). Drone hit commercial plane approaching Quebec City. *The Star*. www.thestar.com/news/canada/2017/10/15/drone-collides-with-commercial-plane-in-quebec-city.html

²² CBC News (2018, 21 September). Airliner has 'near miss' with drone on approach to Vancouver. *CBC News*. www.cbc.ca/news/canada/british-columbia/jazz-airliner-has-near-miss-with-drone-on-approach-to-vancouver-1.4833882

²³ Geus, M. (2018, 10 March). Drone crashes in Arizona National Forest, starts a wildfire. *Ars Technica*. <https://arstechnica.com/tech-policy/2018/03/drone-crashes-in-arizona-national-forest-starts-a-wildfire/>.

²⁴ Warrick, J. (2017, 21 February). Use of weaponized drones by ISIS spurs terrorism fears. *The Washington Post*. www.washingtonpost.com/world/national-security/use-of-weaponized-drones-by-isis-spurs-terrorism-fears/2017/02/21/9d83d51e-f382-11e6-8d72-263470bf0401_story.html

carry out attacks using commercially available UAVs armed with explosives.²⁵ A similar narrative has been observed in conflicts currently ongoing around the world. Before long, experts say, drone-initiated violence will be coming for the cities, even during peace time.

- *Privacy.* With drones carrying powerful cameras, it should come as no surprise that privacy is a recurring concern for many when conversations are steered towards their use. There is a genuine cause for unease. With these flying objects around, traditional barriers like walls, fences, foliage, and even windows, no longer offer adequate protection for people who value their private moments. This explains why there is no shortage of news reports today narrating accounts of confused residents complaining about UAVs intruding into their properties. Take the case of one Australian woman who, in 2017, this problem became all too real when she noticed a quadcopter drone hovering above her one night while she was out in her pool.²⁶ Her experience is shared by many who were equally shocked to see drones venturing into their residences uninvited.²⁷ In Iceland, the police claim that they are constantly being asked by citizens to deal with unwelcome drones.²⁸ In all these cases, the aggrieved parties express the same sentiment of helplessness. Most are surprised to learn that there are no laws prohibiting the flying intruder from paying them another visit in the future. Even where such policies exist, it is also extremely difficult to determine who are operating these devices and from where. This makes holding parties to account often impossible.

Confronting the Challenge

With the number of concerns mounting, different proposals have been laid to address them. The most extreme naturally involves shooting down drones that pose a clear threat or danger to people's lives and property. Unfortunately, this relies heavily on their early detection, which is easier said than done considering how small they usually are and how low they fly such that they don't appear on radar. Their infrared signatures are also too faint to detect. Moreover, even if one were able to detect them on time, taking them down can be complicated especially in or around heavily populated areas. In the event of a miss, innocent bystanders could get hurt.

For others, the most logical defense is a technological one: jamming and/or hijacking a drone's controls in order to fly it to a safe area. This has its own obstacle, though. Drones use frequency bands that are also used by other devices like mobile phones and WiFi systems. Disrupting them also means wreaking havoc in the operation of those other devices. This has prompted research on more plausible alternatives. At the Weizmann Institute of Science in Israel, for instance, researchers have come up with a tool that warns

²⁵ Zwijnenburg, W. (2016, 29 April) Terrorist drone attacks are not a matter of "if" but "when". *Newsweek*. www.newsweek.com/drones-isis-terrorist-attacks-453867

²⁶ Gogarty, B. (2017, 26 April). Backyard skinny-dippers lack effective laws to keep peeping drones at bay. *ABC.Net*. www.abc.net.au/news/2017-04-26/peeping-drones-backyard-skinny-dippers-and-the-law/8472446

²⁷ Kavanaugh, K. (2018, 15 May). Peeping drones? How technology is outpacing privacy laws. *Boston 25 News*. www.boston25news.com/news/peeping-drones-how-technology-is-outpacing-privacy-laws/749844628; see also A video report on 2018, 3 July. Action News Jax Investigates: Woman says drone "peeped" on her while she dressed. *Action News Jax*. www.actionnewsjax.com/news/investigates/action-news-jax-investigates-woman-says-drone-peeped-on-her-while-she-dressed/781634249

²⁸ Fontaine, P. (2018, 19 January). Cops in Iceland regularly called to deal with spying drones. *The Reykjavik Grapevine*. grapevine.is/news/2018/01/19/cops-in-iceland-regularly-called-to-deal-with-spying-drones/

people when they are being recorded.²⁹ According to the group, all that one needs is a laptop and an object that flickers to facilitate the detection.

The third and most common approach has been in the area of policy or regulation. In the US, the Federal Aviation Administration (FAA) issued an interim rule in December 2015 requiring drone hobbyists to register their recreational aircraft with the agency. That policy was struck down by a federal court in 2017 via a ruling that held that the FAA cannot regulate model aircrafts, which includes (it argued) recreational drones. That same year, though, President Trump signed the “2018 National Defense Authorization Act” into law, which restored the FAA’s registration system. Today, it mandates that model aircraft owners are to: (1) provide their name, email address, and physical address; (2) pay a \$5 registration fee; and (3) display a unique drone ID number at all times. Failure to comply could result in civil and criminal penalties.

Other jurisdictions like Europe have not been as swift in their response. That said, the European Aviation Safety Agency (EASA) has proposed anti-hacking measures and geo-awareness technology (i.e., ability to detect if one has strayed into a prohibited or restricted area) for small drones in order to help prevent collisions. Other requirements suggested include: (1) Drones, their operators, and their launch sites should be remotely identifiable based on unique serial numbers and registration data; (2) Only small drones (900 grams or less) should be allowed to be flown over people; (3) Bigger and/or heavier drones must maintain a safe distance and should be equipped with technology that prevent hackers from gaining control of the device; and (4) Drone operators must register themselves instead of making separate filings for each of their devices. Meanwhile, drones weighing less than 250 grams are exempted from registration. Some states have also passed legislation to this effect. One of the newer policies is that of Pennsylvania, which took effect just this January 2019.³⁰

In the domestic front, the Civil Aviation Authority of the Philippines (CAAP) also came out with policies, heavily inspired by that of its American counterpart. In 2014, it issued Memorandum Circular Nos. 21 and 35, followed by Advisory Circular 11-001. It also provides for their classification, the issuance of operating licenses (for large and small UAVs), as well as limits to the areas where drones can operate. In 2015, issued its first UAV license and certification.³¹

In the legislature, it is surprising to find lawmakers on various levels taking on the issue despite drones managing to avoid a major controversy up until now. Early last year (2018), then-Senate President, Aquilino Pimentel, Jr., filed Senate Bill No. 1723, which aims to regulate their use in order to safeguard public safety.³² He claims regulation is necessary because drones can be used to violate people’s rights, such as the right to privacy. In the proposal, a drone is also referred to as a UAV or “any component of an unmanned aerial system (UAS) that has no pilot and is controlled by an operator on the ground”. Owners are supposed to register their device with the CAAP. Moreover, they have to comply with several conditions before they can operate their drones. For instance, the operator must be qualified for a radio operator’s certificate of proficiency. The drone itself must be properly insured.

²⁹ Schaft, P. (2018, 27 February). Drone concerns abate for privacy, rise for safety. *Robotics Business Review*. www.roboticsbusinessreview.com/unmanned/drone-concerns-abate-for-privacy-rise-for-safety/

³⁰ A video report on 2019, 2 January. Law targeting ‘peeping tom’ drones to take effect. *ABC 27 News*. www.abc27.com/news/top-video/law-targeting-peeping-tom-drones-to-take-effect_20190102231917/1683881119

³¹ Esperas, R. (2015, 9 July). CAAP issues first ‘drone’ license. *ABS-CBN News*. <http://www.abs-cbnnews.com/business/07/09/15/caap-issues-first-drone-license>.

³² Elemia, C. (2018, 27 March). Congress seeks government regulation of drones. *Rappler*. www.rappler.com/nation/199026-senate-bill-drones-regulation-caap

Meanwhile, CAAP is mandated to publish (and thereafter, regularly update) additional safety regulations. Unregistered drones will be confiscated, while their owners will be meted with a fine ranging from PhP50,000 to PhP100,000. Violations of CAAP's safety rules will also result in fines between PhP100,000 and PhP500,000. All penalties are without prejudice to any other civil or criminal liabilities of the offender.

At the House of Representatives, three (3) bills pushing for the regulation of drones have been filed during this Congress. Two of them, authored by the same person, refer to drones as remotely-piloted aircraft systems (RPAS) and cite the risks they pose to life and properties as justifying the need for regulation.³³ All three proposals remain pending with the Committee on Transportation as of this writing.

Even local government units appear to be in on the act. Recently, a member of a provincial Board of Benguet filed a proposed ordinance seeking to regulate drones.³⁴ The proponent considers the proposal a precautionary measure and requires owners to register their devices at their respective police stations. He notes that drones have the capability to "continuously monitor text-messaging of individuals and groups" and can be outfitted with a variety of weapons. He also warns that they can "watch individuals on a 24-hour basis, following their movements in an unprecedented way". His over-the-top descriptions notwithstanding, the legislator and his proposal at least indicate a level of awareness on the local level about this brewing issue. In the proposed ordinance, a number of conditions will be introduced, including restricting the operation of drones to adults, and a number of prohibitions on the manner of its use. Exemptions are possible in the name of "public interest", but the approval of either the governor or specific high-ranking PNP officials must be secured. Penalties include confiscation of the drone and its accessories, imprisonment of the operator for up to 1 year, or payment of a fine worth up to PhP5,000.

Thus far, these policy initiatives have had lukewarm response from most drone manufacturers and users. More than anything, this may be attributable to their poor or inconsistent implementation. This is not to say, though, that there has been a complete lack of feedback. In June 2018, for example, the U.S. *National Academies of Sciences, Engineering, and Medicine* released a statement describing the FAA as being "overly conservative" in crafting its safety standards for drone use.³⁵ They said the agency's risk-averse attitude is unnecessarily holding back many beneficial uses of drones.

Conclusion

For now, their inherent technological limitations and the looming surge in regulations do not appear to have dampened the popularity enjoyed by drones. Consider that in 2013, *Amazon* founder and CEO, Jeff Bezos, had boldly claimed that drones would already be making deliveries within five years. Despite that deadline having elapsed and observers agreeing that that prospect won't become reality any time soon, company executives say they remain committed to their vision, noting their numerous drone development centers across the globe.³⁶

³³ see: House Bills No. 4726 and 4827.

³⁴ Alimondo, L. (2018, 26 March). Benguet to regulate use of drones. *Sun Star Philippines*.
www.sunstar.com.ph/article/425620/

³⁵ Koenig, D. and Pisani, J. (2018, 8 December). Op. cit.

³⁶ Koenig, D. and Pisani, J. (2018, 8 December). Op. cit.

There's little reason to doubt their sincerity. When one considers the diverse applications of this technology, it is impossible to deny that there is a legitimate source for optimism. Even civil society—usually the vanguard at the precipice of innovations and technological developments—find it useful in their respective advocacies.³⁷

Nonetheless, the need for controls, whether technological or via policy, cannot be emphasized enough. After all, this seemingly bottomless well of possibilities is a boon not only for those with noble intentions, but for criminal elements as well, and those who wish to inflict harm upon others. It can be easy to forget that the early applications of drones actually lay in the arena of warfare. As these devices are further embedded in today's wired world, privacy intrusions and unauthorized disclosures of data will almost certainly increase both in numbers and impact. Culprits can come from anywhere—from governments, to companies, and even just well-resourced individuals.

Truly, when placed beside each other, drone technology is very much like the internet. Both began as fringe military projects intended for a limited and very specific purpose before civilians snapped them up and found more effective practical applications. Today, civilian uses have relegated to the sidelines the original objective behind these technologies. But as an unintended effect of their expanded use, the risks and dangers they pose have also been amplified. This has left regulations and other means of control desperately trying to catch-up before the issues become too big and too complicated to manage.

For the Philippines, the seemingly advanced reaction of legislators to drone-related problems is a welcome change in pace. The current proposals for regulation indicate a good start but are far from being laudable policies. Remarks from some proponents also reveal their poor grasp of the issues. This highlights the need for more consultations from their end, and more active engagements by civil society and other stakeholders in the policy-making process. For manufacturers, vendors, and patrons of these devices, they have their parts to play, too. Only a multi-faceted and inclusive approach will yield effective solutions and ensure that drones enjoy a steady, positive flight towards the future.

³⁷ Zaleski, G. (2018, 17 February). Groups target pigeon shoot, file complaint alleging drones shot down. *The Times and Democrat*. [thetandd.com/news/local/groups-target-pigeon-shoot-file-complaint-alleging-drones-shot-down/article_6e298813-0189-52e4-945a-8f0eff0a2d1f.html](https://www.thetandd.com/news/local/groups-target-pigeon-shoot-file-complaint-alleging-drones-shot-down/article_6e298813-0189-52e4-945a-8f0eff0a2d1f.html)