



Crowded Skies:

Opportunities and Challenges in an Era of Drones

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PREFACE

When I recently attended the Consumer Electronics Show in Las Vegas, two things struck me as game changers – 3-D printers and commercial drones. While the 3-D printers are still a novelty item for most, the commercial and private applications of drones was spellbinding. From drones as small as a quarter that flew overhead in swarms like flies, to those five feet or more across, the potential uses seemed limitless. The era of drones for personal entertainment was the least exciting part of the show. The myriad ways they’re being used to film, deliver, monitor and touch our lives in so many ways impressed me as transformative to the way we do business. It also struck me that drones pose serious legal issues as well, many of which have been overlooked or ignored at the operator’s peril.

From that moment at CES, my fellow authors and I decided to explore the way drones impact the day-to-day lives of corporations, organizations and individuals using them, and those who are being targeted.

This white paper – *Crowded Skies: Opportunities and Challenges in an Era of Drones* – explores the legal ramifications and risks of drones in a variety of disciplines, including:

- Advertising and Promotion
- Aviation – Regulatory
- Copyright
- Employment and Labor
- Export Controls
- Film and Television
- Insurance and Insurability
- Music
- Privacy
- Product Claims and Litigation

This is a truly collaborative work with contributions from 22 of my Reed Smith colleagues. It all came together with the help of Co-Editor Ross Kelley, who tirelessly worked on editing and compiling. Thanks to all of them.

As the legal environment surrounding drones evolves, this white paper will evolve as well to offer a comprehensive, up-to-date resource. Subsequent editions containing new and updated chapters will be released, so please be on the lookout for them.

We hope that *Crowded Skies: Opportunities and Challenges in an Era of Drones* provides readers with valuable guidance as they take to the skies, and we welcome any comments or questions.

Douglas J. Wood
Editor



TABLE OF CONTENTS

	Page
Advertising & Promotion	1
Aviation - Regulatory	5
Copyright (EU).....	11
Employment and Labor.....	13
Export Controls.....	14
Film and Television (UK)	19
Film & Television (U.S.).....	23
Insurance and Insurability.....	26
Music	33
Privacy (U.S.)	35
Privacy (UK)	43
Product Claims and Litigation	47
Biographies of Editors and Authors	51
Endnotes	58
Appendices.....	63



CHAPTER 1 -- Advertising and Promotion

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“Drone-vertising”

“Is this science fiction or is this real?” This was a question posed by Amazon after the debut of a promotional video touting Amazon’s upcoming drone delivery service, PrimeAir.¹ In the video, a tent-like drone sweeping through suburbia delivered a skateboarding tool to a father and daughter in less than 30 minutes. This promotional video, cleverly released around the holiday season, created buzz around PrimeAir and raised many questions about the legitimacy of the service. With the proliferation of drone usage in the military, film industry and for emergency response, entrepreneurs all around the world are starting to incorporate drones in advertising and marketing tactics to consumers. The use of drones in advertising – nicknamed, “drone-vertising” – is an industry in the making.

Current Advertising Practices Using Drones


Companies

The first company to exclusively specialize in drone-vertising was a Philadelphia-based company named DroneCast, started by 19-year-old founder and CEO, GauravJit Singh.² DroneCast’s services include using drones to publicize grand openings, running promotional activities, and deploying location-based drones to advertise to a specific client base via aerial advertising platforms, which, essentially, act as a flying billboard. The drone operators use an iPad app to plot a route on a Google Maps-like

program by selecting the altitude and speed. Ad space using DroneCast is likely to run a customer an average of \$3,000 per hour for a six-foot-long, two-foot-wide banner hovering about 25 feet off the ground.³ Though the company is still hashing out safety protocols and has not received regulatory approval, DroneCast’s advertising tactics may likely set the tone for future drone advertisers.

International Use

Developments in drone-vertising are also being made overseas, sometimes at a faster rate than in the United States, because of restrictive Federal Aviation Administration (FAA) standards on the commercial use of drones. For example, a Russian creative agency, Hungry Boys, created a new advertising technique for the popular Moscow noodle restaurant, Wokker, which incorporated the use of banners attached to drones.⁴ The drones advertising Wokker were programmed to fly around a number of high-rise buildings in Moscow’s financial district at lunchtime, attracting the attention of hundreds of hungry workers. After the campaign launched, Wokker deliveries in the targeted areas jumped 40 percent.⁵ Coca-Cola put its own twist on drone-vertising in an advertisement shot in Singapore. The soda brand teamed up with the nonprofit Singapore Kindness Movement to deliver care packages to migrant construction workers.⁶ The care packages included photos of Singapore citizens holding signs thanking the workers and, of course, included cans of Coca-



Cola. Ad agency Ogilvy & Mather Singapore distributed the online ad with the hashtag #CokeDrones.⁷

Promotions

Drones may also be used in promotions, sweepstakes and contests. For example, a Philadelphia-based dry cleaner is attempting to run a loyalty program by selecting a monthly customer who will have his/her clothes delivered via drone for free.⁸ Such promotional activities, designed to enhance business, exposure and customer loyalty, could potentially flourish with the use of drones. Not only could drones reach a wider audience of consumers in otherwise isolated locations, but they could also increase brand interaction with the opportunity to provide promotions to consumers through delivery services (as we have seen with Amazon PrimeAir), freebies, etc.

Location-Based Advertising

In recent years, there has been a sharp increase in the use of location-based marketing in the United States. In 2010, businesses spent \$42.8 million on location-based marketing.⁹ That figure was projected to rise to \$1.8 billion by 2015.¹⁰ Location-based advertising is targeting ads to consumers based on their physical location (similar to its counterpart, behavioral advertising, which targets ads to consumers based on their Internet usage). Though these forms of advertising are becoming increasingly popular, they also raise concerns with regard to the collection and use of consumer data, such as names, ages, addresses, health and other personal information. The potential use of drones as marketing tools that can track down and follow consumers to deliver advertising or monitor consumer movement in real-time may further heighten such concerns over consumer privacy.

Social Media and User-Generated Content

In addition to using drones to display advertising, various emerging companies are using drones to create advertising – especially in regard to capturing photo/video, user-generated content, and for social media. Production company Freelyfly Cinema uses drones affixed with high-quality cameras for aerial shots in ads for brands such as Honda, Dodge, FedEx and REI.¹¹ Similarly, a video content team called Corridor Digital used the popular DJI Phantom 2 quadcopter affixed with a GoPro camera to film aerial footage of Los Angeles in March 2014. The resulting clips were used to create a video called “Superman With a GoPro,” which went viral and racked up 12.6 million views in just two months.¹² Drones will allow advertising agencies to capture seemingly unprecedented shots for a number of advertising objectives – from producing commercials to capturing the crowd at an event. Drones may also allow advertisers to capture potentially dangerous footage in isolated areas because of the unmanned nature of its use and the size/weight of a typical drone.

Just as we have seen with the PrimeAir promotional video, footage captured on drones has the potential to go viral on the Internet and throughout social media. Not only are drones likely to expand possibilities for advertisers, but they may also be used in creating user-generated content (“UGC”) by any individual. Prices for a drone range anywhere from \$70 to \$4,000, depending on its quality and intended use. Consumers are buying them as Christmas presents, as toys, and as their very own remote-controlled aerial camcorders. The availability of drones to the mass public allows for any individual to create his or her own content through information gathering and capturing photo/video. Though this likely does not affect any current regulations for social media and UGC, the availability of drones creates the opportunity for any individual to gather and create unprecedented viral videos and/or photos at a potentially low price point.

Legal Framework

FAA Regulation and Authority

Although drone-vertising can be an extremely effectively tool for marketers, the legality of using drones for commercial purposes has come into question. In 2011, the FAA fined Raphael Pirker \$10,000 for flying a drone around the University of Virginia campus.¹³ Pirker had been hired to take videos and photographs of the campus for an advertising agency. The FAA alleged that Pirker had violated certain provisions of Federal Aviation Regulations (FARs), which prohibit the operation of “aircraft” in a careless or reckless manner so as to endanger the life or property of another.¹⁴ In March 2014, a National Transportation Safety Board (NTSB) administrative law judge vacated the fine, finding that Pirker’s Ritewing Zephyr remote-controlled plane was not the type of “aircraft” subject to the FARs, and that the FAA had not issued an enforceable FAR regulatory rule governing model aircraft operation¹⁵. The FAA appealed the decision, and on November 18, 2014 – in a unanimous decision – the NTSB reversed the findings of the administrative law judge.¹⁶ The NTSB concluded that (1) Pirker’s drone qualifies as an “aircraft” subject to FARs, and (2) Pirker’s drone is subject to the FARs prohibiting the operation of an unmanned aircraft system (UAS) in a careless and reckless manner.¹⁷ Although Pirker recently settled with the FAA¹⁸, the NTSB decision represents a giant win for the FAA and a significant setback for companies like DroneCast.

FAA Current Practice

Model Aircraft Operations

Just three months after the initial decision in favor of Pirker, the FAA published a notice to clarify its position on model aircraft use. Entitled “Interpretation of the Special Rule for Model Aircraft,” the notice set forth criteria that model airplane operators could follow in order to be exempt from FAA action.¹⁹ First and foremost,

the FAA clarified that model aircraft operations must be for hobby or recreational purposes only. The notice provided several examples of flights that would not be considered hobby or recreational: delivering packages to people for a fee, receiving money for demonstrating aerobatics with a model aircraft, and photographing a property or event and selling the photos to someone else. The FAA has also set forth safety guidelines for individuals flying model aircrafts²⁰:

- Fly below 400 feet and remain clear of surrounding obstacles
- Keep the aircraft within visual line of sight at all times
- Remain well clear of and do not interfere with manned aircraft operations
- Don't fly within five miles of an airport unless you contact the airport and control tower before flying
- Don't fly near people or stadiums
- Don't fly an aircraft that weighs more than 55 lbs.
- Don't be careless or reckless with your unmanned aircraft – you could be fined for endangering people or other aircraft

Civil Operations

Individuals who fly a UAS within the scope of the parameters set forth above would not need permission to operate their UAS; however, the FAA has stated that any flight outside the parameters – such as flying an aircraft heavier than 55 lbs. or flying a UAS for any non-hobby, non-recreational purpose – requires FAA authorization. There are currently two methods of gaining FAA authorization to fly UAS.²¹ The first is to apply for a section 333 Exemption from the FAA. This process may be used by UAS

operators to perform commercial operations in low-risk, controlled environments. The second is to apply for a Special Airworthiness Certificate from the FAA. This process may be used for civil aircraft to perform research and development, crew training, and market surveys.

FTC

In addition to FAA oversight, using drones may also implicate various FTC laws aimed at protecting consumers from misleading ads. For example, the FTC requires that an advertiser disclose to consumers any important information or conditions that may impact their decision to purchase a product or service. In doing so, advertisers must meet the “clear and conspicuous” standard, where disclosures should use clear and unambiguous language that visibly stands out in the advertising – consumers should be able to notice disclosures easily; they should not have to look for them. In September 2014, the FTC targeted more than 60 national advertisers in print and television to warn them to comply with proper disclosure standards in what the FTC called “Operation Full Disclosure.”²² Because of the inherent mobile nature of drones and the distance from which they may deliver advertising to consumers, proper disclosures may be hard to achieve. In the case of DroneCast’s banner ads flying at a distance of 25 feet, proper disclosures for promotions would need to be in very large font, and the drone would likely have to hover at a much slower speed in order for a consumer to be able to read any conditional language.

Rights of Privacy and Publicity

Finally, using drones may also bring privacy and publicity issues into play when video footage of unsuspecting individuals is used for commercial purposes, such as in advertising or in UGC. The right of privacy and publicity generally prohibits the use of a person’s name or likeness for commercial purposes without permission, and, in some states, this permission is required to be in

writing. How exactly does an advertiser (or a consumer participating in a UGC promotion) obtain permission for use of a person’s image captured by a drone when that person did not initially consent to having his or her image captured? This will be something advertisers and their producers will have to consider when developing their production plan.

The Bottom Line

As this chapter has pointed out, the use of drones in advertising is potentially a booming business and is likely here to stay. Despite the proliferation of drone-vertising methods and tactics, however, marketers must be mindful of the legal ramifications when dealing with such usage. The FAA Modernization Re-authorization and Reform Act of 2012 requires the FAA to develop a plan for integration of civil UAS into the National Airspace System (NAS).²³ Although the FAA did not meet its initial timeline for publishing a UAS Notice of Proposed Rulemaking (NPRM), on February 15, 2015, the FAA set forth an NPRM that would allow routine use of certain small UAS into the NAS.²⁴ In addition to the current guidelines and requirements set forth in this chapter, marketers should review the NPRM and stay on top of any updates with this proposed legislation.

CHAPTER 2 -- Aviation - Regulatory

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On October 17, 2011, Raphael Pirker (aka “Trappy”) flew a Ritewing Zephyr powered glider (aka “drone”) over the campus of the University of Virginia. The drone was equipped with a camera, and the resulting [video](#), for which Trappy allegedly was paid, is dramatic. The drone flies at low altitude through the populated UVA campus, zooming down streets, under a skywalk, through a tunnel, and even into a hedge. The drone also flew extremely high, and in the vicinity of an active heliport. Through much of the flight, there could not have been visual line-of-sight contact between the drone and the operator. The Federal Aviation Administration got wind of the flight, setting the stage for a midair collision between the then largely unregulated world of drone operations and the pervasively regulated world of aircraft. The FAA issued an order of assessment against Pirker, seeking a civil penalty of \$10,000. According to the FAA, Pirker was in violation of section 91.13 of the Federal Aviation Regulations prohibiting “careless or reckless” operation of aircraft.²⁵ Pirker moved to dismiss the FAA’s complaint, arguing essentially that the drone in question was a “model aircraft” and not an “aircraft,” and therefore the FAA had no authority to impose restrictions or seek a civil penalty in connection with his flight.

On March 6, 2014, Administrative Law Judge Patrick G. Geraghty agreed with Pirker, and vacated the assessment. The ALJ considered the prior regulatory framework and observed that drones such as the one flown by Pirker had always been treated as “model aircraft,” and not “aircraft,” and that there simply were no regulations limiting the operation of model aircraft

other than voluntary guidelines that would not support the imposition of a civil penalty.

The FAA appealed the ALJ decision to the National Transportation Safety Board (NTSB), which, this past November 18, 2014, reversed the ALJ. The NTSB found that Pirker’s drone, and all other drones, meet the definition of an “aircraft,” placing them within the FAA’s regulatory purview. The NTSB also found that the FAA’s application of 14 C.F.R. section 91.13(a) to drones is a reasonable interpretation of the regulation. Pirker settled his civil penalty action with the FAA, but the matter remains significant in that it establishes the FAA’s right to regulate the operation of drones, even if the agency had yet to establish such regulations. As will be discussed in depth below, the FAA has proposed regulations for the commercial operation of small unmanned aircraft systems (sUAS). Until those regulations go through the comment period and are adopted – a process that could take months and even years – the operation of commercial drones will remain a regulatory no-man’s land, necessitating waivers from compliance with Title 14 of the Code of Federal Regulations, a body of rules designed to regulate manned aircraft and not drones.

Model Aircraft

Historically, drones have been divided into two categories for regulatory purposes: “model aircraft,” and “everything else.” Over the years, the FAA has left modelers and recreational drone pilots alone for the most part. The FAA Modernization and Reform Act of 2012 (P.L. 112-95) (the Act) formalized the arrangement. Under

section 336 of the Act, a model aircraft is an unmanned aircraft that is (1) capable of sustained flight in the atmosphere; (2) flown within visual line of sight of the person operating the aircraft; and (3) flown for hobby or recreational purposes. The FAA may not promulgate regulations for model aircraft as long as certain requirements are met. Generally speaking, they must be limited to recreational use, they must be operated pursuant to a “community based set of safety guidelines,” the aircraft must weigh 55 pounds or less, they must not interfere with manned aircraft, and they may only be operated within five miles of an airport “if notice is provided to the airport operator or the tower.”²⁶

Section 333 Exemptions

Regulation of commercial unmanned aircraft systems (UAS) is a more complex matter. Because the current regulatory scheme is oriented toward the use of “manned” rather than unmanned aircraft, obtaining approval for non-recreational uses has required case-by-case review pursuant to section 333 of the Act to determine whether a particular proposed UAS operation is safe. The review, referred to as the Section 333 Exemption process, requires that those entities that seek to fly UASs for commercial reasons, demonstrates to the FAA that their operations will either meet applicable regulations, or provide an equivalent level of safety (ELOS) for any certification regulations they cannot meet.

For example, 14 C.F.R. section 91.119(b) sets forth minimum safe altitudes for operation of aircraft, and prohibits aircraft in congested areas from flying less than 1,000 feet above, or 2,000 feet laterally from, the highest obstacle.²⁷ Many operators seek to use sUAS to inspect wind turbines, flare stacks and similar structures, which of necessity involves flying much closer than allowed by the regulation. To do so, the operator must demonstrate that its proposed operations provide a level of safety (with regard

to people, structures and other aircraft) equal to the regulatory requirement.

To demonstrate an ELOS, the FAA usually places limits on altitude, requiring stand-off distance from clouds, permitting daytime operations only, and requiring that the UAS be operated within visual line of sight (VLOS) and yield right of way to all manned operations. The exemption provides that the operator will request a notice to airmen (NOTAM) prior to operations to alert other users of the national airspace system (NAS). In addition, the FAA currently requires all operations to be conducted by a licensed private pilot with a current medical certificate. The FAA also requires that the pilot have a certain amount of experience flying UASs before conducting commercial operations, as well as three take-offs and landings within 90 days for currency purposes. During training flights, the pilot must comply with the minimum safe altitudes and distances described in 14 C.F.R. section 91.119.

The FAA also is requiring operators who have received an exemption to coordinate with local air traffic control (ATC) facilities to obtain a Certificate of Waiver or Authorization (COA) for each specific operation. The COA will require the operator to request a NOTAM, which is the mechanism for alerting other users of the NAS to the UAS activities being conducted. More information regarding the exemption process is located [here](#). A list of companies that have been granted exemptions, along with a link to the grant, can be found [here](#). Exemptions granted to date involve aerial photography of real estate, closed set filming, precision agricultural surveys, bridge inspections and flare stack²⁸ inspections.

The Proposed Part 107

Recognizing that the current regulatory framework is unacceptable, and having received a mandate under the Act to create regulations allowing for the safe integration of unmanned aircraft into the NAS, the FAA unveiled a

proposal for rules that would regulate routine civil operation of small UAS (sUAS), and to provide safety rules for those operations²⁹. The proposed rule would be incorporated into Title 14 of the Code of Federal Regulations as new Part 107, limited to UASs below 55 pounds. The new rules would not apply to UASs above 55 pounds, thereby leaving potential operators such as Amazon in the section 333 limbo for the foreseeable future. With respect to sUAS operators, however, the new rules addressed – in a rational manner – the key regulatory issues of collision risk, ground personnel safety, operator certification and responsibilities, and aircraft requirements.

See and Avoid

Aircraft operating in the NAS currently are required to visually avoid other aircraft unless they are in instrument conditions and on an instrument flight plan. Collision avoidance systems and traffic advisory systems have become common in commercial and some general aviation aircraft, and the availability of transponders permits ATC to observe the location and altitude of most aircraft, and to provide traffic advisories to aircraft communicating with ATC. Because they are small and are not equipped with transponders, drones are effectively invisible to ATC radar, and to pilots of other aircraft, manned and unmanned. Accordingly, the only effective way to avoid a collision between an sUAS and an aircraft is to maintain vertical and horizontal separation. The FAA's proposed section 107 attempts to achieve this by segregating aircraft and drones to the extent possible, and by imposing on sUAS operators line-of-sight rules to mitigate collision hazards.

Small UAS operation will be limited to an altitude below 500 feet above the ground level (AGL). The altitude is significant because, except when taking off or landing – or over water or sparsely populated areas – aircraft are prohibited from flying below 500 feet AGL. Drones also will be

prohibited from flying in class A, B, C, D, and E airspace without ATC permission. While these airspace designations are complex, the practical effect of the limitations is to prevent operation within five nautical miles of an airport or above 18,000 feet without permission. It is unclear at this time how the permission is to be obtained, how long it will take, and what limitations will be imposed upon the approvals.

The proposed regulations require constant VLOS between the operator and the sUAS. This is one of the most significant operational limitations on the commercial use of sUAS and was imposed because the FAA concluded that, given the current state of technology, it would not be possible to sufficiently mitigate the risk of collisions for sUAS outside the visual line of sight of the operator. In keeping with this requirement, sUAS operations are limited to daytime operation only,³⁰ and flight visibility must be no less than three statute miles. Small unmanned aircraft may not fly closer than 500 feet below a cloud or 2,000 feet horizontally.³¹

Visual line of sight means that the drone operator must be able to see the sUAS at all times without any vision aid other than corrective lenses. Binoculars and, more importantly, onboard cameras, are not permitted to substitute for actual visual contact. The FAA has not prohibited the use of onboard cameras, first-person view, or even binoculars, as long as at least one person involved in the operation has retained unenhanced visual line of sight with the sUAS.

The proposed rules permit the use of a visual observer (VO), but the intent is that the observer will serve as an extra set of eyes to enhance separation, and not as a means to extend the range of the operation.³² If a tree or structure separates the drone and the operator, then VLOS has been lost, even if a VO can still see the drone. In addition, the responsibility of the operator is to ensure that the VO is able to see the sUAS as well. Finally, the operator and the VO must maintain "effective communication" with

each other at all times.³³ Effective communication is not defined, but the FAA explains in the NPRM that the operator and visual observer must work out a method of communication prior to the operation that allows them to understand each other during the operation. According to the FAA, the proposed communication requirement would permit the use of communication-assisting devices, such as radios, to facilitate communications. The visual observer is not permitted to manipulate the controls of the sUAS, he is not considered an “airman,” and the VO is not required to obtain an airman certificate.

The risk of collision with other aircraft is intended to be reduced by limiting the speed of sUAS to 87 knots.³⁴ Whether this speed limitation will enable pilots of manned aircraft to avoid collisions is questionable, particularly in light of the small profile of the sUAS. In light of this, the proposed rules will require the sUAS operator to yield the right of way to other aircraft.³⁵ If a manned aircraft comes into proximity with an sUAS, the pilot will not likely see the sUAS in sufficient time to take evasive action. Under the proposed rule, therefore, the sUAS may not pass over, under or ahead of the other aircraft unless the other aircraft is well clear.

Ground Personnel Safety

In addition to concerns over collisions with other aircraft, the proposed Part 107 addresses concerns for people on the ground. With any aircraft, there is a risk that a loss of propulsion could result in the aircraft descending, controlled or otherwise, to the ground. In addition, with sUAS, there is a possibility that the control link between the aircraft and the operator may be interrupted for any number of reasons. The proposed rule requires that, prior to undertaking a flight, the operator of an sUAS familiarize himself with conditions and potential risks.³⁶ The operator must assess the operating environment, considering (a) risks to persons and property in the immediate vicinity both on the surface and in the air; (b) weather; (c) airspace restrictions; and

(d) the location of persons and property and other ground hazards.³⁷ The sUAS operator must conduct a safety briefing with all persons involved in the operation,³⁸ and he must ensure that the links between the ground station (remote control) and the sUAS are operating,³⁹ and ensure that the sUAS has sufficient power for the flight.⁴⁰

In addition to preflight precautions, the proposed regulations seek to protect ground personnel by providing that no person may operate an sUAS over a human being who is not participating in its operation, unless he or she is located under a covered structure that can provide protection from a falling sUAS.⁴¹ This requirement for a sterile environment is significant limitation on the operation of small unmanned aircraft, but responds to what the FAA views as a significant risk associated with the loss of positive control.

Operator Certification

Prior to the release of the proposed rule, there was concern in the sUAS community that the FAA might require drone operators to hold a private pilot certificate. The concern arose out of experience with the Section 333 Exemption process in which the FAA required just that. While the proposed rule does not require a private pilot certificate, the proposed rule does require an sUAS operator to obtain an unmanned aircraft airman certificate with a small UAS rating. The unmanned aircraft airman certificate is a new FAA certificate created to meet the statutory requirement that aircraft be operated only by an “airman.” Like manned aircraft pilots, sUAS operators will be directly responsible for, and will be the final authority as to the operation of the aircraft.⁴² The operator is also responsible for ensuring that the sUAS will pose no undue hazard to other aircraft, people or property in the event of a loss of control of the aircraft for any reason.⁴³

The proposed rule would require applicants for an unmanned aircraft operator certificate with an

sUAS rating to be at least 17 years of age. An operator would also need to demonstrate English language proficiency and pass an initial aeronautical knowledge test, as well as a recurrent knowledge test every 24 months.⁴⁴ The knowledge test will cover the applicable regulations, knowledge of airspace classification, operating requirements, obstacle clearance requirements, and flight restrictions affecting sUAS operation, weather, and a variety of other topics bearing on sUAS operation.⁴⁵

Operators of sUAS will not be required to obtain an FAA medical certificate. Instead, they are permitted to “self-certify,” which would require one to abstain from operating an sUAS if the operator is aware of any physical condition that could interfere with the safe operation of the aircraft. Small UAS operators are also required to comply with the alcohol and drug use prohibitions contained in 14 C.F.R. section 91.17.

Airworthiness Certification


The proposed rule, to the relief of the sUAS community, will not require airworthiness certification of sUAS. The FAA recognized that the certification requirements contained in Parts 23 and 25 were designed for manned aircraft. The process is complex, expensive and would take three to five years for an sUAV to obtain type certification. With some candor, the FAA recognized that the development of unmanned aircraft was taking place at such a pace that, by the time a design was certified, it would be obsolete. The FAA considered this unnecessary and counterproductive. Similarly, the FAA elected not to require formal aircraft inspections similar to those imposed on manned aircraft. Instead, the proposed rule requires that, prior to every flight, the operator inspect the sUAS to ensure that it is in a condition for safe operation. In addition, the operator would be required to terminate the flight when he knows or has reason to know that continuing the flight would pose a hazard to other aircraft, people or property.⁴⁶

As with manned aircraft, the FAA has included in Part 107 a regulatory catch requiring that an sUAS not be operated in a careless or reckless manner so as to endanger the life or property of another.⁴⁷ This section mirrors 14 C.F.R. section 91.13 applicable to manned aircraft, and pilots who have been the subject of FAA enforcement actions are aware that this catch-all provision accompanies nearly all FAA allegations of regulatory violation. Any failure to comply with the Part 107 regulatory scheme likely will be accompanied by a section 107.23(a) violation, which usually serves to increase the penalty. A “careless and reckless” provision also fills any gaps that may exist in the regulations.

The FAA’s proposed Part 107 is a tentative first step toward the integration of unmanned aircraft – small or otherwise – into the national airspace system. It may be a year or more before we see a final rule. It may be many more years before we see a rule that encompasses the use of large UAS. The FAA has been feeling, and will continue to feel, ever-increasing pressure to keep regulatory pace with advances in UAS technology. The FAA, as currently constituted, is unable to do this, and it will be interesting to see how the Agency will be changed by the arrival and evolution of commercial drones.

The Bottom Line

The Pirker decision by the NTSB propelled commercial drones into the spotlight and under the regulatory watch of the FAA. Currently, entities seeking to operate sUAS for commercial reasons will require a case-by-case review and exemption pursuant to section 333. In the meantime, the FAA has proposed Part 107, a set of rules providing guidance and safety standards only for the operation of sUAS (aircraft below 55 pounds) that specifically addresses collision risk, ground personnel safety, operator certification and responsibilities, and aircraft requirements.



When Part 107 is adopted, commercial users will be able to operate sUAS pursuant to these regulations without a section 333 exemption. At present, the FAA will not permit the recreational or commercial operation of UAS above 55 pounds. While certain commercial operators (like Amazon) have received experimental airworthiness certificates for large UAS, they may only be used for experimental and testing purposes. Those wishing to operate sUAS for commercial purposes should apply for the section 333 exemption – in which operators will need to demonstrate to the FAA that they will either meet applicable regulations, or provide equivalent levels of safety – as well as consider related legal issues that may impact their activities.

-- CHAPTER 3 --

Copyright (EU)

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The use by film and television programme makers and by photographers of drone-mounted cameras has rapidly become commonplace. Aerial pictures that previously could only be obtained by using helicopters or light aircraft can now be shot at a fraction of earlier costs. The pictures taken, whether still or moving, can have high news value and high economic value too. As the costs of drone-technology reduce, the taking of aerial pictures of high personal value but little or no economic value comes within the reach of ordinary citizens.

But is there copyright in such still or moving pictures and, if so, who owns it?

In the case of still pictures, copyright will subsist if the photograph is the intellectual creation of the photographer. So if the photograph is taken when someone can see, through a remote viewfinder, what picture will be taken if they press the right button, there will almost certainly be a copyright in the photograph that results from a decision to take it. Conversely, if the camera simply takes a random photograph of an area without any element of choice on the part of a person as to such elements as the focus and framing, it's unlikely that the threshold requirement of intellectual creation will be met.


As to who will be the first owner of the copyright, the UK rule is that it will be the photographer, unless the photograph was taken in the course of the photographer's duties as an employee. In the latter case, the employer will be the first owner.

The position is rather different if the camera takes moving pictures. These are defined in UK copyright law as "films".

As to whether copyright in the film will subsist, a notable feature of UK copyright law is that the film does not have to pass the test of being the intellectual creation of the author. Even a film taken randomly by a drone-mounted camera, without intervention by anyone who can see what pictures the camera is recording, will qualify as a copyright work.

The question as to who is the first copyright owner of such a film is rather more difficult. Under UK copyright law, a film has two initial owners, the producer and the principal director. If either of them has made the film as employees under a contract of employment, then again their employer will own their share of the copyright. But the more difficult question is whether the film actually has a principal director. There's no statutory definition of such a person, but case law indicates that it is the person who has creative control, in the sense of at least deciding what to film, how to film it, how to position the camera and what the shutter settings should be. If no one involved in the use of the drone-mounted camera meets this requirement, copyright may yet subsist in the film. There will be no director's copyright in it, but there will still be the producer's copyright – the producer being the person who makes the arrangements necessary for its production.

Finally, of course, anyone using a drone-mounted camera to take a photograph or film needs to take care not to infringe the copyright in any work included in the photograph or film. UK copyright law includes a handy exception allowing incidental inclusion of a copyright work in a photograph or film, but this obviously will not apply if the photographer or film-maker is



focusing on the work in question in order to create an effect or make a point.

A particular pitfall is another exception to copyright protection, which photographers and film makers frequently rely upon, but which may not protect them when using drone-mounted cameras. Under UK copyright law, it is not an

infringement of the copyright in a sculpture or a work of artistic craftsmanship which is permanently situated in a public place to include it in a photograph or film. Drones can enable a viewer to see into private open spaces such as gardens; it could be a costly mistake to use one in order to film a famous but private sculpture collection.

-- CHAPTER 4 --

Employment and Labor

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Drones are poised to become valuable tools in the workplace for their potential to improve safety, minimize operational costs, and revolutionize site security and surveillance. Already, a number of employers have cut down on work-related injuries by utilizing drones equipped with robotic arms to execute a range of inherently dangerous tasks typically performed by humans. Drone technology has also proved ideal for conducting workplace inspections, as drones can survey large areas and quickly develop cost-saving data. For example, drones equipped with special sensory equipment, such as infrared sensors, are now being used to detect specific points of heat loss from office buildings to improve energy efficiency. Moreover, drones mounted with high-resolution, live-feed cameras may soon serve as effective workplace security systems, as well as effective employee monitoring tools. Although the advantages to drones in the workplace are numerous, the technology may also force employers to review their policies on employee privacy, or risk a lawsuit.

Federal & State Wiretapping Acts

As drones with recording capacities grow smaller, employers should be aware of the laws governing workplace recordings. So far, the law has not significantly infringed upon a private employer's right to monitor workplace computer communications, text messages, or web site visits when those activities take place on an employer-owned device. The law does, however, place limits on an employer's right to monitor an employee's telephone or oral communications in the workplace.

Indeed, the Federal Wiretapping Act/Electronic Communications Privacy Act prohibits the intentional interception or disclosure of any oral communication, without a person's consent, where there is a reasonable expectation of privacy. Violating this statute can lead to criminal sanctions--including imprisonment--as well as civil fines. In addition to the Federal Wiretapping Act, many states have adopted comparable wiretapping statutes that may impact an employee monitoring program. While federal law only requires one-party consent to a recorded oral conversation, twelve states require the consent of all recorded parties. Those jurisdictions are California, Connecticut, Florida, Illinois, Maryland, Massachusetts, Michigan, Montana, Nevada, New Hampshire, Pennsylvania, and Washington.

In light of these laws, employers wishing to use drones to monitor employee conversations will be in a much better position to protect themselves from legal challenges if they obtain employee consent, before recording, as a condition of employment.

Hidden Cameras

Drones that record only video for security purposes are legal in public workspaces. Private spaces in the workplace, such as bathrooms, locker rooms, dressing rooms, etc., should not be recorded. A gray area, however, still exists as to whether an employee's office is private or public under common law. To avoid uncertainty, employers should, again, notify employees that all office premises, including private offices, may be under surveillance, and obtain consent.

-- CHAPTER 5 --

Export Controls

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The potential military and intelligence, surveillance and reconnaissance (ISR) applications of drones bring them squarely within the scope of international export control policy and regulation. The licensing requirements are not, however, limited to products intended for a military or ISR use. International sales of almost all commercial unmanned aerial vehicles (UAV) systems and many of their sub-systems require a license authorization for export.

Scope of the Licensing Obligation

The licensing rules have broad application in the context of drones. Any UAV having an autonomous flight control and navigation capability – or that can be operated remotely outside of direct visual range of the operator, other than model aircraft – is likely to require a license for export. The licensing requirements also extend to sub-systems and component parts, such as autopilots, positioning equipment, and flight control systems and their component parts.

Export licensing controls also apply to cross-border transfers of technology required for the development, production or use of UAVs and UAV sub-systems. An email to a colleague in another country containing operating instructions may be a licensable export.

The nature of the licensing obligations applicable to UAVs varies according to the intended application and capabilities of the system. The extended range and carrying capacity of certain products brings them within the same rules governing international sale of cruise missiles. The controls, which are designed to prevent sensitive products and technologies falling into

the hands of unfriendly states or terrorists groups, are taken seriously. In most countries, the export controls are vigorously policed and enforced, and violations carry significant criminal penalties.

The International Regulatory Framework

Most countries, including the United States and each of the EU member states, have adopted a comprehensive export control regime to prevent the proliferation of sensitive products and technologies to countries, groups and individuals regarded as a potential threat to national security. These national rules respond to commitments under multilateral agreements and, in some cases, add additional unilateral compliance obligations. No country wants its defense and security technologies deployed against its own peoples, and most have sophisticated licensing and enforcement regimes to limit that risk.

The lists of products and technologies subject to licensing controls are developed multilaterally under international agreements. The two regimes relevant to both target drones and reconnaissance drones are the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, which has 41 signatory states, and the Missile Technology Control Regime (MTCR), which has 34 signatories.

The Wassenaar Arrangement has established two lists of controlled products and technology:

- A "Munitions List" of equipment and technology designed for military use

- A "Dual-Use List" of products and technology that, regardless of the purpose for which they were developed, have both commercial and military applications

The Missile Technology Control Regime has developed additional classes of controlled items designed to limit the proliferation of systems capable of delivering weapons of mass destruction.

The countries participating in the Wassenaar Arrangement and MTCR have each agreed to adopt these common lists of products to be subjected to export controls, and to transpose them into national law under an effective export licensing regime. The licensing arrangements and enforcement regimes vary from country to country, but the scope of the controls are defined by these lists. Accordingly, the rules defining which UAVs and UAV systems are subject to export licensing controls are broadly similar throughout the world.

In the United States, products and technology appearing on these lists are controlled variously under the U.S. International Trade in Arms Regulations (ITAR) as items on the U.S. Munitions List (USML), or under the U.S. Export Administration Regulations (EAR) as items on the Commerce Control List (CCL).

Similarly, within the European Union, the Dual-Use List has been adopted as EU law directly applicable in all 28 member states as the EU Dual-Use Regulation (Regulation No. 428/2009). Munition List items are regulated individually by the member states through the Common Military List of the European Union.

The Munitions List

The Munitions List has been expanded beyond munitions. It includes a broad range of products other than weapons and ammunition, such as military vehicles, combat vessels (surface or

underwater), aircraft and more recently, UAVs designed for military use. Category **ML10.c** of the Munitions Lists controls:

- Unmanned airborne vehicles specially designed or modified for military use, including remotely piloted air vehicles (RPVs), autonomous programmable vehicles and "lighter-than-air vehicles"
- Associated launchers and ground support equipment
- Related equipment for command and control

Sub-systems and components themselves designed for military use may be separately controlled. For example, each of the following is individually controlled under the Munitions List:

ML10.d Aero-engines specifically designed or modified for military use.

ML15.b Cameras, components and accessories specially designed for military use.

ML15.d Thermal and infrared imaging equipment, components and accessories specially designed for military use.

Dual-Use List

The Dual-Use List controls the following categories that specifically address non-military UAVs:

9.A.12.a UAVs and related equipment and components designed to have controlled flight out of the direct natural vision of the operator and having either (1) a maximum endurance greater than or equal to 30 minutes but less than 1 hour, and designed to take off and

have stable controlled flight in wind gusts equal to or exceeding 46.3 km/h (25 knots), or (2) a maximum endurance of 1 hour or greater.

9.A.12.b.3 Equipment or components specially designed to convert a manned aircraft to a UAV specified by above.

9.A.12.b.3 Air breathing reciprocating or rotary internal combustion-type engines, specially designed or modified to propel UAVs at altitudes above 15,240 meters (50,000 feet).

9.B.10 Equipment specially designed for the production of items specified above.

9.D.1, 9.D.2 and 9.D.4.E Software specially designed or modified for the development, product or production of equipment or technology specified above.

9.E.1 and 9.E.2 Technology required for the development or production of equipment or software specified above.

Model aircraft are expressly excluded from these control categories.

Missile Technology Control Regime

The focus of the MTCR is to limit the proliferation of missiles capable of delivering weapons of mass destruction. Its scope includes cruise missiles, target drones, reconnaissance drones, and other forms of UAVs, regardless of whether they are military or commercial, or armed or unarmed. Specifically, the MTCR definition of UAVs controls:

19.A.2 Complete unmanned aerial vehicle systems (including cruise missile systems, target drones and reconnaissance drones) having a range equal to or greater than 300 kilometers.

The MTCR requires participating governments to apply a “strong presumption of denial” to license applications for military and commercial UAV systems capable of a range of at least 300 kilometers and that are capable of carrying a payload of at least 500 kilograms, but also permits such exports on “rare occasions” that are well justified by reference to the non-proliferation and export control factors specified in the MTCR Guidelines.

Technology Transfers


The licensing controls on international sales of drones are not limited to exports of physical product. It includes transfers of technology required for the development, production or use of controlled items. The definition of technology is broad as it includes blueprints, designs, technical data, manufacturing drawings and manuals.

An export of controlled technology can take place electronically by means of a simple email or downloading data from a server, or hand-carrying a memory stick or laptop containing controlled data.

Export Authorization

A controlled product or technology requires a license or other export authorization granted by the relevant national licensing authority. While most countries adopt the same lists of controlled items, the manner in which licenses are issued varies from country-to-country.

In the United States, licensing responsibility is shared between the Bureau of Industry and Security (BIS) within the U.S. Department of Commerce, and the Directorate of Defense Trade Controls (DDTC) within the U.S. State Department. BIS implements the dual-use control system through the U.S. Export Administration Regulations (EAR), whereas DDTC has historically implemented controls on Munitions List items through the International Traffic in Arms Regulations (ITAR). As a consequence of



recent reforms to the U.S. export control regime, however, many UAV sub-systems and components containing low-risk technology previously controlled under the Munitions List have been moved to the Commerce Control List (CCL) and are now regulated by the less restrictive EAR.

Within the European Union, dual-use controls are implemented through the EU Dual-Use Regulation that is directly applicable in all EU member states. Most dual-use items may circulate freely within the European Union and only require a license when going to a person or place outside the EU. Munitions List items continue to be regulated individually by the member states by national law, and require a license when going outside national borders.

The European Union has adopted a system of General Export Authorisations (GEAs) to facilitate the export authorisation of international sales and transfer of low-risk technologies to friendly countries. Use of the GEA requires only registration with the relevant national licensing authority and compliance with the license conditions, which are generally in the nature of record-keeping requirements and annual notifications.

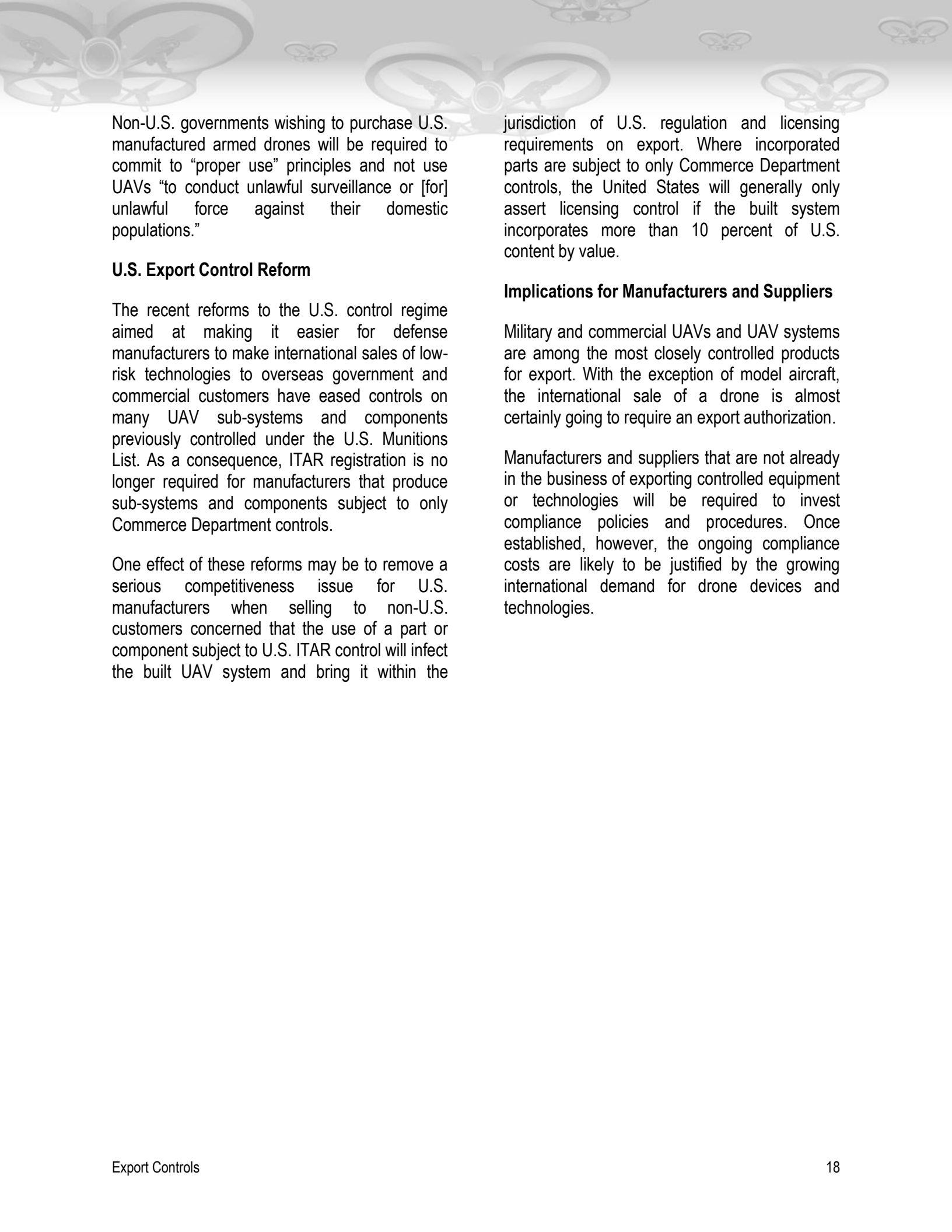
U.S. Licensing Policy on Military Drones

A report by the Stimson Center's Drone Task Force in June 2014 recommended that the U.S. government examine the broader non-proliferation effect of the MTCR presumption of denial for drones with a range of at least 300 kilometers and that are capable of carrying a payload of at least 500 kilograms. The rule has severely restricted sales of armed drones by U.S. manufacturers despite the demand from non-U.S. governments. The Stimson Center's Drone Task Force said that the U.S. government should determine whether the presumption remains a useful non-proliferation tool or merely facilitates the growth of UAV manufacturing outside the United States.

In February 2015, the United States government announced a new policy for the licensing of commercial and military U.S.-origin UAVs and UAV systems. It re-affirmed its commitment to the MTCR's "strong presumption of denial" for export of UAVs with a range of at least 300 kilometers and that are capable of carrying a payload of at least 500 kilograms, but describes the "Principles for Proper Use" of U.S.-Origin Military UAVs under which the U.S. may nevertheless grant a license authorization.

The new policy contemplates licensing sales to "trusted partner nations, increasing U.S. interoperability with these partners for coalition operations, ensuring responsible use of these systems, and easing the stress on U.S. force structure for these capabilities." In opening the door to exports of armed UAV systems, the policy also introduces enhanced licensing controls for such products, including "potential requirements" for:

- Sales and transfers of sensitive systems to be made through the government-to-government Foreign Military Sales program, precluding direct exports by manufacturers to non-U.S. government and commercial customers
- A review of potential transfers to be made through the Department of Defense Technology Security and Foreign Disclosure processes
- Each recipient nation to be required to agree to end-use assurances as a condition of sale or transfer
- End-use monitoring and potential additional security conditions to be required
- All sales and transfers to include agreement to principles for proper use



Non-U.S. governments wishing to purchase U.S. manufactured armed drones will be required to commit to “proper use” principles and not use UAVs “to conduct unlawful surveillance or [for] unlawful force against their domestic populations.”

U.S. Export Control Reform

The recent reforms to the U.S. control regime aimed at making it easier for defense manufacturers to make international sales of low-risk technologies to overseas government and commercial customers have eased controls on many UAV sub-systems and components previously controlled under the U.S. Munitions List. As a consequence, ITAR registration is no longer required for manufacturers that produce sub-systems and components subject to only Commerce Department controls.

One effect of these reforms may be to remove a serious competitiveness issue for U.S. manufacturers when selling to non-U.S. customers concerned that the use of a part or component subject to U.S. ITAR control will infect the built UAV system and bring it within the

jurisdiction of U.S. regulation and licensing requirements on export. Where incorporated parts are subject to only Commerce Department controls, the United States will generally only assert licensing control if the built system incorporates more than 10 percent of U.S. content by value.

Implications for Manufacturers and Suppliers

Military and commercial UAVs and UAV systems are among the most closely controlled products for export. With the exception of model aircraft, the international sale of a drone is almost certainly going to require an export authorization.

Manufacturers and suppliers that are not already in the business of exporting controlled equipment or technologies will be required to invest compliance policies and procedures. Once established, however, the ongoing compliance costs are likely to be justified by the growing international demand for drone devices and technologies.

-- CHAPTER 6 --

Film and Television (UK)

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The development of drones in recent years has created a wide range of exciting opportunities, particularly for filming and photography. A number of Hollywood productions have already taken advantage of the technology, including *Skyfall*, *Van Helsing* and, more recently, *The November Man*, as well as certain television programmes such as *Top Gear* and coverage of live cricket.

However, the use of drones for filming requires studios, production companies and broadcasters to consider issues which they may never have considered before, including requirements of aviation law. Conversely, aviation authorities are having to quickly come to grips with the idiosyncrasies of media law, as the use of drones for entertainment purposes increases at an exponential rate. As is common in the media and technology industry, the technology is developing far quicker than the law is able to predict, which can often lead to uncertainty and a degree of risk.

Use of drones in the UK for filming is nothing new, but is certainly gaining in popularity and sophistication. While the UK requirements and regulations are less strict than those in the United States, it is still critical that those wishing to use drones be aware of and follow such requirements and regulations to avoid invalidating a production's insurance policy, or risking the imposition of criminal sanctions.

UK Regulation

In the UK, the use of drones (also referred to as "unmanned aircrafts" or "UA") is subject to

various rules and restrictions. The level and extent of the applicable restrictions will depend on a number of factors, but mainly the weight and proposed use of the drone.

Weight. In a similar manner to other forms of aircraft, the relevant legislation applicable to the operation of drones is the Air Navigation Order 2009 (ANO) effected through the Civil Aviation Act 1982. Under this measure, if a drone weighs more than 20kg, then it will be treated similarly to a manned aircraft and be subject to various onerous regulations and requirements. Among other things, such drones are subject to severe fly-zone restrictions, will need to pass airworthiness tests, and will need to be registered with the Civil Aviation Authority (CAA).

For the purposes of filming and photography, most drones will weigh significantly less than 20kg. If this is the case, the drone will be classed as a "small unmanned aircraft" under Article 253 of the ANO and will therefore, to a large extent, avoid the minefield of aviation regulation. For the purposes of this chapter, we will look only at the rules and regulations applicable to drones weighing less than 20kg.

Use. The provisions of the ANO most relevant to the use of drones for filming are Articles 166 and 167. While Article 166 applies to all drones weighing less than 20kg and is general in application, Article 167 only applies to "small unmanned *surveillance* aircrafts", meaning drones equipped to undertake any form of surveillance or data acquisition – in other words, drones with a camera or other recording equipment.

Articles 166 and 167 are short, and reading them in their entirety is worthwhile. To summarise the main provisions:

Article 166 <i>Applicable to all drone use</i>	Drones cannot be used to drop objects or animals so as to endanger people or property.
	The drone pilot should ensure that a safe flight can be made.
	The drone pilot needs to keep a visual line of sight of the drone throughout the flight. Note: <ul style="list-style-type: none"> The CAA has suggested that this requires that the drone is within 500 meters horizontally and 400 feet vertically of the pilot. Going beyond these limitations requires CAA approval.
	Drones weighing more than 7kg must not fly into controlled or restricted airspace without the permission of the appropriate air traffic control unit. ⁴⁸ Note: <ul style="list-style-type: none"> Such airspace areas are generally those near to airports but can also include areas close to military bases or nuclear facilities. The not-for-profit organisation “No Fly Drones” offers a useful free planning tool for drone operators, which shows the various restricted airspace areas (http://noflydrones.co.uk/map-drone-no-fly-zones-uk/). It is recommended that even for drones weighing less than 7kg, coordination with the appropriate air traffic control unit is undertaken when flying in controlled or restricted airspace.
CAA permission is required for drone flights being conducted for “aerial work”. Note: <ul style="list-style-type: none"> Aerial work is broadly interpreted and includes receipt of any kind of valuable consideration given for 	

	the flight or the purpose of the flight. Unless you are using a drone for filming as a hobby or for practice only, then permission from the CAA will likely be required.
Article 167 <i>Applicable to drones used for filming</i>	Drones may not fly over or within 150 meters of any congested area (an area used substantially for residential, commercial, industrial or recreational purposes), without CAA permission.
	Drones may not fly over or within 150 meters of an organised open-air assembly of more than 1,000 people (e.g., over a musical festival or a sports match), without CAA permission.
	Drones may not fly within 50 meters of any vehicle, building or person not under the control of the drone pilot, without CAA permission. Note: <ul style="list-style-type: none"> In the context of filming, it is likely that a person will be “under the control of the pilot” if they are, for example, an actor receiving instructions and directions who has consented to the filming and has been briefed on the use of drones. Similarly, a building “under the control of the pilot” is likely to include a building specifically hired for filming purposes. It may be prudent for producers to seek to include a specific acknowledgement and consent to the use of drones for filming in its location and talent agreements.
	Drones may not take off or land within 30 meters of any person not under the control of the drone pilot, without CAA permission.

It is worth noting that Articles 137 and 138 of ANO will also apply to the use of drones weighing less than 20kg, and require that drones be operated in a manner which does not recklessly or negligently cause or permit the

drone to endanger a person, property or other aircraft.

Permission required from the CAA

From the above summary, it is clear that where you either intend to: (a) fly the drone on a commercial basis (which, for most filming, is likely to be the case); or (b) fly the drone within congested areas or close to people or properties that are not under your control, then you will need to request permission from the CAA before doing so.⁴⁹

As of February 2015, the CAA has issued more than 480 permissions to drone operators, up from only 230 in February 2014. These permissions have been given to film studios, production companies, and the BBC, as well as to organisations from other industries. Because of the complexity and bureaucracy involved in operating drones for filming in the UK, smaller production companies often seek specialist qualified contractors which have the necessary CAA permissions to undertake the filming work on their behalf.

Where permission is required from the CAA, operators will be required to, among other things, demonstrate that they have considered the safety implications and taken necessary steps to ensure that the flight will not put anybody in danger. Additionally, the CAA may require operators to demonstrate a minimum level of competency of the drone pilot. Unlike the licensing procedure established for a manned aircraft, there is currently no official standard against which “competence” can be tested, although the CAA has approved several training organisations from which pilots can obtain the required skills.

To apply for permission, applicants must complete and submit Form SRG1320 available from the CAA website and pay the applicable charge.⁵⁰ Applications should be made at least 30 working days before the permission is

required and, if granted, will need to be renewed every 12 months.

If permission is granted by the CAA, it may be subject to a number of additional restrictions or requirements. For instance, it is usually a requirement for the drone to be equipped with a mechanism that will cause the drone to land in the event of disruption of any of its control systems, and for the permission of the landowner on whose land the drone is intended to take off and land. The CAA may also prohibit flights which have not been notified to the local police prior to the flight taking place. Such restrictions make it critical for filmmakers and production companies to ensure that, in addition to obtaining CAA permission, they seek all relevant permissions from land owners, the council, park authorities and, where applicable, the police, in plenty of time before using a drone.

The CAA guidance note CAP 722 entitled “Unmanned Aircraft System Operations in UK Airspace – Guidance”⁵¹ is a helpful resource which outlines the main rules, regulations and guidance applicable to using unmanned aircraft. While a large proportion of the guidance is not applicable to drones weighing less than 20kg, it nevertheless considers the points we have discussed in this section in greater detail. In particular, the guidance clarifies that it is the “operator” (being the person having management of the drone, rather than someone contracting the operator) who should apply for the relevant permission. This is important for production companies that may wish to appoint one particular operator who has been granted the relevant permissions and who is competent to fly the drone.

Penalties

The penalties for breach of drone regulations are not inconsiderable. The CAA has issued a warning that those caught in breach could face fines of up to £5,000. Although prosecutions in the UK are currently few in number, they are

steadily increasing. The first such prosecution resulted in a fine of £3,500 when an operator lost control of his drone, which then flew too close to a road bridge and a nuclear submarine facility. Other operators have been prosecuted for flying drones over Alton Towers and over football matches.

Although this chapter has focussed on application in the United Kingdom, other countries within Europe are facing these issues and have similar rules and regulations in place restricting the use of drones. For instance, Germany, France and Spain all approach the regulation of drones based on their weight, purpose and intended use (i.e., whether for commercial work or not). While the rules may be similar, it is critical for operators to understand the specific local requirements in each target jurisdiction, particularly when the penalties for misuse of drones can vary dramatically between territories.

The Bottom Line

Top Tips for Drone Use

- Be aware of your surroundings – research your flight zone before commencing work. If the flight zone is within restricted airspace then you will need to liaise with the appropriate Air Traffic Control unit.
- Be mindful of the weather – it could disrupt your drone and cause it to go outside your control/line of sight.
- Be sure to get permission of the land owner whose property you are using to take off and land. If the land is not privately owned then this may require seeking permission from the local council.
- Respect people's privacy and rights. Seek permission before filming people where they may be identifiable. See the Privacy chapters for more information.
- Ensure that only qualified and capable pilots operate the drone itself. If CAA permission is required, the drone operator will need to be disclosed to the CAA in advance.
- When in doubt, seek permission from the CAA and allow plenty of time to do so.

-- CHAPTER 7 --

Film and Television (U.S.)

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Introduction

This chapter looks at the relationship between drones and the film and television industry.

The demand for drones in the entertainment realm is real. Whether it's a scene of an award-winning rooftop motorcycle chase,⁵² an aerial shot of a modest tree line,⁵³ or a simple video of a wedding ceremony,⁵⁴ production companies, news reporters, and amateur videographers have been clamoring for drones for years.

With such high demand and (until very recently) no real viable domestic option for production firms, videographers were forced to use drones in other countries⁵⁵ or shoot illegally.⁵⁶

Landmark FAA Exemptions for Production Companies

However, after a recent decision by the FAA, the ultimatum between shooting abroad or shooting illegally at home can now be a decision of the past.

On September 25, 2014, the FAA granted regulatory exemptions to six aerial photo and video production companies.⁵⁷ The Motion Picture Association of America facilitated the exemption requests on behalf of its six members: Astraeus Aerial, Aerial MOB, LLC, HeliVideo Productions, LLC, Pictorvision Inc., RC Pro Productions Consulting, LLC, and Snaproll Media, LLC.⁵⁸

This approval by the FAA was the first exemption to its ban on commercial drone use. Clearly, giving the first exemption of its kind to film production companies is a very good signal for other film and entertainment companies that want to use drones for their own commercial use.


Bringing aerial drone production back to the United States presents a big opportunity for those companies that are quick enough to gain FAA exemption.

Restrictions Imposed on the Use of Drones for Film

The FAA explained that a key factor in the approval of the six aerial photo companies was their strong exemption applications, which included unmanned aircraft systems (UAS) flight manuals with detailed safety procedures. The application submission of these companies can serve as a role model for other film and television companies.

Specifically, in their applications, the firms said the operators will hold private pilot certificates, keep the UAS within line of sight at all times, and restrict flights to the "sterile area" on the set. Additionally, in granting the exemption, the FAA added several other safety conditions, including an inspection of the aircraft before each flight, prohibiting operations at night, mandated flight rules, and timely reports of any accidents.⁵⁹

These exemptions anticipated the framework of the landmark regulations proposed by the FAA



February 15, 2015, that would allow routine use of certain UAS. The proposed regulations include both operational limitations, such as the UAS can be no more than 55 pounds, fly no higher than 500 feet and no faster than 100 mph; and operator requirements, including that operators must be at least 17 years old, pass an aeronautical knowledge test, hold an FAA UAS operator certificate, and pass a TSA background check. Once passed, operators of commercial UAS will no longer require an exemption, and the use of UAS in Film and Television will likely expand.

Benefits of Using Drones for Film, TV and Commercials

The benefits of using drones for the film industry are far-reaching. UAS can take images at angles never before captured or navigate indoor areas that are otherwise difficult or impossible to reach. Besides covering new angles and environments, drones can also cover new heights; drones can reach altitudes higher than cranes and are much less expensive and more agile than a manned helicopter.⁶⁰

Newsgathering Function

Besides benefitting theatrical videographers, the use of drones has been shown to be quite valuable for newsgathering and reporting. On January 12, 2015, CNN entered into a deal with the FAA to test the use of drones for newsgathering and reporting purposes. The deal involves a partnership between CNN and Georgia Tech Research Institute, with the purpose of such partnership to explore safety and access issues, and opportunities that need to be addressed as part of the impending new regulatory framework. Noting the significant opportunities unmanned aircraft offer news organizations, FAA Administrator Michael Huerta explained, “We hope this agreement with CNN and the work we are doing with other news organizations and associations will help safely integrate unmanned newsgathering technology

and operating procedures into the National Airspace System.”⁶¹

Days after CNN’s arrangement with the FAA was approved, a group of 10 media outlets, including the Associated Press, NBCUniversal and *The New York Times*, announced a similar arrangement. The media outlets will be teaming with Virginia Tech to experiment using small drones in reporting and newsgathering in “real life scenarios.”⁶²

The executive director of the Virginia Tech test site puts the advantage of newsgathering drones into perspective, stating, “UAS can provide this industry a safe, efficient, timely and affordable way to gather and disseminate information and keep journalists out of harm’s way.” With drones providing a faster, cheaper, and safer alternative to many current forms of reporting, it will undoubtedly become a very popular means of newsgathering once the FAA and these early media outlets can establish proper safety guidelines.

Privacy Concerns for Celebrities

With arrangements to test newsgathering drones already in place and the approval for this use looming near, several organizations have voiced concerns about privacy issues. Particularly outspoken among these groups have been celebrities, who worry about “paparazzi drones.” State legislatures have begun to address and respond to these concerns. Chief among them is California, which has approved a law that will prevent paparazzi from using drones to take photos of celebrities.⁶³

Concurrently with the release of the new FAA regulations, the White House released a memorandum regarding the privacy, civil rights and civil liberties in the domestic use of UAS, which requires the Department of Commerce – in consultation with other interested agencies – to initiate a multi-stakeholder engagement process to develop a framework for privacy,



accountability, and transparency issues concerning the commercial and private use of UAS in the National Airspace System (NAS).

As more safety and privacy guidelines are established, media and reporting companies will have never-before-granted access to new means of reporting. However, with this new access and freedom comes myriad privacy laws that these same companies must understand.

The Bottom Line

Before you decide to apply for an FAA exemption, you must ensure that your application is sound and that you have proper controls and restrictions in place. Once you have gained an exemption, it is equally important that you continue to understand and adhere to the ever-changing regulations of the FAA and the growing legislative privacy bills to minimize and avoid potential liability.

-- CHAPTER 8 --

Insurance and Insurability

Chapter Authors

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Introduction

This chapter examines the intertwined relationship between the development of commercial unmanned aircraft systems (UAS) and insurance. We examine three issues: the unique risks posed by UAS; the impact of potential uninsurability; and the future insurance landscape in the United States and internationally.

The Current Landscape: Potential Inability to Insure is a Headwind for the UAS Industry

Unique Risks Posed by Unmanned Aircraft Systems

Raija Ogden was running in the Endure Batavia triathlon on April 6, 2014, when a drone that was photographing the race fell from the sky, hitting her in the head. “I have lacerations on my head from the drone and the ambulance crew took a piece of propeller from my head,” she said. The operator of the UAS, Warren Abrams of New Era Photography and Film, was voluntarily filming the race and disputed Ogden’s claim, asserting that footage taken moments before the crash showed that “[S]he looks over her shoulder and gets frightened, falling to the ground and bumping her head, but the drone didn’t actually strike her.” As to the cause of the crash, Mr. Abrams asserted that “I’ve had the drone for more than a year, and this is the first time it’s crashed.” He said the drone may have been hacked.

Exactly one month earlier, U.S. Administrative Judge Patrick G. Geraghty of the National

Transportation Safety Board struck down the FAA’s \$10,000 fine levied against Raphael Pirker for operating his 56-inch Zephyr II electric flying wing weighing 4 pounds, 7 ounces on the campus of the University of Virginia.⁶⁴ (Appendix 1) Pirker was photographing the campus for a paying customer. The question at the center of Judge Geraghty’s opinion was whether Pirker’s flying wing was an “aircraft” and therefore subject to FAA regulation, or whether it was a “model aircraft” and therefore subject only to “voluntary compliance with safety standards for model aircraft operators.” The FAA claimed that Pirker’s flying wing was an “aircraft” and therefore a “UAS.” The judge determined that “[A]ccepting [the FAA’s] overreaching definition of ‘aircraft,’ would result *reductio ad absurdum* in regulatory authority over any device/object used or capable of flight in the air, regardless of the method of propulsion or duration of flight.”⁶⁵ Finding that Pirker’s flying wing was a model aircraft, and that there are no enforceable FAA regulations applicable to model aircraft – or for classifying model aircraft as a UAS – the judge terminated the FAA’s proceeding. That ruling was later overturned by a full panel at the National Transportation Safety Board. As of December 2014, 20 states passed legislation addressing UAS usage.⁶⁶

These two incidents are reflective of the unique risks posed by UAS: the human and commercial risks of bodily injury, nuisance, harassment, operator error, product liability, or hacking, coupled with a regulatory environment that makes insuring UAS a tricky business.

Hardware Failure

A detailed study of U.S. military UAS reviewed all “Class A Mishaps” between 2004 and 2013. A Class A Mishap is defined as a non-combat accident that results in a death, a permanent total disability, or damage of at least \$1 million.⁶⁷ The study found that nearly 60 percent of all Class A Mishaps were caused by hardware failures. The hardware failures occurred primarily in the electrical and engine systems of military UAS, and also in variable pitch propellers. Although there are significant differences between military and commercial uses of UAS, this data is instructive in assessing commercial UAS risks generally, risk mitigation on the part of UAS manufacturers, and insurance coverage.

Aircraft hull policies are available for UAS, and they generally pay for, replace or repair accidental loss or damage to the UAS itself, and may cover owner/operators for hardware failures not caused by wear and tear or deterioration. These policies also provide liability coverage. Most policies, however, exclude damage that is attributable to illegal operation of the aircraft. The NTSB has ruled that using UAS for commercial use without an FAA waiver, as Raphael Pirker was doing, is an illegal operation. Until the FAA releases new regulations with respect to UAS, the potential to insure UAS will be limited to those few pilots and operators who are able to obtain FAA waivers.

For manufacturers, product liability policies with limits of up to \$100 million are currently available, and although expensive, they provide product liability coverage.⁶⁸

Pilot Error

Twenty-eight percent of military Class A Mishaps from 2004 to 2013 were attributable to pilot error.⁶⁹ As technologies develop and product design becomes more robust, this is likely to outstrip hardware failures as a liability risk, and may argue in favor of autonomous UAS that

operate through advanced software systems, coupled with sensing hardware and GPS navigation systems. These are a way off, however, as anti-collision systems and an individual UAS’ ability to handle lost links and make decisions on its own are not commonly available for commercial use, and are not part of any regulatory framework. Interestingly, though, only .03 percent of military UAS Class A Mishaps were attributable to software, indicating that those systems may be more robust than the hardware, and more reliable than human beings.

AIG currently offers a stand-alone UAS liability policy for UAS operators. The application for that coverage reflects the current concern over pilot error, as well as the current regulatory constraints. For example, the applicant is asked, “Has applicant obtained a Certificate of Waiver or Authorization (CoA) from the FAA?”⁷⁰ Given that only a handful of such waivers have been granted by the FAA, if a “no” answer to that question means a denial of coverage, this must be a rare policy, and it indicates that current policy offerings are preparing for the upcoming FAA regulations that insurers and UAS operators alike are hoping will open the door to widespread use of UAS. On the issue of pilot error, however, the AIG application requires information concerning past accidents, and requires the names of all pilot operators who will regularly control the UAS. Each of those people must complete a “UAS Pilot/Operator Qualifications” form. See Appendix 2. This three-page form inquires about various certifications, trainings, number of missions as pilot-in-command of various UAS and manned aircraft, and also personal questions about treatment for chemical dependency and current medications. This is arguably more stringent than the proposed FAA regulations under proposed Part 107. Clearly, insurers have identified pilot error as a significant risk in this arena.

Given the current rate of FAA waivers and strict insurance requirements, it is easy to imagine that a cottage industry of professional UAS pilots will

emerge. They will be neither owners of the UAS nor employees of the company using the UAS for its business. In the event of an accident, these pilots will likely be defendants. In addition, software designers, engineers and programmers who design and program the guidance software used by UAS operators may be independent entities, distinct from UAS manufacturers, who risk liability in the event of malfunction or even hacking. In general, it is easy to imagine an entire support network of independent professionals emerging as the commercial use of UAS grows. All of these specialists will need professional liability insurance.

Professional liability insurance is a “claims made” coverage that covers loss resulting from professional services that the insured provides to others for a fee. It is typically designed for specific professions, such as lawyers, accountants and pilots. Unlike many of the other policies discussed in this chapter, pilots’ professional liability insurance would likely be a good fit with the unique risks presented by UAS professionals, assuming that insurers are willing to take on those risks.

Harassment, Nuisance and Trespass

There is another element of the Endure Batavia triathlon story that permeates many popular discussions of “drones.” Some people, like the triathlete who looked over her shoulder only to be confronted by an UAS, find them creepy, intrusive and frightening. In addition to being another headwind for the industry, public attitudes about UAS and their capacity to intrude upon our lives present a litigation risk. According to a survey of more than 2,000 respondents, conducted January 21-27, 2015, 73 percent said they want regulations for drones. Forty-two percent went as far as to oppose private ownership of drones, suggesting they prefer restricting them to officials or experts trained in safe operation. Another 30 percent said private drone ownership was fine, and 28 percent were not sure.⁷¹

Even aside from the obvious issues of actual invasion of privacy and data collection, discussed below, do people have a right to be free of perceived harassment or nuisance from the mere presence of UAS while sitting in their homes, walking down the street or running a triathlon? Unless UAS can be demonstrated to serve the public good, such as search and rescue or public safety, it will be difficult for UAS operators to gain regulatory clearance to fly in populated areas, and harder yet to obtain insurance for that potentially lucrative business. Those issues and others have been the subject of regulation as well as litigation. Therefore, liability coverage that pays for defense costs will be critical for the growth of the UAS industry.

Current general liability policies cover “personal injury” liability such as publication of material that invades someone’s privacy, or defamation, libel and slander. Those policies, however, typically contain an exclusion for loss resulting from the use of any “aircraft.” A handful of insurers are providing dedicated UAS policies, which provide coverage for bodily injury and property damage to third parties as well as hull damage to the UAS itself, but those policies do not cover personal injury liability. As of this writing, however, these modified aviation hull and cargo policies appear to be the most likely current source of coverage. That leaves a coverage gap for trespass, harassment, nuisance and other similar causes of action.

Trespassing in particular raises potentially thorny issues for UAS operators and insurers, because ownership of certain portions of the airspace is not settled. The issue of who owns airspace has been debated for centuries in the context of issues like encroachment onto another’s property by overhanging tree branches or buildings. In the modern era, the question was resolved for a time by the famous Supreme Court case, *United States v. Causby*.⁷² During World War II, a chicken farmer named Causby sued the U.S. government because low-flying planes from a nearby military airport caused 150 of his chickens

to kill themselves by flying into walls in a frenzy. Other chickens survived but produced less, and Causby's farm ceased operations. He sued the government, claiming that his inability to use his land was a "taking" under the 5th Amendment. Justice Douglas, writing for the Court in 1946 stated,

We have said that the airspace is a public highway. Yet it is obvious that if the landowner is to have full enjoyment of the land, he must have exclusive control of the immediate reaches of the enveloping atmosphere.⁷³

According to the FAA, manned aircraft must generally fly above 500 feet.⁷⁴ Somewhere between "the enveloping atmosphere" the Supreme Court allotted to private property owners and the 500 feet where the "public highway" begins is likely where many UAS flight paths will be. Whether those flight paths trespass on privately owned land could be the subject of litigation.

Standard general liability policies cover "wrongful entry, eviction or invasion of private occupancy." Since many of those policies do not apply the aircraft exclusion to personal injury claims, there could be arguments in favor of coverage for negligent trespass. The coverage is not a tight fit, however. Wrongful entry is most often tenant claims against landlords for trespass or wrongful eviction. Trespass is generally considered to be an intentional tort, and general liability policies exclude coverage for intentional acts. In addition, "wrongful entry" has been deemed to be an "invasion of an interest in real property,"⁷⁵ which is somewhat narrower in some respect than the tort of trespass, which generally encompasses "any unlawful interference with one's person or property or rights."⁷⁶

In contrast to wrongful entry, the coverage in general liability policies for "invasion of the right of private occupancy" does not require physical entry onto the property. Constructive entry is

sufficient to trigger that coverage,⁷⁷ which may be a better fit with the trespassing risk posed by UAS, as long as the allegation does not assert intentional conduct.

In response to the risk of large-scale lawsuits alleging trespass or wrongful entry, a new company set up a website registry, similar to "do not call" lists.⁷⁸ This type of control may mitigate the risk, or it may make UAS flights over populated areas even more likely targets of litigation, asserting that, for example, one condominium owner in a building is on the no-fly list, while others in the same building are seeking package delivery from a UAS operator.

Until these issues are resolved in a more comprehensive manner, it is difficult to imagine insurers providing personal injury coverage for drone operators in populated areas.

Privacy and Cyber Liability

As UAS are increasingly used to collect, store and transmit data, there is a risk that UAS operators will violate people's privacy. In addition, as the onboard software systems on UAS become more sophisticated, there is a risk that UAS will be hacked, either to steal them, divert them or obtain information they are carrying. As Mr. Abrams, the owner of the UAS that hit the triathlete asserted, his UAS may have been hacked. This raises a difficult equation for insurers grappling with UAS risks: if pilot error is a key risk, then the guidance software that so far has not been a significant risk would seem to be a likely fix to avoid bodily injury and property claims. But if that software can be hacked, then the risk simply changes from pilot negligence to hacking. This makes cyber liability coverage a key topic in UAS insurability.

Cyber liability coverage for third-party loss in currently available policies may include reimbursement of defense costs and indemnification for damages, judgments and settlements resulting from claims that include

allegations of violations of privacy rights, unlawful or negligent disclosures of personal information, breaches of duties to secure confidential personal information under state and federal laws and regulations, breaches of duty, disclosures or fraudulent or criminal conduct by employees or others, infringement of intellectual property rights, unfair competition, defamation, violation of consumer protection statutes, and deceptive trade practices statutes. The coverage may also include regulatory actions, lawsuits, and demands, such as payments to consumer redress funds administered by regulatory agencies. Further, coverage may apply to “breachless” claims, where a potential problem or disclosure can be fixed before it becomes a claim.

Cyber liability policies have now evolved to the point where most insurers offer off-the-shelf forms and endorsements focused on data protection and security and privacy liability, which may be tailored for specific industries and types of insureds. In this respect, the U.S. and UK insurance markets are currently at somewhat different stages of development. The mandatory notification requirements for data breaches that exist under the laws of most U.S. states, and laws and regulations that are being considered at the federal level, have crystallized an insurance market response. The U.S. market is continuing to evolve but is now relatively well-established, and the identification of appropriate coverage is often a board of directors-led initiative, most notably in the retail, health care and financial services sectors. The scope of protection offered in the U.S. market currently tends to focus on payment for the costs of compliance with mandatory notification requirements, the costs of providing initial relief to potential victims (including credit monitoring and insurance products), forensic investigation costs to determine the source of a breach or event, defense costs (including defending or responding to any regulatory intervention), the costs of claims resulting from a breach (including damages and settlement costs), and payments to


consumer redress funds. Cyber liability insurance policy forms can vary from carrier to carrier, however, and an insured can play an active part in identifying the risk exposure of its own business and market sector, and negotiating policy wording and coverage tailored to its needs.

In the case of UAS manufacture and operation, however, the amount of wordsmithing required to customize current privacy and cyber liability policies to fit the risks is daunting. The cyber risks that are unique to UAS are unlike the cyber risks posed by typical retail, health care or financial services companies. First, there is the navigational software in the UAS itself. It can theoretically be hacked, or it can malfunction, resulting in the potential loss or damage to the UAS itself, and bodily injury or property damage to others. It can also inadvertently invade privacy or collect data without ever publishing that information. It can also act like a typical software/hardware system that collects data that can be hacked and used to cause loss to third parties.

In sum, privacy and cyber risks are likely among the reasons that the FAA has granted only 43 waivers to UAS operators, and they are for such purposes as pipeline maintenance, precision agriculture, and other activities that take place well away from dense populations. By all accounts, Amazon’s actual ability to deliver packages in residential areas via UAS is years away. That will likely provide manufacturers, operators and cyber insurers the time and loss experience required to identify, mitigate and transfer the main cyber risks associated with UAS.

The Impact of Potential Uninsurability

Risk transfer mechanisms like insurance support the growth of industries and individual businesses by freeing capital that would otherwise be tied up reserving against loss. Insurance also increases access to credit by lowering a company’s risk profile. The unique



risks presented by the UAS industry present insurers with uncertainty and ambiguity, both of which are anathema to insurers:

We can calculate probabilities from real-life situations only when similar experiences have occurred often enough to resemble the patterns of games of chance. Going out without an umbrella on a cloudy day is risky, but we have seen enough cloudy days and have listened to enough weather reports to be able to calculate, with some accuracy, the probability of rain. But when events are unique, when the shape and color of the clouds have never been seen before, ambiguity takes over and risk premiums skyrocket. You either stay home or take the umbrella with you whenever you go out, no matter how inconvenient.⁷⁹

It appears that most insurers are staying home, and the insurers that are venturing into the risks presented by the UAS industry are bringing their umbrellas every day. In the EU, UAS are required to be insured at the same levels as manned aircraft.⁸⁰ Although Lloyd's calmly refers to insurance coverage for UAS as "the same as those for traditional aviation risks,"⁸¹ those risks are considerable and expensive for a fledgling industry. One can question the fit and proportionality of insuring a five-pound flying wing the way you would insure a Boeing 747.

The importance of insurance to the growth of the industry was raised at the 2013 annual meeting of the Association of Unmanned Vehicles Systems International as the "gorilla in the room." One consultant⁸² observed that "while FAA integration is a sufficient event...insurability is a necessary event before businesses can successfully use UAS in the National Airspace System because no business is going to want to be on the line for liability concerns."⁸³ And the more pointed observation was that, "Insurability

will determine which sectors of the UAS market will grow and which will die."⁸⁴

For broad-based expansion of the industry, the FAA regulations are in fact necessary to the question of insurability because they will remove a significant amount of the ambiguity facing insurers. For example, resolving the certification requirement for pilots and streamlining the waiver process will remove significant ambiguities that currently could give rise to insurance losses. Only when those ambiguities are resolved or removed will insurers come out of their houses without their umbrellas.

The Future: What UAS Insurance Will Look Like

One sector on the forefront of UAS commercial use is precision agriculture, in which real-time data is collected on weather, soil and air quality, crop maturity, and even equipment and labor. Predictive analytics are then used to make planting, spraying and other decisions.⁸⁵ UAS are currently being used for these purposes in rural areas, away from homes and traffic, collecting data where the risk of bodily injury and property damage is arguably reduced. This provides a glimpse into what UAS insurance could look like in the foreseeable future.

Penn Millers Insurance Company, a subsidiary of ACE, is an agribusiness specialty insurer. It was recently approved by several states to issue endorsements to agricultural general liability policies. A version of the endorsement that was approved in Wisconsin is attached as Appendix 3. It provides a carve-out from the aircraft exclusion in farm liability policies and grants coverage for "unmanned aircraft systems" when used for aerial reconnaissance, data collection, crop monitoring, mapping and other scheduled operations. The endorsement defines UAS as "a robotic aircraft weighing less than 26 pounds without a human pilot on board and with its flight controlled by an on-board computer or remote

human operator.” There is the option for a separate UAS Liability Limit. (See Appendix 3).

Similarly, the Insurance Services Office (ISO), which provides policy language for property and casualty insurers, recently announced that it is seeking state insurance regulatory approval to add business-use UAS coverage to commercial General Liability Policies by June 2015.⁸⁶

Specifically, it has been reported that ISO coverage endorsements will provide an exclusion that applies specifically to UAS, and additional endorsements will specifically provide coverage to UAS operators for bodily injury, property damage, personal injury and advertising injury. This only means that insurers have the option to add coverage to their policies. It does not mean that they will. In addition, given that some states are moving to limit or even outlaw UAS use, the ISO may not be filing for or receiving approval in all states.

It remains to be seen how insurers will opt to use general liability policies to cover UAS risks, and those policies likely won't respond to UAS cyber liability. Nevertheless, these endorsements are an important step in providing insurers with the claims information they need in order to leave their umbrellas at home.

At least one insurer has stand-alone hull and liability coverage tailored to UAS operators and manufacturers. They have stated:

While all underwriting questions are important, the key components to any aircraft risk evaluation surround the specific make(s) and model(s) to be operated, the business/ professional purpose for which the aircraft will fly, where the aircraft will fly, and what level of experience/qualifications the operator(s) has/have with respect to aviation and the use of the aircraft being operated.⁸⁷

There is no mention of cyber liability or privacy insurance, but the provider, AIG, does state that there is no exclusion in its UAS policy form for loss arising from electronic malfunctions and failure of electronic components, accessories and power equipment.⁸⁸

In sum, the current state of the market appears to be that there are a small number of policies written specifically for UAS, but we question how broadly these policies can be marketed, given the regulatory uncertainty at both the federal and state levels. There are also “fixes” to existing general liability policies that would provide coverage by (for example) carving out an exception to the “aircraft” exclusion, but those fixes would likely leave in place the poor fit between the risks presented by UAS and the general liability policy language. The likelihood of trespassing claims is an example of that problem. We found no examples of cyber liability or privacy policies that have been specifically manuscripted for UAS operators.

Given this landscape, manufacturers and operators would be well advised to continue seeking their own risk mitigation policies, such as pilot certification, and to find a specialty broker with deep expertise in aviation risks, but who also has the capability to keep up with developments in other areas, such as cyber liability.

The Bottom Line

The UAS industry and its insurers continue to develop risk mitigation and risk transfer solutions that allow the industry to grow, but the current situation is too ambiguous to accurately assess risk. During this fluid process while regulators and insurers grapple with new and unique risks, companies can best arm themselves with good risk management, comprehensive coverage, and sensitivity to managing and maximizing their relationships with their brokers and insurers.

-- CHAPTER 9 --

Music

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Introduction

This chapter looks at the relationship between drones and the music industry.

While at first blush there may not be an apparent connection between drones and the music industry, drones are being increasingly used on the set of music videos and live concert events by operators ranging from experienced cinematographers to amateur concert goers, marketers, security professionals and business entrepreneurs. Such uses create a host of issues and impact the way music is consumed.

Drone Use at Live Concert Events

Drones are being increasingly used at live concert events and music festivals both by professionals and amateurs.⁸⁹ Last year, the organizers of the Coachella Music Festival teamed up with aerial robotics firms and used drones to live stream concert footage over their YouTube channel.⁹⁰ Other companies and institutions have used drones for security purposes⁹¹ and even marketing stunts at concerts and festivals.⁹²

The proliferation of low cost drones that can be operated by amateurs raises both safety concerns and intellectual property infringement issues. From a safety perspective, drones flying over the heads of spectators present a danger if the operator should lose control and the drone should crash. Proposed regulations by the FAA seek to mitigate such risks by requiring that operators must be at least 17 years old, pass an aeronautical knowledge test, and hold an FAA

UAS operator certificate, as well as prohibiting drones from flying over spectator's heads.

In addition, the unauthorized recording of a performance by an amateur from a drone may violate a performer's intellectual property rights, including: (i) the copyright in the musical composition, usually controlled by the publisher; (ii) the copyright in the lyrics, also usually controlled by the publisher; (iii) the copyright in the performance, usually controlled by the label; (iv) the band's right of publicity; and (v) trademarks owned by the band.⁹³ Concert promoters and venues are starting to take notice of such issues. Recently, the SXSW Music Festival in Austin, Texas strictly prohibited the use of drones within the city limits.⁹⁴ As the intrusion of drones into public places become more commonplace, it's clear that the early use of drones at concert events has not been welcome by all interested parties.⁹⁵

Drone Use in Music Videos

A drone's ability to capture high angle and aerial photography in a relatively inexpensive manner has led to an increase in the use of drones during music video shoots. Video directors are drawn to the flexibility and creativity a drone provides them.⁹⁶ The band OK GO's music video for their song "I Won't Let You Down" was filmed entirely with the use of drones and became a viral sensation.⁹⁷ The video's sweeping high angle shots and perspective create a video that is visually stunning. A decade ago, such footage would only be possible with the use of a crane or helicopter. In that way, drones are a much cheaper and, arguably, safer alternative.



The Bottom Line

The key, as with any new technology, is balancing the innovative uses for drones in music videos and in public settings (such as live concerts and festivals) with safety precautions and regulations that protect all interested parties, from concert goers and the band to the cast and crew of music video shoots.

-- CHAPTER 10 --

Privacy (U.S.)

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Introduction

This chapter examines U.S. privacy law with respect to the use of drones. A Connecticut court recently noted in passing that, “Video surveillance is poised for exponential expansion into a new dimension” by way of drones, and that “Aside from FAA regulations restricting their operation so as avoid collisions with aircraft... regulation of such airborne video platforms is virtually nonexistent.” *Chapdelaine v. Duncan*, 2014 BL 349464, 17 (Conn. Super. Ct. Oct. 28, 2014). This aside by the court may understate the current level of regulation, especially with respect to privacy. While federal regulation as to drone usage is in the very first stages, common law and especially state statutory law already provide some important privacy guideposts.

Common Law Of Privacy

Dean Prosser, in his 1960 article “Privacy” for the *California Law Review*, surveyed what was, even in 1960, a haphazard patchwork of legal authority on this point. He concluded:

What has emerged from the decisions is no simple matter. It is not one tort, but a complex of four. The law of privacy comprises four distinct kinds of invasion of four different interests of the plaintiff, which are tied together by the common name, but otherwise have almost nothing in common except that each represents an interference with the right of the plaintiff...to be let alone.

Dean Prosser, *Privacy*, 48 CAL. L. REV. 388, 389 (1960). Each of the so-called Prosser torts survives in a largely recognizable fashion in the modern age.

Without any attempt to exact definition, these four torts may be described as follows:

1. Intrusion upon the plaintiff's seclusion or solitude, or into his private affairs;
2. Public disclosure of embarrassing private facts about the plaintiff;
3. Publicity which places the plaintiff in a false light in the public eye; and
4. Appropriation, for the defendant's advantage, of the plaintiff's name or likeness.

Id.

It is easy to imagine the use of a drone resulting in a violation of any one of these rights. A drone could more easily look through an open window and photograph a private act or state. Video feed from a drone could more easily publish an embarrassing private fact about an individual, or cast them in a false light. Aerial photography can easily capture images of likenesses for commercial use without permission.

However, these potential invasions of privacy that accompany the expanding use of drones are

only differences of degree, and not of kind, to pre-existing privacy concerns. For example:

One of the services offered by Google is comprehensive online map access. Google Maps gives users the ability to look up addresses, search for businesses, and get point-to-point driving directions — all plotted on interactive street maps made up of satellite or aerial images. In May 2007, Google introduced "Street View" to its map options. Street View permits users to see and navigate within 360 degree street level images of a number of cities, including Pittsburgh. These images were generated by Google drivers who traversed the covered cities in passenger vehicles equipped with continuously filming digital panoramic cameras.

Boring v. Google, Inc., 598 F. Supp. 2d 695 (W.D. Pa. 2009) (quotation marks and citations omitted), *aff'd in part, rev'd in part*, 362 Fed. Appx. 273, 277, 2010 BL 18432 (3d Cir. 2010), *cert. denied*, 131 S. Ct. 150 (2010).

In 2008, Pennsylvania residents Aaron and Christine Boring ("the Plaintiffs" or "the Borings") sued Google, Inc. with respect to its use of Street View. The Borings, who live on a private road north of Pittsburgh, discovered that colored imagery of their residence, outbuildings, and swimming pool, taken "from a vehicle in their residence driveway . . . without . . . waiver or authorization," had been included on Street View. *Id.* at 699. The Plaintiffs alleged that the road on which their home is located is unpaved and clearly marked with "Private Road" and "No Trespassing" signs. *Id.* Per the Borings, in taking the Street View pictures from their driveway at a point past the signs, and in making those photographs available to the public, Google "significantly disregarded [their] privacy

interests." *Id.* The Borings sued for invasion of privacy, trespass, negligence, and conversion.

The trial court dismissed the action for failure to state a claim. As to the claim of invasion of privacy by intrusion upon seclusion, the trial court noted that:

Liability attaches only when the intrusion is substantial and would be highly offensive to the ordinary reasonable person... In order to show that an intrusion was highly offensive, the plaintiff must allege facts sufficient to establish that the intrusion could be expected to cause mental suffering, shame, or humiliation to a person of ordinary sensibilities. This is a stringent standard. While it is easy to imagine that many whose property appears on Google's virtual maps resent the privacy implications, it is hard to believe that any — other than the most exquisitely sensitive — would suffer shame or humiliation.

Boring, supra, 598 F. Supp. 2d at 699 (quotation marks and citations omitted). The court also noted that the Borings had failed to take advantage of simple tools offered by Google to remove the offending images. *Id.*

As to invasion of privacy by publicity given to private life, "the Amended Complaint is devoid of facts sufficient to indicate that the photographs of the Borings' property revealed private facts such that a reasonable person would be highly offended." *Boring, supra*, 598 F. Supp. 2d at 700. Indeed, "The Plaintiffs do not allege that their situation is unique or even unusual. Yet, it does not appear that the viability of Street [View] has been compromised by requests that images be removed, nor does a search of relevant legal terms show that courts are inundated with — or even frequently consider — privacy claims based on virtual mapping." *Id.* at 700. The trial court

dismissed the Borings' remaining claims, including for trespass, for lack of damages.

The Borings took their case to the Third Circuit Court of Appeals. The Third Circuit affirmed the trial court as to the invasion of privacy claims. However, the Third Circuit reversed the trial court as to the claim of trespass. "Here, the Borings have alleged that Google entered upon their property without permission. If proven, that is a trespass, pure and simple. There is no requirement in Pennsylvania law that damages be pled, either nominal or consequential." *Boring*, *supra*, 362 Fed. Appx. at 281. The Third Circuit remanded with instructions to allow the case on trespass to move forward. Both sides sought *certiorari* from the United States Supreme Court, which was denied. 131 S. Ct. 150 (2010). After all of this, on remand, Google consented to a judgment being entered against it for trespass for \$1 in nominal damages. *Boring v. Google*, U.S. District Court for the Western District of Pennsylvania, docketed as Case 2:08-cv-00694-CB [DE #109], (Dec. 2, 2010).

The *Boring* decisions are largely consistent with decisions more squarely addressing aerial surveillance. While most of these decisions concern Fourth Amendment privacy against government surveillance, they still help inform an overall sensibility in U.S. law with respect to this issue.

For example, in *California v. Ciraolo*, the Court concluded that aerial observation of the defendant's property from a height of 1,000 feet did not violate "an expectation of privacy that is reasonable" because it "took place within public navigable airspace in a physically nonintrusive manner." 476 U.S. 207, 106 S.Ct. 1809, 90 L.Ed.2d 210 (1986). That same year, the Court determined a chemical company had no reasonable expectation of privacy, under the Fourth Amendment, as to aerial photography of the company's industrial complex. *Dow Chemical Company v. United States*, 749 F.2d 307 (6th Cir.1984), *aff'd*, 476 U.S. 227, 106 S.Ct. 1819, 90

L.Ed.2d 226 (1986). Three years later, in *Florida v. Riley*, the Court found that the defendant had no reasonable expectation against visual examination of his property, including by air. 488 U.S. 445, 450, 109 S. Ct. 693, 696, 102 L. Ed. 2d 835, 841 (1989). The Court found, "the police, like the public, would have been free to inspect the backyard garden from the street if their view had been unobstructed. They were likewise free to inspect the yard from the vantage point of an aircraft flying in the navigable airspace as this plane was." *Id.*

Ciraolo, *Dow Chemical Company*, and *Riley* have since been applied countless times to rebut the insistence by defendants that they enjoyed a reasonable expectation of privacy against aerial surveillance. See, e.g., *Elkins v. Elenz*, 2012 BL 182406, 2 (M.D. Fla. July 19, 2012) (holding that a "person traveling in public view has no reasonable expectation of privacy in his movements from one place to another," and that "The aerial surveillance – if real – violated no clearly established constitutional right"); *United States v. Sparks*, 750 F. Supp. 2d 384, 396, 2010 BL 314279, 10 (D. Mass. 2010) ("Sparks had neither a subjective nor objectively reasonable expectation of privacy in the open air parking lot, the exterior of his car, or the movement of his vehicle on public streets. The government's ability to harness advanced technology to assist in effective law enforcement does not change this constitutional analysis"); *State v. Rogers*, 100 N.M. 517, 518, 673 P.2d 142, 143 (Ct. App. 1983) (finding that "defendant did not have a justifiable expectation of privacy with respect to marijuana plants protruding through holes in his greenhouse roof to the extent of their visibility from the air, given that air traffic is not uncommon in the area"); *Burkholder v. Superior Court of Santa Cruz County*, 96 Cal. App. 3d 421, 424, 158 Cal. Rptr. 86, 87 (App. 1st Dist. 1979) (finding no reasonable expectation of privacy against aerial police surveillance at 1,500 to 2,000 feet).

While the United States Supreme Court has materially changed the law on privacy against GPS surveillance in recent years, those changes have hinged on the fact that a GPS tracker is physically attached to the subject's car. See, e.g., *United States v. Jones*, 132 S. Ct. 945, 949, 181 L. Ed. 2d 911, 918 (2012) (finding Fourth Amendment search in installation and monitoring of GPS tracker; "The Government physically occupied private property for the purpose of obtaining information"). These decisions do not impinge on aerial surveillance.

For the time being, some individuals in remote locations might assert that they live in areas where air traffic is highly unusual, and/or rely on the novelty of drones to try to distinguish a unique privacy right. But as a Justice of the Hawaii Supreme Court recently asked, "Soon and inevitably to come are overflights by drones — will they be too numerous in number to sustain a claim of any expectation of privacy?" *State v. Walton*, 133 Haw. 66, 100, n. 27, 324 P.3d 876, 910, 2014 BL 41078, 36 (2014).

State Statutes On Drones And Privacy

Individual U.S. states have been legislating on the issue of drones. These include:

- **Florida.** Fla. Stat. Ann. § 934.50.
- **Idaho.** Idaho Code Ann. § 21-213.
- **Illinois.** 725 ILCS 167/1, *et seq.* and 720 ILCS 5/48-3.
- **Louisiana.** La. Rev. Stat. Ann. 14:337.
- **North Carolina.** N.C. Gen. Stat. Ann. § 15A-300.1 and § 14-401.24.
- **Oregon.** ORS 837.300, *et seq.*

- **Tennessee.** T.C.A. § 39-13-609, § 39-14-405, and § 70-4-302.
- **Texas.** Tex. Gov't Code Ann. § 423.003.
- **Wisconsin.** Wis. Stat. § 175.55, § 941.292, and § 942.10.

These laws concern themselves with a variety of topics. Several of these statutes place restrictions on how law enforcement can collect and use information in criminal investigations. See, e.g., Fla. Stat. Ann. § 934.50 (codifying Florida's Freedom from Unwarranted Surveillance Act). Many prohibit the operation of a weaponized drone. See, e.g., Oregon Revised Statutes, ORS 837.995, *Crimes involving drones; penalties* (prohibiting a drone operator from using it to fire a bullet, shoot a laser at an aircraft, or crash into an aircraft). In North Carolina, "It shall be a Class 1 misdemeanor for any person to fish or to hunt using an unmanned aircraft system." N.C. Gen. Stat. Ann. § 14-401.24. And, in Illinois, it is a crime to "use[] a drone in a way that interferes with another person's lawful taking of wildlife or aquatic life." Illinois Compiled Statutes, 720 ILCS 5/48-3, *Hunter or fisherman interference*.

However, several of the laws enacted do impose restrictions on private use of drones in ways that touch on privacy concerns. For example, in Idaho:

(2)(a) Absent a warrant, and except for emergency response for safety, search and rescue or controlled substance investigations, no person, entity or state agency shall use an unmanned aircraft system to intentionally conduct surveillance of, gather evidence or collect information about, or photographically or electronically record specifically targeted persons or

specifically targeted private property including, but not limited to:

(i) An individual or a dwelling owned by an individual and such dwelling's curtilage, without such individual's written consent;

(ii) A farm, dairy, ranch or other agricultural industry without the written consent of the owner of such farm, dairy, ranch or other agricultural industry.

(b) No person, entity or state agency shall use an unmanned aircraft system to photograph or otherwise record an individual, without such individual's written consent, for the purpose of publishing or otherwise publicly disseminating such photograph or recording.

Idaho Code Ann. § 21-213(2)(a)-(b). The Idaho statute provides a private right of action to “Any person who is the subject of prohibited conduct under subsection (2)” to recover “the greater of one thousand dollars (\$1,000) or actual and general damages, plus reasonable attorney's fees and other litigation costs reasonably incurred.” Idaho Code Ann. § 21-213(3). While there is an exception for “unmanned aircraft system[s] used in mapping or resource management,” this Idaho act still provides substantially more privacy protection than the common law.

In Louisiana, the relevant state statute only protects “targeted facilities” from surveillance by unmanned aircraft systems. For these purposes, a “targeted facility” means “(a) Petroleum and alumina refineries; (b) Chemical and rubber manufacturing facilities; and (c) Nuclear power electric generation facilities.” La. Rev. Stat. Ann. 14:337(3). Louisiana, unlike most of the state drone laws, expressly excludes from its definition

of drones any “satellite orbiting the earth.” La. Rev. Stat. Ann. 14:337(4)(a). Those who intentionally use drones to record targeted facilities face fines up to \$2,000 and a year in jail.

In North Carolina, operators of unmanned aircraft system may not:

(1) Conduct surveillance of:

a. A person or a dwelling occupied by a person and that dwelling's curtilage without the person's consent.

b. Private real property without the consent of the owner, easement holder, or lessee of the property.

(2) Photograph an individual, without the individual's consent, for the purpose of publishing or otherwise publicly disseminating the photograph. This subdivision shall not apply to newsgathering, newsworthy events, or events or places to which the general public is invited.

N.C. Gen. Stat. Ann. § 15A-300.1(b)(1)-(2). In addition:

Any person who is the subject of unwarranted surveillance, or whose photograph is taken in violation of the provisions of this section, shall have a civil cause of action against the person, entity, or State agency that conducts the surveillance or that uses an unmanned aircraft system to photograph for the purpose of publishing or otherwise disseminating the photograph. In lieu of actual damages, the person whose photograph is taken may elect to recover five thousand dollars (\$5,000) for each photograph or video that is published or

otherwise disseminated, as well as reasonable costs and attorneys' fees and injunctive or other relief as determined by the court.

N.C. Gen. Stat. Ann. § 15A-300.1(e).

Oregon, by contrast, focuses its statute on trespass by drone. Oregon allows the owners of real property to sue anyone who “operates a drone that is flown at a height of less than 400 feet over the property” if they have done it before, and the landowner notified them to stop. Oregon Revised Statutes, ORS 837.380. A prevailing plaintiff may recover treble damages and injunctive relief. In an action asking for less than \$10,000, a prevailing plaintiff may also recover attorney’s fees.

Tennessee, like Oregon, has created a special crime of trespass by drone:

(a) A person commits criminal trespass if the person enters or remains on property, or any portion of property, without the consent of the owner.

...

(d) For purposes of this section, “enter” means intrusion of the entire body or when a person causes an unmanned aircraft to enter that portion of the airspace above the owner's land not regulated as navigable airspace by the Federal Aviation Administration.

Tenn. Code Ann. § 39-14-405. However, “Consent may be inferred in the case of property that is used for commercial activity available to the general public or in the case of other property when the owner has communicated the owner's intent that the property be open to the public.” *Id.* Tennessee also criminalizes use of a drone “with the intent to conduct video surveillance of private citizens who are lawfully hunting or fishing without obtaining the written consent of the

persons being surveilled prior to conducting the surveillance.” Tenn. Code Ann. § 70-4-302(a).

Texas has criminalized use of drones “to capture an image of an individual or privately owned real property in this state with the intent to conduct surveillance on the individual or property captured in the image,” unless it is immediately destroyed. Tex. Gov't Code Ann. § 423.003, *et seq.* In addition to the criminal sanction, an operator in violation of this statute faces civil penalties of up to \$5,000 for all images wrongfully captured in one recording and \$10,000 for all images wrongfully disclosed, plus actual damages and attorney’s fees.

Lastly, Wisconsin provides that:

Whoever uses a drone, as defined in s. 175.55 (1) (a), with the intent to photograph, record, or otherwise observe another individual in a place or location where the individual has a reasonable expectation of privacy is guilty of Class A misdemeanor.

Wisconsin Statutes, Wis. Stat. § 942.10, *Use of a drone.*

Federal Law On Drones And Privacy

Given this backdrop of highly varied state legislative activity, which continues unabated, we might expect the federal authorities to intervene and provide some degree of uniformity. One of the relatively few wins for preemption in the privacy area came in 2013, when a California state court dismissed with prejudice claims against Delta Airlines. *See, The People of the State of California v. Delta Air Lines Inc.*, No. 12-526741 (Superior Court for the State of California, City and County of San Francisco, filed December 6, 2012, dismissed May 9, 2013). In that case, the California Attorney General had sued the airline with respect to its mobile

application privacy policy. Per the AG, the app privacy policy did not comply with California's Online Privacy Protection Act. Delta argued that such claims were preempted by the federal Airline Deregulation Act of 1978, which occupied the field of law with respect to airline-related services. While the trial court issued no opinion, it did issue an Order dismissing the case.

However, it does not appear at this time that federal authorities are looking to push out states with respect to setting privacy standards. To be sure, the FAA's existing moratorium on the commercial use of drones (unless specifically permitted) has helped delay the issue of preemption. However, the FAA recently issued a long-awaited proposal for expanding the allowed commercial use of drones. Federal Aviation Administration, Notice of Proposed Rulemaking, *Operation and Certification of Small Unmanned Aircraft Systems*, available at <https://www.faa.gov/uas/nprm/> (Feb. 23, 2015). In so doing, the FAA recognized, and decidedly punted, the issue of privacy, deferring to a multi-stakeholder process and to the states:

The FAA also notes that privacy concerns have been raised about unmanned aircraft operations. Although these issues are beyond the scope of this rulemaking, recognizing the potential implications for privacy and civil rights and civil liberties from the use of this technology, and consistent with the direction set forth in the Presidential Memorandum, Promoting Economic Competitiveness While Safeguarding Privacy, Civil Rights, and Civil Liberties in Domestic Use of Unmanned Aircraft Systems (February 15, 2015), the Department and FAA will participate in the multi-stakeholder engagement process led by the National Telecommunications and Information Administration (NTIA) to assist in this process regarding privacy, accountability, and transparency issues

concerning commercial and private UAS use in the NAS. ***We also note that state law and other legal protections for individual privacy may provide recourse for a person whose privacy may be affected through another person's use of a UAS.***

Id. at p. 36 (emphasis added).

The Presidential Memorandum referred to applies only to federal agencies, and orders them to put in place policies and procedures designed to protect civil liberties with respect to use of drones. The Memorandum also directs the NTIA to launch a multi-stakeholder process to develop voluntary standards. On March 4, 2015, the NTIA announced "it is seeking comment on a new multi-stakeholder process aimed at developing privacy best practices for the commercial and private use of unmanned aircraft systems (UAS)." *NTIA Seeks Comment on Process for Developing Best Practices for Commercial and Private Use of Unmanned Aircraft Systems*, available at <http://www.ntia.doc.gov/press-release/2015/ntia-seeks-comment-process-developing-best-practices-commercial-and-private-use-u>.

In the RFC, NTIA is seeking input on questions that could frame the multi-stakeholder discussions, including:

- Do some UAS-enabled commercial services raise unique or heightened privacy issues?
- What specific best practices would mitigate the most pressing privacy challenges while supporting innovation?
- What information should commercial UAS operators make public?

- How can UAS operators ensure that oversight procedures for commercial and private UAS operation comply with relevant policies and best practices?
- Should discussions be divided to address the needs of different aircraft sizes or commercial uses?

Id. In short, the federal discussion of privacy rules relating to drones is just getting started.

Ultimately, the Federal Trade Commission is likely to play a role in developing those rules. The FTC is the primary federal regulator on data privacy issues. The FTC acts under the Federal Trade Commission Act (the “FTCA”), 15 U.S.C.A. § 45(a)(1), *et seq.* The FTCA prohibits businesses from using “deceptive” or “unfair” acts or practices in commerce. The FTC has engaged in dozens of investigations and settlements concerning privacy and data security. See, e.g., Prepared Statement of the Federal Trade Commission on *Data Breach on the Rise: Protecting Personal Information From Harm*,

before the Committee on Homeland Security and Governmental Affairs, United States Senate, Washington, D.C. (April 2, 2014), and Federal Trade Commission, *2014 Privacy and Data Security Update* (June 2014) (summarizing recent FTC enforcement activity). While the FTC has not yet entered into a Consent Order or prosecuted a company with respect to personal information collected via drone, it is likely only a matter of time.

The Bottom Line

The common law of privacy does not pose any special barriers to responsible commercial use of drones. However, the state legislatures are imposing a patchwork of trespass and anti-surveillance measures that operators of commercial drones must be careful to follow. Federal rulemaking is still proceeding, and there are no signs of any appetite by federal authorities to preempt state drone laws. Proceed with caution.

-- CHAPTER 11 --

Privacy (UK)

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It is only a matter of time before invasive images taken by drones are being offered for sale to the press. The rich and famous may no longer be able to take refuge in their gated mansions, penthouses and private yachts, as the use of drones will make them easily accessible to cameras. Hundreds of paparazzi are probably honing their flying skills as we write this.

Though it is possible that new legislation could be introduced to deal with the use of invasive images taken by drones, it is more likely that established legal principles will be applied instead.

Legal Principles

In England, there is no general tort of invasion of privacy, and no self-standing law of “image rights” that can be deployed by people who want to stop the publication of invasive photos⁹⁸. However, since the enactment of the Human Rights Act 1998, claims for infringement of privacy have been dealt with under the established law on breach of confidence, though this new ‘branch’ has been renamed ‘misuse of private information’⁹⁹.

The law in this area is based on both Articles 8 and 10 of the European Convention on Human Rights (which was brought into effect in England via the Human Rights Act 1998). Article 8 provides that “everyone has the right to respect for his private and family life, his home and his correspondence”. Article 10 provides that “everyone has the right to freedom of expression”. Both Articles 8 and 10 are rights which can be qualified pursuant to the respective provisions of Article 8(2) and Article 10(2) (for example, where qualification is necessary for

national security, public safety, or the protection of the rights and freedoms of others). The English court must look at the judgments of the European Court of Human Rights (‘ECHR’) to determine the scope of Articles 8 and 10, and when it might be permissible to restrict the rights embodied therein.

Before considering the tests to be applied, it is worth noting that any claim is likely to be brought against the publisher of any photographs, not the photographer. It is not contrary to the English law of misuse of private information to take private photographs using drones; only to misuse the private information contained therein.

The basic test for establishing whether there has been a misuse of private information is a two-stage one:

(1) Does the claimant have a reasonable expectation of privacy?

This is a broad test which takes into account all the circumstances of the case, including “the attributes of the claimant, the nature of the activity in which the claimant was engaged, the place at which it was happening, the absence of consent and whether it was known or could be inferred, the effect on the claimant and the circumstances in which and the purposes for which the information came into the hands of the publisher”¹⁰⁰.

(2) If there is a reasonable expectation of privacy, how should the balance be struck as between the individual’s right to privacy on the one hand and the publisher’s right to publish on the other?

Guidance on how to conduct the balancing exercise between Article 8 and Article 10 rights was set out by Lord Steyn in *In Re S*¹⁰¹. He identified the following four principles to be applied in what he labelled as the 'ultimate balancing test'.

- Neither article has precedence over the other
- Where the values under the two articles are in conflict, an intense focus on the comparative importance of the specific rights being claimed in the individual case is necessary
- The justifications for interfering with or restricting each right must be taken into account
- The proportionality test must be applied to each

The most recent guidance from the ECHR on the balancing exercise was given in the cases of *Axel Springer A.G. v Germany*¹⁰² and *Von Hannover v Germany (No 2)*¹⁰³. The ECHR had previously taken a reasonably strong position in favour of privacy, but these two judgments – handed down on the same day – were welcomed by the media as tipping the balance back in favour of freedom of expression. The key criteria identified by the ECHR in these cases as being relevant to the balancing exercise are as follows:

- The contribution to a debate of general interest
- The prior conduct of the person concerned
- The content, form and consequences of the publication
- The circumstances in which any photos were taken

- The method of obtaining the information and its veracity
- The severity of the sanction to be imposed

Application of Legal Principles to Photographs

The publication of private photographs can often be more upsetting than the publication of other types of private information. Both the English Court and ECHR appear to recognise this. In *Douglas v Hello! (No. 3)*, the English Court of Appeal said that “special considerations attach to photographs in the field of privacy ... As a means of invading privacy, a photograph is particularly intrusive”¹⁰⁴. Mr Justice Dingemans expanded on this in *Weller v Associated Newspapers Limited*:

“The particular importance attached to photographs in the decided cases is, in my judgment, a demonstration of the reality that there is a very relevant difference in the potentially intrusive effect of what is witnessed by a person on the one hand, and the publication of a permanent photographic record on the other hand”.¹⁰⁵

Similarly, the ECHR has recognised the particular impact of photographs. In *Reklos v Greece*¹⁰⁶, the ECHR stated that “a person’s image constitutes one of the chief attributes of his or her personality, as it reveals the person’s unique characteristics and distinguishes the person from his or her peers”.

As noted above, in *Axel Springer* and *Von Hannover (No. 2)*, the ECHR stated that one of the key factors to take into account when balancing Articles 8 and 10 is the circumstances in which any photographs are taken. Accordingly, if photographs are captured by drones, this will be something that is brought into consideration and could affect the outcome of any claim. In *Von Hannover (No. 2)*, the ECHR stated as follows:

“...the context and circumstances in which the published photos were taken cannot be disregarded. In that connection regard must be had to whether the person photographed gave their consent to the taking of the photos and their publication...or whether this was done without their knowledge or by subterfuge or other illicit means. Regard must also be had to the nature or seriousness of the intrusion and the consequences of publication of the photo for the person concerned.”¹⁰⁷

Consent, Knowledge and Subterfuge

If, for example, a person consents to a drone being flown over their property to take photographs of them, then there is unlikely to be an infringement of privacy (unless there is some issue regarding the nature of the consent). Where the same activity is carried out with the person's knowledge but not their consent, the position is slightly more difficult and likely to depend on the exact circumstances. In some cases, it could be argued that prior knowledge constitutes deemed consent. For example, a person who continues to engage in private activities in their garden despite being told a drone will be flying over their property might be held to have impliedly consented to the photographs being taken. On the other hand, someone who knows about the drone only because they see it taking the photos should not be in the same position as that person, and should probably not be treated any differently from someone who has no knowledge of the drone at all.

As drones can capture images from a considerable height, it is quite possible that the subjects of the images will not notice the photos being taken. In such circumstances, the photographs may well be regarded as having been taken by 'subterfuge or other illicit means'. The suggestion in *Von Hannover (No. 2)* is that

images taken by such means are more likely to amount to an infringement of privacy.¹⁰⁸

It might be thought that photographs taken by subterfuge or illicit means will always amount to an interference with the individual's right to privacy. However, as the judgment in *Lillo-Stenberg and Saether v Norway*¹⁰⁹ demonstrates, this is not always the case. The ECHR was required to consider whether the publication in a Norwegian magazine of photographs taken at a celebrity wedding amounted to a breach of Article 8. Mr Lillo-Stenberg and Ms Saether, a well-known Norwegian musician and actress, married outdoors on a small islet in the Oslo fjord. The photographs were taken with a telephoto lens from about 250 metres away without the couple's knowledge or consent.

Applying the test in *Von Hannover (No. 2)*, the court held that there had been no breach of Article 8. The applicants were well known and their wedding was of general interest to the public. With regard to the circumstances in which the photographs were taken, the fact that this was done surreptitiously did not automatically mean there was a breach of Article 8.

The ECHR seemed to place considerable weight on the fact that the wedding was in a public place, and this was one of the factors that seemed to override any concern about the use of long lens photography. The court said that “the situation would have been different if the photographs had been of events taking place in a closed area, where the subjects had reason to believe that they were unobserved”.

Public and Private Places

The reason why drones are both frightening and exciting (depending on one's viewpoint) is that they enable images to be taken in places that could not previously be reached. If a drone has enabled access to an otherwise 'private' place (such as a penthouse apartment or a yacht off

the coast), that will be a factor to consider in any privacy claim. As the *Lillo-Stenberg* case shows, the distinction between public and private places still has a role to play in privacy cases, but it will not always be determinative. After conducting the balancing exercise between Articles 8 and 10, and taking other circumstances of the case into account, a court could hold that photos taken in a public place infringe privacy, or that photos taken in a private place do not.¹¹⁰

The Bottom Line

It is not possible to say whether the publication of photographs taken by drones will or will not amount to a breach of rights to privacy. The approach taken by the ECHR and the English courts involves considering all the circumstances of a case, and the fact that photographs are taken by drone will be just one factor weighing in the balance. If the drone photography was carried out illicitly, without the knowledge or consent of the subject, this might encourage a court to lean towards finding a breach of Article 8 rights; but other important aspects of the case could tip the balance the other way. For example, the information shown in the images may contribute to an important debate of public interest, or the activity depicted may not properly be regarded as private. No single factor will ever be decisive, including the fact that images have been taken by drones, and the ultimate outcome will be decided by weighing all the relevant aspects of the case.

-- CHAPTER 12 --

Product Claims and Litigation

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As the personal and commercial use of drones expands, so does opportunity for personal injury. Injury may arise from accidents involving the operation, or misuse, or malfunction of unmanned aerial systems. This chapter addresses the nature of litigation likely to arise from accidents or mishaps involving the use of drones.

Accidents and the Investigation Process

When injury or death is associated with the use of a machine or vehicle, such as a drone, the question follows: was the injury caused by human error, or by some defect in the machine?

In the United States, the National Transportation Safety Board (NTSB) has jurisdiction and authority to investigate accidents involving aircraft. On April 25, 2006, the NTSB began its first investigation of a drone-related accident – in which a turboprop-powered Predator B operated on a surveillance mission by the U.S. Customs and Border Protection crashed near Nogales, Arizona.¹¹¹ Although no one was injured in this accident, the drone was substantially damaged, and the NTSB issued a number of safety recommendations to the Federal Aviation Administration (FAA) relating to the use of unmanned aircraft systems.¹¹² In an opinion dated November 18, 2014, the NTSB reasoned, pursuant to the plain language 49 U.S.C. section 40102(a)(6) and 14 C.F.R. section 1.1, that an “aircraft” is any “device” “used for flight in the air” – which definition includes “any aircraft, manned or unmanned, large or small,” which includes drones.¹¹³

The NTSB’s regulatory definition of “aircraft accident” has been amended to include “unmanned aircraft accident”:

“Unmanned aircraft accident” means an occurrence associated with the operation of any public or civil unmanned aircraft system that takes place between the time that the system is activated with the purpose of flight and the time that the system is deactivated at the conclusion of its mission, in which:

- (1) Any person suffers death or serious injury; or
- (2) The aircraft has a maximum gross takeoff weight of 300 pounds or greater and sustains substantial damage.

See 49 C.F.R. § 830.2.¹¹⁴ Requirements to report accidents resulting in serious injuries¹¹⁵ thus includes drone accidents, regardless of the size of the drone or the purpose of its operation, such that the NTSB may exercise its jurisdiction to investigate an accident.¹¹⁶ An NTSB investigation of an “unmanned aircraft accident” may involve participation of the aircraft manufacturers or component manufacturers, or other parties with information integral to the investigation.¹¹⁷ Note, however, that the injured or family of those injured often are not included as parties to the investigation process, although the NTSB investigator will often communicate with the injured persons.

The injured will often turn to litigation to determine who should compensate them for their loss. By filing suit, the litigation process serves as

a further investigative tool for the injured to determine who should be to blame for a mishap. However, the timing and pace of such litigation may be impacted by the timing and release of information by the NTSB, if the accident involved serious injury or death, or a drone weighing more than 300 pounds that has sustained substantial damage.

Parties to an NTSB investigation may not disclose information from the investigation to others until the NTSB issues its final report: 49 C.F.R. section 831.13 prohibits dissemination of information concerning the investigation until after the NTSB Investigator-in-Charge releases the parties and party participants from the restrictions on dissemination of investigative information. However, following release of information, no party is permitted to assert a claim of privilege for information or records received as a result of participation in the NTSB investigation.

As NTSB investigations focus on improving safety, the NTSB's *analysis* of factual information and its determination of probable cause of a mishap cannot be used as evidence in litigation arising out of the accident being investigated. Whereas 49 U.S.C. section 1154(b) provides "No part of a report of the Board, related to an accident or an investigation of an accident, may be admitted into evidence or used in a civil action for damages resulting from a matter mentioned in the report," 49 C.F.R. section 835.2 by contrast provides that "[t]he Board does not object to, and there is no statutory bar to, admission in litigation of factual accident reports. In the case of a major investigation, group chairman factual reports are factual accident reports." Therefore, the factual information contained and released by the NTSB following issuance of its final report often contains critical information that may be used in parties to a litigation that subsequently arises from an accident.

Likely Parties to Drone-Related Accident Litigation

In traditional U.S. aviation accident litigation, plaintiffs are often the pilot or passengers of an accident aircraft, or their survivors or representatives if it is a fatal accident. Drones, by their nature unmanned, would not have injured pilots or passengers. The anticipated plaintiffs to cases involving drones therefore may involve injured bystanders, property owners, occupants of other aircraft (in the event of a collision with a manned aircraft), or operators or visual observers of drones who may have been injured by the use.

Litigation arising from accidents may involve claims of negligence or recklessness by the operator or others involved in the use of the drone. Additionally, product liability claims may be alleged against those involved in the design, manufacture, assembly, distribution, sale, or marketing of the drone.

Although the product manufacturer is often a key target of product liability claims, manufacturers of component parts of drones are often also named as defendants to suits. In the case of aviation product liability litigation, in addition to an airframe manufacturer, those companies that supplied critical component parts – such as avionics, engines, and other components that affect the operation of the aircraft – may be drawn into suits arising from a mishap. With respect to drones, additional components may be implicated, including those that may affect the operation or control of the aircraft by a remote operator, such as cameras, global positioning satellite (GPS) systems, antennas, and other components or systems potentially involved in an operator's loss of control, or inability to accurately control the aircraft.

Product Liability Claims

Product liability actions in the United States arise from an alleged defect of a product, either because of a defect in the design or the

manufacture of the product, or relating to a lapse in the warnings pertaining to the use of the product, or by a breach of a warranty regarding the product and its sale. Each state's product liability scheme is unique, and is molded by the case law of the governing jurisdiction.

There are no product liability claims specific to drones, or to any aviation products for that matter. The various common law or statutory product liability causes of actions, described generally below, may be alleged regardless of the nature of the product.

Some states have product liability schemes that comprise common law negligence claims, strict liability claims and breach of warranty claims:

- *Negligence* claims involve whether (1) a duty is owed to the plaintiff; (2) there is a breach of that duty; (3) the breach was the actual and proximate cause of the injury; and (4) actual damages were suffered by the plaintiff as a result of the breach.
- *Strict liability* claims may impose liability even where there is no negligence. Section 402A of the Restatement (Second) of Torts provides strict liability for product "defects": a plaintiff must specifically prove that (1) the product was defective and (2) the defect in the product caused the injury.¹¹⁸ Some states also require the plaintiff to prove that the defect made the product "unreasonably dangerous." Courts in several states have construed defects to include failure to provide warnings.
- *Breach of warranty* claims, which are based in contract, rather than tort, involve both express warranties and implied warranties (such as the implied warranty of fitness for a particular purpose, or the implied warranty of merchantability). States differ concerning

whether privity between the plaintiff and the defendant is required for warranty claims.

Other states have a comprehensive product liability statute, which may subsume product liability-related claims into a single cause of action. Many of product liability acts follow, at least in part, the Model Uniform Product Liability Act, promulgated by the U.S. Department of Commerce.

Consumer fraud actions, or common law fraud claims, related to the sale of the product also may be alleged. Actions based upon fraud are founded on false or misleading representations by manufacturer or seller, which, reasonably relied upon, caused damage to the plaintiff.

Depending on the pleading requirements of the jurisdiction, some level of particularity in alleging the claimed defect, breach, or misrepresentation, should be required. If no particular defect or breach is identified, the complaint is susceptible to a motion to dismiss. Additionally, regardless of the cause of action, product liability claims require a plaintiff to prove, by the preponderance of the evidence, that the alleged breach or defect "caused" – actually and proximately – the injuries for which the plaintiff seeks compensation.

Defenses Relevant to Drone Accident Litigation

There are number of defenses that a manufacturer or other product liability defendant may express in order to avoid or lessen its liability in accident-related cases, some of which may prove particularly applicable to cases involving drones.

The contributory or comparative negligence of the plaintiff or other parties to the litigation must be considered. Where causation is at issue, the negligence of the operator, the operator's employer, and others who came into contact with the drone (such as the seller, any persons who

may have maintained or altered the drone) may be implicated and should be considered. Such defense should examine any intervening and superseding cause for the plaintiff's injury and damages. Operator error or misuse, in particular, is sure to be at issue in drone-related litigation. Operator negligence is not limited to the operation of the drone. Operators have an obligation to ensure that the area in which they are operating is clear of unauthorized persons and that all authorized personnel have received a safety briefing.

States differ in how comparative negligence and contribution claims affect tort claims, but there often is some manner of apportionment or allocation of fault among parties whose fault may have contributed to the accident, the injury, or some aspect of damages claimed by the plaintiff. Some states allow allocation of fault to among those responsible who are not parties to the litigation, but whose acts or omissions contributed to the injuries alleged.

Proof of some defenses requires the court to look carefully at others' acts and omissions with respect to operation, use, or maintenance of the drone at issue:

- *Sophisticated user*: the drone's operator may be considered a sophisticated user such that he/she should have taken appropriate precautions, and was, or should have been, aware of the dangers, if any, associated with use of the drone.
- *Alteration*: the operator (or another party over whom the manufacture does not exercise control) may have materially altered, modified and/or improperly maintained or repaired the drone following the time of its delivery.
- *Misuse*: the drone was being put, at the time of the accident, to uses or purposes for which it was not designed, manufactured or sold, and such uses or

purposes were not reasonably foreseeable to the manufacturer.

- *Failure to exercise due care*: the drone operator (or the plaintiff) failed to exercise due care on his/her own behalf, or voluntarily elected to subject him/herself to a known risk.

Other defenses require consideration of the drone's design, and the industry or regulatory context in which it was designed and manufactured, to determine the appropriate standard of care:

- *State of the art*: a manufacturer may demonstrate that the drone was designed, manufactured, tested, certified, sold and delivered in conformance with technology that was the then-applicable "state of the art."
- *Compliance with standards*: a manufacturer may demonstrate that the drone was designed, manufactured, tested, certified, sold and delivered with the then-prevailing industry standards and with the then-applicable government regulations.

The Bottom Line

As of early 2015, we simply do not have a body of cases involving civil drone accidents to determine how courts will approach issues of liability in drone-related product claims. Additionally, regulations concerning how drones are operated, and industry standards concerning the design and manufacture of drones, are still evolving. However, we anticipate that many of the same claims and defenses at issue in aviation litigation should inform similar claims relating to drone accident litigation.

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- ¹¹⁴ Relating to “NOTIFICATION AND REPORTING OF AIRCRAFT ACCIDENTS OR INCIDENTS AND OVERDUE AIRCRAFT, AND PRESERVATION OF AIRCRAFT WRECKAGE, MAIL, CARGO, AND RECORDS”
- ¹¹⁵ “Serious injury” means any injury that: (1) Requires hospitalization for more than 48 hours, commencing within seven days from the date of the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) involves any internal organ; or (5) involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface. 49 C.F.R. § 830.2.
- ¹¹⁶ See NTSB, *The Investigative Process*, available at <http://www.nts.gov/investigations/process/Pages/default.aspx>
- ¹¹⁷ Parties to an investigation must complete a Certification of Party Representative, which requires acknowledgement that “participation is not on behalf of either claimants or insurers, and that, although factual information obtained as a result of participating in the NTSB investigation may ultimately be used in litigation (at the appropriate time, and in a manner that is not inconsistent with the provisions of 49 C.F.R. § 831.13 and 49 U.S.C. § 1154), ... participation is to assist the NTSB safety investigation and not for the purposes of preparing for litigation.”
- ¹¹⁸ The Restatement (Third) of Torts, on the other hand, applies strict liability rules to cases involving claims of manufacturing defect, but applies negligence standards to other claims.



APPENDIX 1

Served: March 6, 2014

UNITED STATES OF AMERICA
NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF ADMINISTRATIVE LAW JUDGES

MICHAEL P. HUERTA, *
ADMINISTRATOR, *
FEDERAL AVIATION ADMINISTRATION, *

Complainant, *

Docket CP-217

v. *

RAPHAEL PIRKER, *

Respondent. *

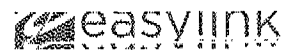
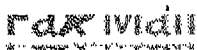
SERVICE:

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Kramer, Levin, Naftalis & Frankel, LLP
117 Avenue of the Americas
New York, NY 10036
(Certified Mail and FAX)

Brendan A. Kelly, Esq.
Office of the Regional Counsel
FAA Eastern Region
1 Aviation Plaza
Jamaica, NY 11434
(FAX)

DECISIONAL ORDER

This matter is before the Board upon the Appeal of Raphael Pirker (herein Respondent), from an Order of Assessment, which seeks to assess Respondent a civil penalty in the sum of \$10,000.00 U.S. dollars. The Order was issued against Respondent by the Administrator, Federal Aviation Administration (FAA), herein Complainant, and that Order, as provided by Board Rule, serves as the Complaint in this action.



The Complaint is comprised of eleven Numbered Paragraphs of allegations.¹ In the first paragraph, it is alleged that Respondent acted on or about October 17, 2011, as pilot in command of "a Ritewing Zephyr powered glider aircraft in the vicinity of the University of Virginia (UVA) Charlottesville, Virginia..." The next allegation Paragraph avers that that aircraft, "...is an Unmanned Aircraft System (UAS)..."² It is further alleged that Respondent's flight operation was for compensation, in that payment was received for video and photographs taken during that flight. As a consequence of those allegations, and the remaining factual allegations set forth in the Complaint, it is charged that Respondent acted in violation of the provisions of Part 91, Section 91.13(a), Federal Aviation Regulations (FARs).³

Respondent has filed a Motion to Dismiss, seeking dismissal upon the assertion that the Complaint is subject to dismissal, as a matter of law, in the absence of a valid rule for application of FAR regulatory authority over model aircraft flight operations.

Complainant has submitted a Response⁴ in opposition, arguing that the Complaint is not deficient in that, as the non-moving Party, the allegations of the Complaint must be assumed true, and the Complaint evaluated in manner most favorable to Complainant. This argument is premature. Respondent's Motion does not challenge the sufficiency of the Complaint, and stipulates therein that, solely for purposes of his Motion, the Complaint's allegations are to be assumed as true. Any dispute and argument as to the efficacy of the Complaint must be deferred, pending resolution of the threshold issue of Complainant's authority to exercise FAR regulatory action over model aircraft operations.

14 C.F.R. Part 1, Section 1.1 states as the FAR definition of the term "Aircraft" a "...device that is used or intended to be used for flight in the air..." And Part 91, Section 91.1 states that Part, "...prescribes rules governing operation of aircraft..." Premised upon those FAR provisions and

¹ See Attachment 1, Order of Assessment, for a full statement of the allegations.

² See Attachment 2 Specifications: Ritewing Zephyr 11.

³ Part 91, Section 91.13(a) provides: No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.

⁴ The Parties were granted leave to file supplemental Briefs, and all submissions have been considered.

those of 49 U.S.C. Section 40102(a)(6)⁵, Complainant argues that Respondent was operating a device or contrivance designed for flight in the air and, therefore, subject to Complainant's regulatory authority. The term, "contrivance" is used in the 49 U.S.C. Section 40102(a)(6) definition, "aircraft", whereas Part 1, Section 1.1, defines an "aircraft" as a "device"; however, the terms are basically synonymous, as both refer to an apparatus intended or used for flight.⁶

It is argued by Complainant that, under either definition of the term "aircraft", the definition includes within its scope a model aircraft. That argument is, however, contradicted in that Complainant FAA has, heretofore, discriminated in his interpretation/application of those definitions.

Complainant has, historically, in their policy notices, modified the term "aircraft" by prefixing the word "model", to distinguish the device/contrivance being considered. By affixing the word "model" to "aircraft" the reasonable inference is that Complainant FAA intended to distinguish and exclude model aircraft from either or both of the aforesaid definitions of "aircraft".

To accept Complainant's interpretive argument would lead to a conclusion that those definitions include as an aircraft all types of devices/contrivances intended for, or used for, flight in the air. The extension of that conclusion would then result in the risible argument that a flight in the air of, e.g., a paper aircraft, or a toy balsa wood glider, could subject the "operator" to the regulatory provisions of FAA Part 91, Section 91.13(a).

Complainant's contention that a model aircraft is an "aircraft", as defined in either the statutory or regulatory definition, is diminished on observation that FAA historically has not required model aircraft operators to comply with requirements of FAR Part 21, Section 21.171 et seq and FAR Part 47, Section 47.3, which require Airworthiness and Registration Certification for an aircraft. The reasonable inference is not that FAA has overlooked the requirements, but, rather that FAA has distinguished model aircraft as a class excluded from the regulatory and statutory definitions.

⁵ 49 U.S.C. Section 40102(a)(6): Aircraft means any contrivance invented, used, or designed to navigate or fly in the air.

⁶ Webster's New Dictionary of Synonyms, "contrivance" at 188; "device" at 236. Roget's Thesaurus 4th Ed. At 348.1.

While Complainant states in his Sur-Reply Brief that he is not seeking herein to enforce FAA Policy Statements/Notices concerning model aircraft operation, a consideration of those policy notices is informative.⁷

Complainant FAA issued Advisory Circular (AC) AC 91-57, entitled "Model Aircraft Operating Standards", stating the purpose as "...encouraging voluntary compliance with safety standards for model aircraft operators..."⁸ That Complainant FAA issued an AC urging model aircraft operators to voluntarily comply with the therein stated "Safety Standards"⁹ is incompatible with the argument that model aircraft operators, by application of the statutory and regulatory definition, "aircraft" were simultaneously subject to mandatory compliance with the FARs and subject to FAR regulatory enforcement.

That FAA has not deemed every device used for flight in the air to be within the FAR Part 1, Section 1.1 definition, and thus subject to provisions of Part 91 FARs, is illustrated on consideration of the FAA regulatory treatment of Ultralights.

An Ultralight, a device used for flight in the air, is nevertheless governed by the provisions of Part 103 FARs, and whereupon meeting the criteria stated in Section 103.1 is defined, not as an "aircraft", but as an "Ultralight Vehicle", subject only to the particular regulatory provisions of Part 103, FARs.

It is concluded that, as Complainant: has not issued an enforceable FAR regulatory rule governing model aircraft operation; has historically exempted model aircraft from the statutory FAR definitions of "aircraft" by relegating model aircraft operations to voluntary compliance with the guidance expressed in AC 91-57, Respondent's model aircraft operation was not subject to FAR regulation and enforcement.

As previously noted, Complainant has disclaimed that, in this litigation, he is seeking to enforce FAA UAS policy; however, the Complaint asserts that the "aircraft" being operated by Respondent "is an Unmanned Aircraft System (UAS)". Since the classification UAS does not appear in the FARs, it is necessary to examine the FAA policy for the existence of a rule imposing regulatory authority concerning UAS operations.

⁷ FAA Policy Notices are addressed subsequently.

⁸ Attachment 3, Advisory Circular, AC 91-57, June 9, 1981.

⁹ Id. at Paragraph 3.

FAA issued on September 16, 2005, Memorandum AFS-400 UAS Policy 05-01 (Policy 05-01)¹⁰, which was subsequently cancelled, revised, and re-issued on March 13, 2008, as Interim Operational Approval Guidance 08-01 (Guidance 08-01).¹¹ The stated purpose of those Memoranda was to issue guidance, not to the general public, but, rather as internal guidance to be used by the appropriate FAA personnel.¹² Significantly, both Memoranda specifically eschew any regulatory authority of the expressed policy, stating respectively that, “this policy is not meant as a substitute for any regulatory process...”¹³

As policy statements of an agency are not – aside from the fact that the guidance policy therein expressed is stated as for internal FAA use – binding upon the general public¹⁴, and as any regulatory effect is disclaimed, these Policy Memoranda cannot be, and are not, found as establishing a valid rule for classifying a model aircraft as an UAS, or as furnishing basis for assertion of FAR regulatory authority vis á vis model aircraft operations.

On February 13, 2007, FAA Notice 07-01 was published in the Federal Register with the stated purpose/action of serving as “Notice of Policy; opportunity for feedback...”¹⁵ Under the Section captioned “Policy Statement”, it is stated that for an UAS to operate in the National Airspace System (NAS), specific authority is required, and that, pertinent here, for civil aircraft that authority is a special airworthiness certificate. It excludes from that requirement “modelers” – recreational/sport users – and the operational safety authority is iterated as AC 91-57. It further provides that when the model aircraft is used for “business purposes”¹⁶ – AC 91-57 is not applicable, as by such use the model aircraft is deemed an UAS, requiring special airworthiness

¹⁰ Title: Unmanned Aircraft Systems Operations in the U.S. National Airspace System – Interim Operational Approval Guidance.

¹¹ Title: Unmanned Aircraft Systems Operations in the U.S. National Airspace System.

¹² Policy 05-01 at 1; Guidance 08-01 at 2.

¹³ Policy 05-01 at 1; Guidance 08-01 at 2,3.

¹⁴ Syncor Int’l Corp. v. Shalala, 56F.3d 592, 595 (5th Cir. 1995).

¹⁵ 72 Fed. Reg. 6689 (2007).

¹⁶ Id at 6690 (2007), Policy Statement “business” is not defined, so it is unclear if the term is limited to ongoing enterprises held out to the general public, or if it includes a one-time operation for any form or amount of compensation.

certification.¹⁷ In my view, the iteration of the authority of AC 91-57, even though restricted here, undercuts the contention that model aircraft were considered an aircraft as defined in the FARs, or the Code, and subject to Part 91 FAR regulation.

Notice 07-01 expressly states that its action/purpose is to set forth the current FAA policy for UAS operations, and the requirements are stated, as noted above, under the Section captioned "Policy Statement". As self-defined as a statement of policy, it cannot be considered as establishing a rule or enforceable regulation, since, as discussed supra, policy statements are not binding on the general public.

As Notice 07-01 was published in the Federal Register, even though stated as a "Notice of Policy", it could be argued that it could be considered as legislative rulemaking purporting to set out new, mandatory requirements/limitations requiring public compliance.

Notice 07-01 does not, however, meet the criteria for valid legislative rulemaking, as it was not issued as a Notice of Proposed Rulemaking (NPRM), and if intended to establish a substantive rule, it did not satisfy the requirements of 5 U.S.C., Section 553(d), which requires publication of notice not less than 30 days before the effective date.¹⁸ As it is shown as being issued on February 6, 2007, and published as a Notice of Policy February 13, 2007, it fails this requirement.

It is significant that upon comparison of the allegations in the Complaint with the statements put forward in the Policy Statement Section of Notice 07-01, that the allegations made in Complaint Paragraphs 2, 5, and 6, mirror the Policy Notice provisions. That fact contradicts Complainant's assertion that Policy Notice 07-01 plays no part in this litigation. Those allegations are also found as being inconsistent with the assertion that model aircraft were always included in the FAR Part 1, Section 1.1 definition, and thus subject to Part 91 FAR regulation. If so, it was unnecessary to allege – as in Paragraphs 5 and 6 – flight for compensation/payment which appears to be for the purpose of re-classifying Respondent's model aircraft as an UAS within the terminology of Notice 07-01.¹⁹

¹⁷ 72 Fed. Reg. 6690 (2007).

¹⁸ 5 U.S.C. Section 553 - Rulemaking. The exceptions stated in Section 553(d) are not applicable, particularly Exception (2), in that Notice 07-01 does not interpret an existing rule or policy statement – it is a statement of current policy.

¹⁹ On Complainant's theory, Respondent could be charged directly as operating an "aircraft" contrary to the provisions of Section

Congress enacted the FAA Modernization Re-authorization and Reform Act of 2012 (2012 Act), and therein addressed in Subtitle B, Unmanned Aircraft Systems.²⁰ This legislation postdates the events at issue herein; however, the language of provisions of the 2012 Act is instructive.

The 2012 Act requires FAA, through the Secretary of Transportation, to develop a plan for integration of civil UAS into the NAS, specifying that the plan contain recommendations for rulemaking to define acceptable standards for operation and certification of civil UAS.²¹ The 2012 Act further, in the Subsection Rulemaking, specifies a date for publication of “(1) a final rule on small UAS...” to permit their operation in the NAS.²² The 2012 Act also contains a provision stating that the Administrator, FAA, “...may not promulgate any rule or regulation regarding a model aircraft...”, where the model aircraft satisfies the criteria stated therein.²³ It is a reasonable inference that this language shows that, at the time of enactment of the 2012 Act, the legislators were of the view there were no effective rules or regulations regulating model aircraft operation, otherwise, rather than calling for enactment of such, the 2012 Act would have called for action to repeal, amend, or modify the existing rules or regulations, and not require a date for issuance of a final rule.

I find that:

1. Neither the Part 1, Section 1.1, or the 49 U.S.C. Section 40102(a)(6) definitions of “aircraft” are applicable to, or include a model aircraft within their respective definition.²⁴
2. Model aircraft operation by Respondent was subject only to the FAA’s requested voluntary compliance with the Safety Guidelines stated in AC 91-57.

91.13(a). Compensation/payment could arguably then be a factor for resolving: careless or reckless operation; appropriate sanction/severity of a civil penalty.

²⁰ Public Law 112-95, 126 Stat. 72 (February 14, 2012).

²¹ Id at Section 332(a)(1)(2)(1)(b)(i).

²² Id at Section 332(b), Rulemaking.

²³ Id at Section 332(a).

²⁴ Accepting Complainant’s overreaching interpretation of the definition “aircraft”, would result reductio ad absurdum in assertion of FAR regulatory authority over any device/object used or capable of flight in the air, regardless of method of propulsion or duration of flight.

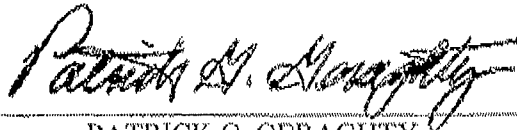
3. As Policy Notices 05-01 and 08-01 were issued and intended for internal guidance for FAA personnel, they are not a jurisdictional basis for asserting Part 91 FAR enforcement authority on model aircraft operations.
4. Policy Notice 07-01 does not establish a jurisdictional basis for asserting Part 91, Section 91.13(a) enforcement on Respondent's model aircraft operation, as the Notice is either (a) as it states, a Policy Notice/Statement and hence non-binding, or (b) an invalid attempt of legislative rulemaking, which fails for non-compliance with the requirement of 5 U.S.C. Section 553, Rulemaking.
5. Specifically, that at the time of Respondent's model aircraft operation, as alleged herein, there was no enforceable FAA rule or FAR Regulation applicable to model aircraft or for classifying model aircraft as an UAS.²⁵

Upon the findings and conclusions reached, I hold that Respondent's Motion to Dismiss must be **AFFIRMED**.

IT IS ORDERED THAT:

1. Respondent's Motion to Dismiss be, and hereby is: **GRANTED**.
2. Complainant's Order of Assessment be, and hereby is: **VACATED AND SET ASIDE**.
3. This proceeding be, and is: **TERMINATED WITH PREJUDICE**.²⁶

ENTERED this 6th day of March, 2014, at Denver, Colorado.



PATRICK G. GERAGHTY
JUDGE

²⁵ On the FAA's decades long holding out to model aircraft operators/public that the only FAA policy regarding model aircraft operations was the requested voluntary compliance with the Safety Guidelines of AC 91-57, it would likely require for assertion of a Rule or FAR authority concerning model aircraft operations, for the FAA to undertake rulemaking as required by 5 U.S.C. Section 553 Rulemaking. Alaska Professional Hunters Association, Inc. v. Federal Aviation Administration, 177 F.3d 1030 (D.C. Cir. 1999), Shell Offshore, Inc. v. Babbitt, 238 F.3d 622 (5th Cir. 2001).

²⁶ In light of the decision reached herein, other issues raised, and argument made need not be, and are not, addressed.



ATTACHMENT 1

U.S. Department
of Transportation

Federal Aviation
Administration

Eastern Region
Regional Counsel
Telephone: 718 563-3269
Facsimile: (718) 995-5699

1 Aviation Plaza
Jamaica, NY 11434

JUN 27 2013

FEDERAL EXPRESS, REGISTERED MAIL - RETURN RECEIPT REQUESTED, AND
ELECTRONIC MAIL

Raphael Pirker
Melchutistrasse 47
8304 Zurich
Switzerland

Docket No. 2012EA210009

ORDER OF ASSESSMENT

On April 13, 2012, you were advised through a Notice of Proposed Assessment that the FAA proposed to assess a civil penalty in the amount of \$10,000.

After consideration of all the available information, it appears that:

1. On or about October 17, 2011, you were the pilot in command of a Ritewing Zephyr powered glider aircraft in the vicinity of the University of Virginia (UVA), Charlottesville, Virginia.
2. The aircraft referenced above is an Unmanned Aircraft System (UAS).
3. At all times relevant herein you did not possess a Federal Aviation Administration pilot certificate.
4. The aircraft referenced above contained a camera mounted on the aircraft which sent real time video to you on the ground.
5. You operated the flight referenced above for compensation.
6. Specifically, you were being paid by Lewis Communications to supply aerial photographs and video of the UVA campus and medical center.
7. You deliberately operated the above-described aircraft at extremely low altitudes over vehicles, buildings, people, streets, and structures.

8. Specifically, you operated the above-described aircraft at altitudes of approximately 10 feet to approximately 400 feet over the University of Virginia in a careless or reckless manner so as to endanger the life or property of another.
9. For example, you deliberately operated the above-described aircraft in the following manner:
 - a. You operated the aircraft directly towards an individual standing on a UVA sidewalk causing the individual to take immediate evasive maneuvers so as to avoid being struck by your aircraft.
 - b. You operated the aircraft through a UVA tunnel containing moving vehicles.
 - c. You operated the aircraft under a crane.
 - d. You operated the aircraft below tree top level over a tree lined walkway.
 - e. You operated the aircraft within approximately 15 feet of a UVA statue.
 - f. You operated the aircraft within approximately 50 feet of railway tracks.
 - g. You operated the aircraft within approximately 50 feet of numerous individuals.
 - h. You operated the aircraft within approximately 20 feet of a UVA active street containing numerous pedestrians and cars.
 - i. You operated the aircraft within approximately 25 feet of numerous UVA buildings.
 - j. You operated the aircraft on at least three occasions under an elevated pedestrian walkway and above an active street.
 - k. You operated the aircraft directly towards a two story UVA building below rooftop level and made an abrupt climb in order to avoid hitting the building.
 - l. You operated the aircraft within approximately 100 feet of an active heliport at UVA.
10. Additionally, in a careless or reckless manner so as to endanger the life or property of another, you operated the above-described aircraft at altitudes between 10 and 1500 feet AGL when you failed to take precautions to prevent collision hazards with other aircraft that may have been flying within the vicinity of your aircraft.
11. By reason of the above, you operated an aircraft in a careless or reckless manner so as to endanger the life or property of another.

By reason of the foregoing, you violated the following section(s) of the Federal Aviation Regulations:

- a. Section 91.13(a), which states that no person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.

NOW THEREFORE, IT IS ORDERED, pursuant to 49 U.S.C. §§46301(a)(1) and (d)(2) and 46301(a)(5), that you be and hereby are assessed a civil penalty in the amount of \$10,000.

You may pay the penalty amount by submitting a certified check or money order payable to the "Federal Aviation Administration" to the Office of Accounting, 1 Aviation Plaza, Jamaica, NY 11434. **In the alternative, you may pay your civil penalty with a credit card over the Internet. To pay electronically, visit the web site at <http://div.dot.gov/fea.htm> and click on "Civil Fines and Penalty Payments" which will bring you to the "FAA Civil Penalty Payments Eastern Region" page. You must then complete the requested information and click "submit" to pay by credit card.**

ATTACHMENT 2



Specifications

MODEL: Zephyr II

MANUFACTURER: RiteWingRC (ritewingrc.com)

DISTRIBUTOR: RiteWingRC

TYPE: electric flying wing

SMALLEST FLYING AREA: football field

IDEAL FOR: intermediate or advanced

WINGSPAN: 56 in.

WING AREA: 770 sq. in.

READY-TO-FLY WEIGHT: 4lbs 7oz

WING LOADING: 16 oz sq.ft

PRICE: \$130.00

CENTER-OF-GRAVITY: 9 3/8" back from nose

GEAR USED

Radio: Spektrum DX8, Orange rx, (2) RiteWingRC metal gear servos-elevons

Motor: RiteWingRC 1200kv, 65amp ESC (ritewingrc.com), Turnigy 5amp 26v BEC (hobbyking.com)

ATTACHMENT 3

AC 91-57

DATE June 9, 1981


ADVISORY CIRCULAR



DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
Washington, D.C.

Subject: MODEL AIRCRAFT OPERATING STANDARDS

1. PURPOSE. This advisory circular outlines, and encourages voluntary compliance with, safety standards for model aircraft operators.
2. BACKGROUND. Modelers, generally, are concerned about safety and do exercise good judgement when flying model aircraft. However, model aircraft can at times pose a hazard to full-scale aircraft in flight and to persons and property on the surface. Compliance with the following standards will help reduce the potential for that hazard and create a good neighbor environment with affected communities and airspace users.
3. OPERATING STANDARDS.
 - a. Select an operating site that is of sufficient distance from populated areas. The selected site should be away from noise sensitive areas such as parks, schools, hospitals, churches, etc.
 - b. Do not operate model aircraft in the presence of spectators until the aircraft is successfully flight tested and proven airworthy.
 - c. Do not fly model aircraft higher than 400 feet above the surface. When flying aircraft within 3 miles of an airport, notify the airport operator, or when an air traffic facility is located at the airport, notify the control tower, or flight service station.
 - d. Give right of way to, and avoid flying in the proximity of, full-scale aircraft. Use observers to help if possible.
 - e. Do not hesitate to ask for assistance from any airport traffic control tower or flight service station concerning compliance with these standards.


R. J. VAN VUREN
Director, Air Traffic Service

Initiated by: AAT-220

(hobbyking.com)



APPENDIX 2



Named Insured _____ Make & Model Aircraft to be Flown _____

Your Name _____
FIRST MIDDLE LAST

Address _____
STREET CITY STATE/PROVINCE ZIP/POSTAL CODE

Date of Birth _____ Education (Advise Diplomas and Degrees if any) _____

Occupation _____ Show percent of work time spent on non-flying duties _____ %

Employed by _____ Since _____ Full Time Part Time

Address _____
STREET CITY STATE/PROVINCE ZIP/POSTAL CODE

Business Phone () _____ Home Phone () _____

List previous employers and position for last 5 years _____

Are you a certificated pilot? Yes No *Based on answer to this question, please complete applicable section below.*

Certificated Pilot	Airman Certificate Number: _____ Limitations: _____ CURRENT CERTIFICATES AND RATINGS <input type="checkbox"/> Student: Since _____ DATE <input type="checkbox"/> Instrument <input type="checkbox"/> Instructor _____ CLASS <input type="checkbox"/> Private <input type="checkbox"/> Single Engine - Land <input type="checkbox"/> Type rated in _____ TYPE OF AIRCRAFT <input type="checkbox"/> Commercial <input type="checkbox"/> Single Engine - Sea <input type="checkbox"/> Glider <input type="checkbox"/> Airline (ATP) <input type="checkbox"/> Center Line Thrust <input type="checkbox"/> Light Sport Aircraft <input type="checkbox"/> Rotorcraft <input type="checkbox"/> Multi-Engine - Land <input type="checkbox"/> A&P Mechanic <input type="checkbox"/> Multi-Engine - Sea <input type="checkbox"/> Other _____
	Have you successfully completed an FAA (or equivalent) Private Pilot ground instruction course? <input type="checkbox"/> Yes <input type="checkbox"/> No If you answered "Yes" to the question above, have you passed the FAA (or equivalent) Private Pilot written examination? <input type="checkbox"/> Yes (Date Passed _____) <input type="checkbox"/> No

MEDICAL CERTIFICATE INFORMATION:

Do you hold a current and valid Medical Certificate?

Yes No

Class: _____ Expiration Date: _____

Limitations: _____

Date manufacturer's training for specific UAS to be insured was completed: _____

Date qualified by aircraft owner/employer on the specific UAS to be insured: _____

Date of last manufacturer/employer Proficiency Check for specific UAS to be insured (if applicable): _____

ADDITIONAL TRAINING APPLICABLE TO UNMANNED AIRCRAFT

Name & Location of School/Training Provider	UAS Model	Date	Completed
_____	_____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No

INITIAL MANUFACTURER'S TRAINING
 RECCURENCY TRAINING
 CREW RESOURCE MANAGEMENT (CRM)
 SIMULATOR PROFICIENCY/RECURRENT

UNMANNED AIRCRAFT PILOT/OPERATOR EXPERIENCE AND CURRENCY

ITEMIZED PILOT-IN-COMMAND / PRIMARY OPERATOR EXPERIENCE WITH UNMANNED AIRCRAFT

UAS GROUP	MAKE(S) & MODEL(S)	NUMBER OF MISSIONS FLOWN / LAUNCHES / RECOVERIES			
		TOTAL	LAST 90 DAYS	LAST 30 DAYS	LAST 12 MONTHS
INSURED MAKE AND MODEL		/ /	/ /	/ /	/ /
GROUP 1 (MGTOW 0-20 lbs.)		/ /	/ /	/ /	/ /
GROUP 2 (MGTOW 21-55 lbs.)		/ /	/ /	/ /	/ /
GROUP 3 (MGTOW < 1,320 lbs.)		/ /	/ /	/ /	/ /
GROUP 4 (MGTOW > 1,320 lbs.) (OPERATING ALT. < FL180)		/ /	/ /	/ /	/ /
GROUP 5 (MGTOW > 1,320 lbs.) (OPERATING ALT. > FL180)		/ /	/ /	/ /	/ /

MANNED AIRCRAFT PILOT EXPERIENCE AND CURRENCY (APPLICABLE FOR CERTIFICATED PILOTS)

Total Logged Pilot-In-Command hours for all manned aircraft _____

Total Logged hours in all manned aircraft _____

ITEMIZED PILOT-IN-COMMAND HOURS OF MANNED AIRCRAFT

CLASS	MAKE(S) & MODEL(S)	TOTAL	LAST 90 DAYS	LAST 12 MONTHS	INSTRUMENT 6 MONTHS	CO-PILOT HOURS
FIXED WING SINGLE ENGINE PISTON						
MULTI-ENGINE PISTON						
TURBO-PROP						
JET						
HELICOPTER						
GLIDER / BALLON						

Date of last logged satisfactorily accomplished Biennial Flight Review (if applicable): _____ Make and Model _____

Date of last logged satisfactorily accomplished Pilot Proficiency Exam (if applicable): _____ Make and Model _____

Date of last logged satisfactorily accomplished Instrument Proficiency Check (if applicable): _____ Make and Model _____

FLIGHT & GROUND SCHOOL TRAINING COURSES APPLICABLE TO MANNED AIRCRAFT

Name & Location of School	Type of Aircraft	Date	Graduated
<input type="checkbox"/> INITIAL TYPE TRAINING <input type="checkbox"/> RECURRENCE TRAINING <input type="checkbox"/> FULL-AXIS MOTION FLIGHT SIMULATOR TRAINING <input type="checkbox"/> GROUND SCHOOL ONLY <input type="checkbox"/> AERIAL APPLICATOR SCHOOL			<input type="checkbox"/> Yes <input type="checkbox"/> No
LEVEL OF SIMULATOR TRAINING COMPLETED _____			
<input type="checkbox"/> INITIAL TYPE TRAINING <input type="checkbox"/> RECURRENCE TRAINING <input type="checkbox"/> FULL-AXIS MOTION FLIGHT SIMULATOR TRAINING <input type="checkbox"/> GROUND SCHOOL ONLY <input type="checkbox"/> AERIAL APPLICATOR SCHOOL			<input type="checkbox"/> Yes <input type="checkbox"/> No
LEVEL OF SIMULATOR TRAINING COMPLETED _____			

CONTINUED ON FOLLOWING PAGE



APPENDIX 3

LIABILITY EXTENSION - UNMANNED AIRCRAFT SYSTEMS

Named Insured.			Endorsement Number.
Policy Symbol.	Policy Number.	Policy Period. to	Effective Date of Endorsement.
Issued By (Name of Insurance Company).			

Insert the policy number. The remainder of the information is to be completed only when this endorsement is issued subsequent to the preparation of the policy.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE FORM

SCHEDULE	
Information required to complete this Schedule, if not shown below, will be shown in the Declarations.	
1. Additional Operations (describe):	_____
2. Amended UAS Weight - All UAS's	_____
Amended UAS Weight - Specific UAS (describe):	_____
3. UAS Liability Limits of Insurance	
a. Each Occurrence	\$ _____
b. Coverage Aggregate	\$ _____

A. The following is an additional exception to the exclusion listed in **SECTION I – COVERAGES, COVERAGE A - BODILY INJURY AND PROPERTY DAMAGE LIABILITY, 2. Exclusions**, paragraph **g. Aircraft, Auto Or Watercraft**.

This exclusion does not apply to “bodily injury” or “property damage” arising out of the operation of “unmanned aircraft systems” owned or operated by or rented or loaned to any insured when used in your operations for:

1. Aerial reconnaissance including the collection of photographic, video, radar, infrared and ultraviolet images;
2. Data collection;
3. Crop monitoring;
4. Mapping; or
5. Additional operations as described in the **SCHEDULE** of this endorsement.

“Unmanned aircraft systems” (UAS) means a robotic aircraft weighing less than 26 pounds, unless another weight limit is shown in the **SCHEDULE**, without a human pilot on board and with its flight controlled by an on-board computer or remote human operator.

B. The following is added to **SECTION III – LIMITS OF INSURANCE**.

With respect to the insurance provided by this endorsement, the most we will pay for “bodily Injury” or “property damage” is the lesser of:

1. The policy Limits of Insurance shown in the Declarations; or
2. The UAS Liability Limits of Insurance, if any, shown in the **SCHEDULE** of this endorsement.

All other terms and conditions of this policy remain unchanged.

Authorized Representative