Hogan Lovells US LLP
Columbia Square
555 Thirteenth Street, NW
Washington, DC 20004
T +1 202 637 5600
F +1 202 637 5910
www.hoganlovells.com

Statement of Lisa Ellman
Partner and Chair, Global Unmanned Aircraft Systems Group
Hogan Lovells US LLP
Co-Executive Director, Commercial Drone Alliance

Before the United States House of Representatives Committee on Small Business
Subcommittee on Investigations, Oversight and Regulations

For the Committee's Hearing:
"*Opportunity Rising: the FAA's New Regulatory Framework for Commercial Drone Operations"*

September 27, 2016

Chairman Hardy and Ranking Member Adams:

Thank you for inviting me to testify before the House Committee on Small Business and the Subcommittee on Investigations, Oversight and Regulations. It is an honor to speak with you today about the remarkable recent growth in the commercial unmanned aircraft industry, the exciting opportunities for small businesses across the country that were unleashed by Part 107 opening the skies to commercial Unmanned Aircraft Systems (UAS), or drones, and the challenges for the industry that remain.

I come here today with a unique understanding of UAS integration, as I have worked on these issues from both the private sector and the government side. From 2009-2014, I worked at the top levels of the Executive Branch, both at the White House and U.S. Department of Justice (DOJ), in various roles focusing on emerging technologies. Most recently, I led DOJ's effort to develop policy that would govern the use of UAS in the United States, and participated in the federal interagency process considering UAS-related policy issues. I now chair Hogan Lovells' UAS Practice, assisting businesses to succeed in the dynamic UAS marketplace. I also co-founded a nonprofit called the Commercial Drone Alliance to bring policymakers and innovators together to move the commercial UAS industry forward.

We are at an exciting time for innovation in our country. Technology has moved forward rapidly, and our nation's capabilities over the next few decades will be limited only by our collective imagination. Previously considered toys, UAS have emerged as "must-have"

tools for industry and public agencies. UAS make tasks, from disaster response to farming to infrastructure inspection, safer and more efficient, enhancing American productivity. UAS are critical to the future of transportation and an exponential enabler of research and development.

Technology often moves more quickly than policy, and UAS are no different. But to ensure the success of the UAS industry, and balance that with consideration for the good of the American public, we need rules and laws that enable innovation while maintaining safety, privacy and security. From my government experience, I know how difficult a task this is. But to maintain America's competitive edge, it is critical that policy moves forward in a timely way.

Background: The UAS Market

The economic benefits the UAS market will provide are significant. Expert estimates vary, but the numbers are all large. A recent Teal Group Corporation study estimates civil UAS as a $2.6B market in 2016, quadrupling to $10.9 billion by 2025.[1] A recent PricewaterhouseCoopers report estimates the global market value of UAS-powered solutions at over $127 billion.[2] Here in the United States, over the next decade and assuming the regulatory framework keeps pace, some predict that the domestic UAS industry will grow to be an $82 billion market while creating more than 100,000 new jobs.[3] And the FAA recently estimated that by 2020—just four years from now—there will be 11 million commercial UAS sold in our country.[4]

Even given these economic benefits, despite U.S. leadership in the broader technological revolution, the federal government has been playing catch-up on commercial UAS. Japan, for example, has been crop dusting with UAS for decades – and commercial

[1] Finnegan, Philip. *World Civil Unmanned Aerial Systems: Market Profile & Forecast.* Teal Group Corporation, 2016. Available at https://dl.dropboxusercontent.com/u/1665888/TGCTOC/sample-WUASC2016.pdf. Accessed September 22, 2016. This number represents an estimate of the "future worldwide market for civil government and commercial unmanned aerial vehicles."

[2] Michal Mazur et al., *Clarity From Above: PwC Global Report on the Commercial Applications of Drone Technology*. PwC Polska Sp, May 2016. Available at http://www.pwc.pl/pl/pdf/clarity-from-above-pwc.pdf. Accessed September 21, 2016. This number represents the "value of current business services and labour that have a high potential for replacement in the very near future by drone powered solutions."

[3] *White House Fact Sheet: New Commitments to Accelerate the Safe Integration of Unmanned Aircraft Systems*. August 2, 2016. Available at https://www.whitehouse.gov/the-press-office/2016/08/02/fact-sheet-new-commitments-accelerate-safe-integration-unmanned-aircraft. Accessed September 21, 2016.

[4] Cheryl Miner et al, *Final Rulemaking Regulatory Evaluation: Small Unmanned Aircraft Systems, 14 CFR Part 107*, U.S. Department of Transportation, Federal Aviation Administration, June 2016, page 155.

drones are routinely flown all over Canada, Australia and many other countries. Meanwhile, many U.S. companies that are driving UAS innovation have been forced to do so largely outside of our borders.

We have made great progress over the last few months, but it is important to keep the momentum going.

UAS Impact on Small Business

Before discussing the developing policy framework, it is important to note the critical role small businesses have played in the growth of the UAS industry. As is usually the case with new technologies and nascent industries, small business – which has always been the pride of our country and source of economic growth – is the engine driving commercial UAS adoption in the United States. Right now, a small business in Illinois is seeking to use UAS for disaster and emergency response. In California, a small company is designing UAS for cargo delivery. A small business in Michigan is enabling wind farm owners to track the health of their wind turbines with UAS. And this same type of activity is happening in towns and communities across the United States.

Moreover, the ability to use UAS has breathed new life into resource-constrained small businesses of all kinds. UAS make dangerous tasks safer, and expensive tasks cheaper. Local news broadcasters who cannot afford manned helicopters are now able to obtain aerial footage of major news events, helping Americans receive the news they want and need. Small-town realtors are now able to market and sell homes using unique aerial shots from UAS. And farmers can detect and mitigate disease in their crops with pinpoint precision from the air, making their products healthier, more consistent and more profitable, while also saving precious time and resources – without having to rely on more expensive manned aircraft.

UAS Policy Development

Given the many benefits of this technology, the broad integration of commercial UAS into the National Airspace represents an exceedingly exciting opportunity for our country. But innovation does not happen in a vacuum; we need the policy in place to enable it. While the possibilities for the UAS industry are great, there are safety, privacy and security issues that must be tackled. I confronted many of these issues during my time in the federal government. My interagency colleagues and I asked the first order questions: How do we take advantage of the many benefits of UAS, in a way that wins the public's trust? What does a fully integrated National Airspace System look like, and how can we keep it safe and secure?

In many ways, if we were to start over, it would make better sense to create a new regulatory framework that is focused on ensuring safety and preventing actual harms from very small vehicles that resemble toys and gadgets more than manned aircraft. The Federal Aviation Administration (FAA) does an excellent job of implementing its statutory mandate: keeping our National Airspace safe and secure. But as it is today, the government has essentially bolted the new small UAS regulations onto the old manned aviation regulatory structure. Meanwhile, a 5 pound UAS has almost nothing in common with a large manned aircraft. With some creativity, we should have drafted a different set of rules for UAS and other small vehicles that do not cite and relate back to manned aircraft regulations – rules that require companies to jump through legal hoops in order to obtain relief from those same manned aircraft regulations. It would be a cleaner approach, while still ensuring our safety, and we would not have the absurd results that burden industry with little benefit.

Update: Part 107 is Major Step Forward

Nevertheless, we are where we are – and this summer, the United States took some critical steps forward. After years of work by FAA and industry partners, just a few weeks ago, Part 107 of the Federal Aviation Regulations went into effect. For the first time, businesses are now broadly authorized to fly small UAS in the United States for commercial purposes. UAS operations that comply with the rule's flight restrictions – including generally traveling no higher than 400 feet, within visual line of sight, away from people and during daytime hours – can now benefit a range of industries in innovative ways.

This is welcome progress, and has finally opened the benefits of UAS to small businesses across the country. In just the first few weeks since Part 107 went into effect, 6,768 Remote Pilot Certificate Exams were taken, with a "pass" rate of 88 percent, and 14,909 applications have been submitted – with 10,996 of those processed by the FAA. Small businesses like Measure, Uplift Data Partners, and DataWing, UAS service providers for the industry, now have increased access to certificated pilots. And in the same time period, 552 waiver applications requesting the ability to fly outside the scope of the rule have been filed; 79 of them have been approved. With regulatory certainty, funding dollars are now able to flow into the industry.

In addition to the new rule, we have seen significant interest from the Executive Branch in keeping the commercial UAS adoption momentum going. The White House held its first workshop on commercial UAS just last month, where a broad range of commitments were made to move the industry forward. In May, industry and nonprofits agreed on a set of voluntary best practices for protecting privacy while operating commercial and private UAS as part of a process that was facilitated by the National Telecommunications

and Information Administration. And NASA has focused on moving its Unmanned Aircraft Traffic Management efforts forward, a critical component toward designing "highways in the sky."

Challenges for the Commercial UAS Industry Remain

Yet while we have taken some crucial steps forward, challenges remain. There are still government-imposed roadblocks to commercial UAS operations in the United States. Congress can play an important role in clearing these roadblocks, whether through next year's FAA Reauthorization process or by other means.

Indeed, the following items are critical to small businesses if we expect to keep America competitive in the global UAS industry:

Waiver Process. While the rule represents excellent progress overall, the operational limitations of Part 107 are actually quite strict; amongst other conditions, one must operate a UAS within visual line of sight, during daytime hours, and away from people. The ability for businesses to seek a waiver for operations beyond the scope of Part 107 is an appreciated step forward. However, it is critical that the process for obtaining waivers under Part 107 is streamlined. The process should greatly improve upon the process for applying for and receiving a Section 333 exemption – the special FAA license most commercial UAS operators must have received prior to August 29, 2016 in order to fly. That process moved at a snail's pace, with some of the several thousand applications sitting in the FAA's queue for over a year, and some never even receiving a response. The Part 107 waiver process must be user-friendly, clear and expeditious – moving at the speed of industry.

The Part 107 waiver itself must also provide meaningful relief for companies operating UAS in the real world. To take advantage of the safety and efficiency benefits of UAS, companies need to be able to fly in urban and suburban environments, where people are. To inspect pipelines and railroads, they need to be able to fly beyond visual line of sight. To respond to disasters, they need to be able to fly at night. Congress should help the FAA move beyond the current operating envelope so that it reflects a common sense view of the world. Regulations that are unduly strict will have the counter-effect of encouraging businesses to flout the rules; safety suffers as a result. The waiver process should enable real-world operations while protecting safety.

Additional Rulemakings. We need additional rules that broadly authorize safe flights above people, beyond visual line of sight and at night – and we need them soon. Otherwise, critical UAS operations that often must occur in these conditions, such as

disaster response, news gathering or time-sensitive agriculture operations, will be stalled. It is common sense that very small UAS ("micro-UAS") should be allowed to fly permissively; right now, a two pound UAS is treated the same as a 55 pound UAS. Just this incremental change would enable all sorts of beneficial applications.

As the FAA crafts additional rules, the agency should consider risk factors broadly; for example, the risks inherent in the dangerous tasks that UAS operations would replace must be part of its analysis. And for flights over people, the FAA should consider operational and technical mitigations in addition to kinetic energy; as the industry evolves, we have an excellent opportunity to incentivize innovation around parachutes, propeller guards and padding for vehicles to make them safer.

Enhanced Government-Industry Collaboration. From 2011-2013, I worked in the White House's Office of Science and Technology Policy and Office of Management and Budget to open up our federal government and bring about increased collaboration. I appreciate how difficult it can be for bureaucracies to change their ways; but I also know that transparency and collaboration are key to better government.

To properly capitalize on the possibilities ahead, innovators and policymakers must work more closely together – a process called "polivation." Innovators must help policymakers understand what is possible with the technology, while policymakers must create rules of the road that offer the best returns from UAS technology that will benefit everyone – while protecting Americans' safety and privacy.

We have seen great progress from the FAA in recent years. Just this month, the first meeting of the Drone Advisory Committee was convened, bringing together both large and small companies with policymakers to craft solutions for challenges facing the industry. But still, challenges remain. There needs to be greater government-industry collaboration at the working level. And we need to make it easier for everyone, including small businesses, to participate in the regulatory process. Big companies may be able to afford to take big bets on technology, but small businesses lack this luxury. In some cases, UAS represent a small company's entire business model, with employees' families and communities dependent on revenue from those businesses.

Whole-of-Government Approach to Integration. We must support a whole-of-government approach to enable the broader infrastructure for this industry to succeed: NASA is tackling critical issues through its Unmanned Aircraft Traffic Management efforts, and needs the resources necessary to do so. The FCC is considering spectrum issues. The FTC is hosting a workshop on UAS privacy issues. And there is more. It is important

that all interested agencies engage with the industry now, with a focus on finding solutions that enable commercial UAS integration safely and broadly – and in an expeditious way.

Industry Diversity. Congress must continue to support Small Business Administration programs that assist women and minority-owned small businesses. Along with two of my colleagues, I recently founded the Women of Commercial Drones organization to bring gender diversity to the growing UAS industry. Continued support for programs like these is critical.

Conclusion

The opportunities for the UAS industry are great. We have made excellent progress in recent months, and it is important to provide the federal government the support it needs to continue that momentum.

Notably, the work ahead is not just on the government side. The industry must do its part. That is why this summer, UAS industry associations (including the Commercial Drone Alliance) pledged to implement a broad educational effort around privacy best practices for users of UAS technology. The Alliance also committed to leading a broad effort to educate the American public on the integration of UAS into the National Airspace System, and to engage the UAS end-user community, NASA, and UAS UTM collaborators to further enable the acceptance of autonomy and UAS technology. And small businesses across the country are working every day to make UAS smart and safe.

We all must do our part. By keeping the dialogue open between innovative companies and government, small businesses that are doing new, interesting and life-saving work will be able to prosper – and in a way that wins the public's trust and keeps the public safe.

If we tackle these issues properly, we will soon regard commercial UAS as we do the phones we carry and rely on every day: tools that make us more efficient, productive, safer and more connected.

Thank you.

Lisa Ellman

Partner
Lisa.Ellman@hoganlovells.com
D (202) 637-6934