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## Aerospace Alert from Hardy Law

"New Space" Special

August 15, 2012

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"New Space". Some use this term for the new private commercial outer space industry. I also include the new private commercial drone industry. Both are just babies now, but promise to explode in the next few years. As a long-time aviation attorney, I am thrilled to have the chance to grow, and help my clients grow, with these new industries.

So much has happened in New Space recently, I am devoting this Aerospace Alert to it. The traditional aviation world has also had some interesting developments, so I'll get back to that in my next Alert.

As always, please contact me if I can be of service.

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The Commercial Space Race is On!



2011: NASA retires the Space Shuttle program, with the idea of private companies taking over tasks such as transporting supplies and astronauts to the International Space Station (ISS).

May 2012: SpaceX (created by PayPal's founder Elon Musk) is the first private company to successfully launch and dock a payload-carrying space vehicle to the ISS.



Spaceport America-taxiway to Virgin Galactic's Terminal

Start-ups like Blue Origin (created by Amazon.com's Jeff Bezos), as well as long-timers Boeing and Sierra-Nevada Corp., are also working on space vehicles to ferry astronauts and equipment to the ISS.

Other private companies are focused on space tourism. While the companies mentioned above are using existing NASA launch sites with permission, Richard Branson's Virgin Galactic teamed with the State of New Mexico to construct the world's first purpose-built commercial spaceport, nearing completion now.

For the bargain price of \$200,000, regular folks like you and I can reserve a seat on a Virgin Galactic flight into Earth's lower orbit (the plan is that prices will rapidly decrease, as did early commercial aircraft flights). Over 500 tickets have been sold, and VG is currently testing its vehicles and hopes to begin the passenger flights in early 2013. XCOR Aerospace is working on a competitor vehicle to bring tourists into space for about half that price. SpaceX is even planning to team with Bigelow Aerospace to carry passengers to "space hotels".

Even commercial space mining is on the table. On April 24, 2012, new company Planetary Resources announced plans to scout and mine near-earth asteroids over the next several years. Others have made similar claims, but people are paying more attention to Planetary Resources, as its founders have impressively deep pockets and innovative track records: Google billionaires Larry Page and Eric Schmidt, Ross Perot, Jr., former Microsoft executive Charles Simonyi, space tourism entrepreneurs Peter Diamandis and Eric Anderson, and James Cameron (yes, the director of Avatar- gotta wonder if he's hoping to find Unobtainium, and how he'll react if Na'vi get in his way).

After almost 50 years of NASA's monopoly over space travel, the market has now opened up in a huge way for private enterprise. There is amazing potential. But with that come new legal issues that will also have to be navigated ([see below](#)).

## Drones: Not Just for Terrorists Anymore.

Drones. Unmanned Aerial Systems (UASs). Unmanned Aerial Vehicles (UAVs). All names to describe the many types of aircraft flown without a pilot aboard.

Their use as weapons has become increasingly widespread by the U.S. in the battlefields of Afghanistan, Iraq and Pakistan. Now many are seeing the beneficial non-lethal uses that UAVs can provide, such as less expensive and higher endurance search and rescue. Or [delivering tacos to your door](#). (Note, for reasons discussed below, you can't actually get tacos delivered to your door yet, despite this ambitious website.)

website.)

Private companies are biting at the chomp to capitalize on this. At the Association for Unmanned Vehicle Systems International convention in Las Vegas last week, for the first time in its history private companies comprised the majority of attendees. FAA Administrator Michael Huerta addressed the crowd to assure them that the FAA is diligently working on regulations to safely integrate commercial drones into US airspace. (More on that [below](#)). States (about 26 at last count) are vying to be hosts for drone test sites for the FAA's integration process- six of which the FAA will select by the end of the year.

## Legal Hurdles in the New Space Frontier.

Players in these new industries face a variety of legal challenges: some new, some still on the drawing board, and some older rules intended for other operations but now applying to New Space. Here are a few:

### **Spacecraft.**

The FAA now has an Office of Commercial Space Transportation. And new FAA regulations include those governing launch permits. The requirements are broad, and permits are issued on a case-by-case basis. Accordingly, attention to detail, communication with the FAA and flexibility are key.

More comprehensive regulations governing human spaceflight are forthcoming from the FAA. However, in an effort to promote the critical initial phases, Congress has temporarily restricted the FAA from issuing such regulations, barring a serious mishap.

Old(er) regulations include International Traffic in Arms Regulations (ITAR). These are proving to be anachronistic in the face of the new commercial space travel model, and industry is fighting for change. In the meantime, they must be considered for commercial space operations.

Even older regulations date back to the first, inter-governmental space race of the 1960s. The UN's 1967 "Outer Space Treaty" has over 100 countries signatory. Some of the treaty's provisions may be tested for the first time with private commercial activity. For example, it is unclear whether space mining for private profit is permitted under the treaty's mandates that the use of outer space (and its celestial bodies) be for the benefit of all mankind and countries, regardless of economic or scientific development, and that appropriation of outer space (and its celestial bodies) is not allowed.

With respect to financing these new commercial spacecraft, as with commercial aircraft, international interests will often come into play. For that reason, a number of countries, including the US, adopted in March 2012 the Space Assets Protocol to the Cape Town Convention on International Interests in Mobile Equipment. For those of us who have been working with the Cape Town Convention and its *Aircraft Equipment* Protocol over the last decade, this will be an easier transition. However, the Space Assets Protocol is not identical to the Aircraft Equipment Protocol, and will present challenges, as well as opportunities, for us all.

Further, states are racing to pass legislation limiting liability for commercial space

travel providers, manufacturers and suppliers. Florida, Texas, Colorado and Virginia (current or hopeful homes to spaceports) now have such laws. California (another spaceport state) appears close to passing its version. New Mexico, home of Spaceport America, surprisingly rejected the law in February 2012. However, their governor is pushing for its passage again, and its chances appear higher this time.

### **Drones.**

So many commercial operators want to get started with drone activity that the FAA has banned commercial use of them until they can put together regulations that safely integrate drones into our airspace. Some private companies may operate drones for research & development if they go through the subjective and lengthy process of applying to the FAA for a Special Airworthiness Certificate (these have been primarily issued to the big defense companies). And governmental entities, especially law enforcement and universities, can more easily obtain a Certificate of Authorization to operate drones. Both of these, however, are case-by-case, unpredictable and can get very burdensome and expensive.

The FAA has been mandated to come up with regulations to integrate drones into US airspace no later than September 30, 2015. And the FAA is taking this seriously and hopes to have regs in place well before then. In the meantime, options for commercial operators are limited. However, there's always hope. There are some legal options that may allow at least limited commercial activity.

With the variety of legal challenges facing operators in the New Space Frontier, the keys to compliance, and to safety, are flexibility, creativity and perseverance. It also helps to know the existing rules, how they inform the new rules, and how to work with the the FAA and other agencies to apply those rules, especially in uncharted territory.

### **About Joe Hardy**

I believe in people working together for aerospace safety- combining talents and efforts to help business aerospace run smoothly and safely. I am a pilot and attorney specializing in aerospace transactions and mediation- especially buying and selling, financing, and setting up ownership and operational structures to comply with the Federal Aviation Regulations.

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