Paper ID: 10154
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54TH IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (E7)
Legal Issues of Commercial Human Spaceflight (2)

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NASA'S COMMERCIAL CREW TRANSPORTATION SYSTEM REQUIREMENTS AND THE FAA HUMAN SPACEFLIGHT REGULATIONS: A STUDY IN CONTRASTS

Abstract

On December 10, 2010, NASA issued the second version of the technical requirements that will be imposed on private companies that provide orbital crew transportation services to NASA. These *Commercial Crew Transportation System Requirements for NASA Low Earth Orbit Missions* impose a multitude of operational and design requirements that, among other things, extend many existing NASA technical requirements to private service providers. The sheer volume of these requirements is daunting – being composed of a collection of approximately 80 existing NASA guidelines on various areas from crew health and safety to power systems, wiring, and orbital debris mitigation. This approach to regulating private spaceflight companies stands in stark contrast to the Federal Aviation Administration's *Human Space Flight Requirements* which take a "hands off" approach to regulating private suborbital human spaceflight by imposing few technical requirements – opting instead to protect private passengers by requiring companies to fully disclose the risks of spaceflight. This approach has the result of both promoting innovation as well as protecting the consumer since spaceflight companies are free to innovate without having to comply with complex design and operational requirements, while private passengers are able to make a fully informed decision when taking on the risk of suborbital flight.

After first comparing the different approaches taken in these two sets of regulations, this paper will consider (1) whether the more onerous NASA requirements are necessitated by the different nature of orbital spaceflight related to a government program (in contrast to private suborbital spaceflight), (2) the likely effects of the NASA requirements on commercial innovation, and (3) whether NASA (and other space agencies) should adopt another model of regulation governing the engagement of private orbital service providers.