Federal Aviation Administration

Memorandum

Date: APR 17 2013

To: Lourdes Maurice, Executive Director, AEE-1
Glenn Rizner, Division Manager, AST-500

From: Mark W. Bury, Acting Assistant Chief Counsel for International Law, Legislation and Regulations, AGC-200

Subject: Whether 14 C.F.R. § 91.817 applies to SpaceShipTwo during launch

This is in response to your request for an interpretation of 14 C.F.R. § 91.817 in light of the Commercial Space Launch Act, 51 U.S.C. ch. 509 (CSLA). Specifically, you inquire whether section 91.817 applies to the launch of SpaceShipTwo, a suborbital rocket of Scaled Composites, LLC (Scaled). Section 91.817 does not apply.

Background

In 2004, the Office of Environment and Energy (AEE) issued sonic boom waivers to Scaled for launches of SpaceShipOne. SpaceShipOne operations were authorized under both an Experimental Airworthiness Certificate (EAC) and a launch license. As will be discussed below, under 51 U.S.C. § 50919(a), the EAC should have only applied to SpaceShipOne's aviation activities, and the launch license to its space activities. Because SpaceShipOne could reach supersonic speeds, Scaled applied for Special Flight Authorizations from AEE to operate, for a permitted time, an aircraft exceeding Mach1 under section 91.817 and Appendix B. *Petition for Authorization to Exceed Mach 1*, 68 Fed. Reg. 61714 (Oct. 29, 2003). AEE granted the petition on November 13, 2003, and extended it for additional flights on March 26, 2004.

In 2011, Scaled applied for an experimental permit under 51 U.S.C. § 50906[1] to operate SpaceShipTwo from the Mojave Air and Spaceport in Mojave, California. You advise that as part of the application process, the FAA completed an environmental assessment (EA), which included a noise and sonic boom analysis. Wyle Research and Consulting computed the sonic boom footprints for proposed SpaceShipTwo operations. The EA determined that there were no significant environmental issues and the Office of Commercial Space Transportation (AST) was able to issue a finding of no significant impact (FONSI). SpaceShipTwo will launch under an experimental permit issued on May 23, 2012.

[1] The Commercial Space Launch Amendments Act of 2004 created a new form of launch authorization, the experimental permit, for reusable suborbital rocket launches.

Discussion

A. Authorization of a Hybrid Aircraft and the History of the Commercial Space Launch Act and its Amendments

Initially, with the first flights of SpaceShipOne, and prior to passage of the 2004 Commercial Space Launch Amendments Act, the FAA determined that the carrier aircraft White Knight and the launch vehicle SpaceShipOne would operate under experimental certificates when operating as aircraft. When SpaceShipOne operated as a suborbital rocket it would be under both a space license and an EAC. Arguably, this was not the correct decision in light of the original Commercial Space Launch Act of 1984, which states:

> Except as provided in this chapter, a person is not required to obtain from an executive agency a license, approval, waiver or exemption to launch a launch vehicle or operate a launch site or reentry site, or to reenter a reentry vehicle.

51 U.S.C. § 50919(a). This means that the Associate Administrator for Aviation Safety (AVS) does not certify an expendable launch vehicle such as the Atlas V, and is the source of the "one-stop-shop" and "exclusive licensing jurisdiction" references one hears. AST has historically licensed Orbital Sciences' launches of its Pegasus rocket carried by an L1011 aircraft from wheels forward of the aircraft, long before SpaceShipOne. No analysis under the Commercial Space Launch Act was requested for SpaceShipOne.

That a launch does not require an authorization other than what the CSLA requires does not mean that other laws do not apply. Section 50905(b)(1) states that "Except as provided in this subsection, all requirements of the laws of the United States applicable to the launch of a launch vehicle or the operation of a launch site or a reentry site, or the reentry of a reentry vehicle, are requirements for a license or permit under this chapter." A launch licensee still has to obey air traffic requirements when operating in the National Airspace System. The 1984 Senate report notes that "In creating a one-stop licensing process for commercial space launch activities within DOT, H.R. 3942 does not abrogate or repeal any existing Federal law or requirements." S. Rep. 656, 3 (98th Cong., 2d Sess. 1984). The report also recommends that DOT should work to reconcile redundancy.

With SpaceShipOne's first launches, AST and AVS provided for dual aviation and space authorizations. Congress then enacted a new provision:

> SINGLE LICENSE OR PERMIT.—The Secretary of Transportation shall ensure that only 1 license or permit is required from the Department of Transportation to conduct activities involving crew or space flight participants, including launch and reentry, for which a license or permit is required *under this chapter*. The Secretary shall ensure that all Department of Transportation regulations relevant to the licensed or permitted activity are satisfied.

51 U.S.C. § 50904(d) (emphasis added). A license or permit is required under this chapter for launch, and the CSLA defines launch to mean "to place or try to place a launch vehicle ... from Earth - (A) in a suborbital trajectory;...." Accordingly, when a carrier aircraft is taking a rocket

to a required altitude to drop it so that the rocket engines may fire and a suborbital (or, conceivably, orbital) launch take place, a space license or permit is required and that should be all that is required under the two provisions. When the FAA did not apply section 50919(a) for the White Knight and SpaceShipOne, Congress passed section 50904(d) to clarify that only a space license or permit could be in effect when operations took place under the CSLA.

B. SpaceShipTwo

SpaceShipTwo does not need to obtain a special flight authorization under part 91 to exceed Mach 1 during a launch. Section 91.817 states:

> (a) No person may operate a civil aircraft in the United States at a true flight Mach number greater than 1 except in compliance with conditions and limitations in an authorization to exceed Mach 1 issued to the operator under appendix B of this part.

Section 91.817 requires authorization to exceed Mach 1. Although a launch vehicle satisfies the definition of an aircraft, Congress chose to regulate launch vehicles under a different regime, namely, the licensing regime of the Commercial Space Launch Act. As evidenced both by the original section 50919(a), which states that "[e]xcept as provided in this chapter, a person is not required to obtain from an executive agency a license, approval, waiver or exemption to launch a launch vehicle...," and the Congressional response to the FAA's dual aviation and space transportation authorizations for SpaceShipOne, the space licensing regime excludes approvals of other statutes during launch and reentry. The section 91.817 authorization conflicts with the statutory bars of the Commercial Space Launch Act because it constitutes an approval.[2]

I hope this information has been helpful. This interpretation has been coordinated with the Office of Commercial Space Transportation's Development Division, AST-100, and the Office of Environment and Energy's Noise Division, AEE-100. If you have any additional questions concerning this interpretation, please contact Laura Montgomery of my staff at 202 267-3150.

[2] When either SpaceShipTwo or the carrier aircraft are engaged in aviation activities both are still subject to aviation regulation. However, during launch or reentry, they are subject to the CSLA and its requirements and restrictions.