U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of the Chief Counsel

800 Independence Ave., S.W.
Washington, D.C. 20591

JAN - 5 2017

David Schober
10919 Green Valley Rd.
Union Bridge, MD 21791

Re: Automatic Dependent Surveillance-Broadcast Out equipment requirements

Dear Mr. Schober:

This letter responds to your request for a legal interpretation dated July 7, 2015, regarding the Automatic Dependent Surveillance-Broadcast (ADS-B) Out equipment requirements in 14 C.F.R. § 91.225. Specifically, you have asked whether these requirements apply to aircraft originally certificated without an electrical system but which have subsequently had batteries or electric starters installed.

Section 91.225(b) requires aircraft operating in certain airspace to have equipment installed that meets: (1) the performance requirements of TSO-C166b (Extended Squitter ADS-B and Traffic Information Service-Broadcast Equipment Operating on the Radio Frequency of 1090 MHz) or TSO-C154c (Universal Access Transceiver ADS-B Equipment Operating on the Frequency of 978 MHz); and (2) the requirements of § 91.227. These equipment requirements do not apply to "any aircraft that was not originally certificated with an electrical system, or that has not subsequently been certified with such a system installed, including balloons and gliders." 14 C.F.R. § 91.225(e).

You note that the exception for aircraft to be equipped with a transponder in § 91.215(a)(5) uses the term "engine-driven electrical system" rather than simply "electrical system" as in the ADS-B Out exception in § 91.225(e). In the notice of proposed rulemaking (NPRM) and final rule for ADS-B Out, the FAA did not indicate that the omission of the word "engine-driven" from § 91.225(e) was intended to mean something different from the transponder regulation. In fact, in describing the transponder exception in the ADS-B Out NPRM, the FAA used the term "electrical system" rather than "engine-driven electrical system." 72 FR 56947, 56958 fn.23 (Oct. 5, 2007). As such, we have concluded that the same aircraft excluded from the transponder requirement are excluded from the ADS-B Out equipage. Accordingly, an aircraft that subsequently has been installed with batteries or an electric starter would not be required to equip for ADS-B Out. The FAA may consider a technical amendment in the future to remove any confusion due to the discrepancy between the language in § 91.215(a)(5) and § 91.225(e).

This response was prepared by Anne Moore, an attorney in the Regulations Division of the Office of the Chief Counsel, and coordinated with the Aircraft Certification Service. If you have any additional questions regarding this matter, please contact my office at (202) 267-3073.

Sincerely,

Lorelei Peter
Assistant Chief Counsel for Regulations

David Schober
10919 Green Valley Rd.
Union Bridge, MD 21791

July 7, 2015

Federal Aviation Administration
Office of the Chief Counsel
800 Independence Ave.
Washington, DC 20591

Dear Sirs,

With the deadline for the implementation of ADS-B Out requirements fast approaching, I've come across an item within 14 CFR 91.255 that I would like some clarification on. When you compare and contrast the ability to operate aircraft without electrical systems identified in 91.225 and 91.215, there are specific words that appear to have been left out of the 91.225 regulation. In 91.215(b)(3) it specifies that aircraft not originally certificated with an **engine-driven** electrical system or which has not been subsequently been certificated with such a system . . ., while in 91.225(e) it only states "aircraft that was not originally certificated with an electrical system . . .", full text of these sections are copied below.

91.225
(e) The requirements of paragraph (b) of this section do not apply to any aircraft that was not originally certificated with an electrical system, or that has not subsequently been certified with such a system installed, including balloons and gliders. These aircraft may conduct operations without ADS-B Out in the airspace specified in paragraphs (d)(2) and (d)(4) of this section. Operations authorized by this section must be conducted--
(1) Outside any Class B or Class C airspace area; and
(2) Below the altitude of the ceiling of a Class B or Class C airspace area designated for an airport, or 10,000 feet MSL, whichever is lower.

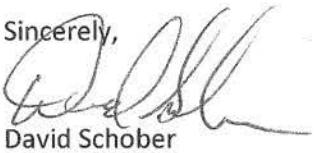
91.215(b)
(3) Notwithstanding paragraph (b)(2) of this section, any aircraft which was not originally certificated with an engine-driven electrical system or which has not subsequently been certified with such a system installed, balloon or glider may conduct operations in the airspace within 30 nautical miles of an airport listed in appendix D, section 1 of this part provided such operations are conducted--
(i) Outside any Class A, Class B, or Class C airspace area; and
(ii) Below the altitude of the ceiling of a Class B or Class C airspace area designated for an airport or 10,000 feet MSL, whichever is lower;

While this difference may seem insignificant, it has implications on a significant number of aircraft, and the potential expense of equipping these aircraft with not only the ADS-B equipment, but also Transponders and Altitude Encoders. There are a number of aircraft that were originally certified with

no electrical system, but for safety purposes have had batteries and electric starters installed to prevent hand propping accidents. Likewise, many more have batteries installed to supply power for communications radios or anti-collision lights. As currently written, 91.225 could be construed to require these aircraft to have ADS-B equipment installed if they were to operate within the airspace that an aircraft without an electrical system would otherwise be allowed. I suspect that when drafting this regulation, the intent was to have the same exception as identified in 91.215(b). I have been unable to find any definition for "Electrical System" within 14 CFR, and depending on who is looking at a specific aircraft, the simple installation of a battery to power a communications radio could be considered an electrical system. My intent is to elicit from your office a legal interpretation that the term "Electrical System" as stated within 91.225 has the same meaning as "Engine-Driven Electrical System" as stated in 91.215. I suspect that during the comment phase of the ADS-B NPRM, everyone was more concerned with the technical aspects of an ADS-B system, and the difference in text of "Engine-Driven Electrical System", and "Electrical System" was overlooked since the owners and operators of aircraft without Engine-Driven Electrical Systems most likely didn't even read, much less comment on the NPRM.

I thank you for your consideration in this matter.

Sincerely,



David Schober