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

NOV -5 2014

David Josephson
[redacted]

Re: Lighting Systems for Experimental Amateur-Built Aircraft

Dear Mr. Josephson:

This letter responds to your June 26, 2014 request for a legal interpretation regarding the aircraft lighting systems required to operate an experimental amateur-built (E-AB) aircraft at night. In your letter, you ask three questions regarding these lighting systems. You ask whether an experimental aircraft builder can obtain "approval" for a lighting system, as required by § 91.205 of Title 14 of the Code of Federal Regulations (14 CFR). You also ask whether the lighting standards in 14 CFR part 23 would satisfy § 91.205's requirement of an "approved" lighting system. Finally, assuming that the part 23 lighting requirements apply, you ask whether FAA regulations allow you to conduct your own measurements, or rely on a manufacturer's measurements, to determine compliance with the part 23 standards. For the reasons set out below, the FAA does not broadly pre-approve lighting systems for use in all E-AB aircraft. Furthermore, the lighting standards in part 23, by their own terms, do not apply to E-AB aircraft. For certain E-AB aircraft these standards may be appropriate; however, that determination is made on a case-by-case basis. We recommend that you contact your local Flight District Standards Office (FSDO) for guidance specific to your aircraft.

The FAA, as a general matter, grants fewer operating privileges to an E-AB aircraft than to an aircraft with a standard airworthiness certificate. Section 91.319 contains many of the limitations associated with E-AB operations. In particular, § 91.319(d) restricts an E-AB aircraft to daytime visual flight rules (VFR) operations, "unless otherwise specifically authorized by the Administrator."

Section 91.205, which you reference in your first question, provides instrument and equipment requirements for powered civil aircraft. Subparagraph (a) of that section limits the application of § 91.205 to "civil aircraft with a standard category U.S. airworthiness certificate." Therefore, by its own terms, this section would not apply to an E-AB aircraft. In many cases, however, the operating limitations attached to an E-AB aircraft's experimental certificate will only permit nighttime operations if the aircraft is equipped in accordance with § 91.205.[1]

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[1] Paragraph 4104.b of FAA Order 8130.2G CHG 1, *Airworthiness Certification of Aircraft and Related Products*, lists the operating limitations prescribed to experimental aircraft. Subparagraph 4104.b(8) states that "[a]fter completion of phase I testing, unless appropriately equipped for night and/or instrument flight *in*

Assuming that an E-AB aircraft's experimental certificate included an operating limitation requiring the aircraft to be equipped in accordance with § 91.205 as a precondition to nighttime VFR operations, subparagraph (c) of that section would require the aircraft to have, among other things, "approved position lights" and "an approved aviation red or aviation white anticollision light system" before the aircraft could be operated under nighttime VFR. With respect to specific components, however, the FAA stated in a 2009 legal interpretation,

> *[f]or amateur-built aircraft, there are no FAA-approved [components].* In order for an experimental airworthiness certificate to be issued under 14 CFR § 21.191(g) for an amateur-built aircraft, the FAA must find that the aircraft complies with acceptable aeronautical standards and practices. You should contact the Flight Standards District Office for your geographic area for further information . . . .

Legal Interpretation to Mr. William P. Rourke (Feb. 2, 2009) (emphasis added). The guidance in our 2009 letter applies equally here. In essence, the FAA does not pre-approve components *specifically for installation on E-AB aircraft*. This means that the FAA does not issue parts manufacturer approvals or technical standard order authorizations for lighting systems specifically to be used in E-AB aircraft.

This is not to say that the FAA would not accept or approve any position or anticollision lighting systems on E-AB aircraft, in satisfaction of § 91.205, for nighttime VFR operations. Given the variation among experimental designs, however, such a determination is made on a case-by-case basis. As your letter suggests, it would be appropriate for an E-AB owner/operator to rely on the approved lighting standards set out in the FAA's various airworthiness standards. For example, for an aircraft that would, if not for its defining experimental characteristics (e.g., being amateur-built) receive a standard-category airworthiness certificate, the owner/operator should refer to part 23's airworthiness standards for standard-category aircraft.

Your final question asks, assuming that the part 23 lighting requirements applied, whether FAA regulations would allow you to either conduct your own measurements or rely on a manufacturer's measurements to determine compliance. We reiterate that part 23 lighting requirements, by their own terms, apply only to aircraft with a standard airworthiness certificate.[2] If you would like FAA authorization to operate your aircraft at night, we recommend that you contact your local FSDO for guidance specific to your E-AB aircraft. FAA inspectors will assist you in determining which airworthiness standards are most appropriate for your E-AB aircraft, and what equipment could best meet those standards.

I trust this information responds to your inquiry. This response was prepared by Benjamin Jacobs, an attorney in the International Law, Legislation, and Regulations Division of the

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accordance with 14 CFR § 91.205, this aircraft is to be operated under [visual flight rules], day only." (Emphasis added.)

[2] In particular, § 23.1 states "this part prescribes airworthiness standards for . . . airplanes in the normal, utility, acrobatic, and commuter categories."

Office of the Chief Counsel, and was coordinated with the Aircraft Engineering Division (AIR-100) of the Aircraft Certification Service. If you need further assistance, please contact our office at (202) 267-3073.

Sincerely,

Mark W. Bury
Assistant Chief Counsel for
International Law, Legislation, and Regulations