Operating Experimental and S-LSA Aircraft in Flying Clubs (V5.0): 2/9/2023

A popular question for the flying club team is whether a flying club may operate an experimental and/or light Sport aircraft. The very next question is generally about members of flying clubs receiving flight training in such aircraft. As often happens with the regulations, the answer to both questions is "may be" and depends a great deal on a club's structure and operational behaviors.

1 Introduction

This revision, V5.0, includes all known applicable FAA regulations and orders to date (2/9/2023), and also includes relevant wording from the February 8th 2023 FAA Ruling: "Notification of Policy for Implementation of the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 for Flight Training, Checking, and Testing in Experimental Aircraft".

This is the new FAA rule that implements the H.R.7776 - James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, that became law on December 23rd 2022. The Act changed the July 2021 de facto FAA ruling regarding flight training in special category aircraft, including experimental. For more information on the ruling and the subsequent act that changed it, see the February 2023 *Club Connector* Newsletter Question of the Month

As well as reiterating that flight training in an experimental aircraft without a LODA does not include any commercial operations or "broadly offering flight training", the new rule includes some useful scenarios to help us understand what is, and isn't, permitted under the rule.

In particular, for flying clubs:

Scenario C: Four people co-own an experimental aircraft as part of a flying club. One of these people needs to get a flight review in the aircraft, so that person hires a flight instructor and pays the instructor for the training, plus pays a pre-arranged hourly rate that covers fuel used during the flight, as well as ongoing maintenance costs. Each co-owner pays the same hourly rate as a part of a co-ownership contract. Members of the flying club do not expect monetary gain or profit, but rather the fee is in place to cover the costs of owning, operating, and maintaining the aircraft. This scenario is permissible under the Act without a LODA.

2 Summary:

Cutting to the chase, the table below summarizes our findings, but this is predicated on a club operating correctly, and legitimately, by following the rules of the FAA and the local airport operator. To be very clear, we are referring to true flying clubs—non-profit social clubs—and not flight schools or other commercial operators.

Aircraft	Can a club lease it?	Members' use for flight training?
LSA	Yes	Yes
S-LSA	Yes	Yes
E-LSA	No	Yes
E-AB	Yes	Yes

Main take-aways:

1. An E-LSA cannot be leased by a club. Odd, but true. More on this, later.
2. All flying clubs whether operating standard airworthiness category or special category aircraft should be non-profit social organizations and club aircraft should never, ever, be used "for compensation or hire". This includes payment for "introductory rides" and the use of the aircraft for flight training to non-members. Not only is this unfair to legitimate commercial operators, but it is also prohibited by FAA regulations.
3. Owners of aircraft, and by extension, members of flying clubs, may use experimental and light sport aircraft for flight training and may compensate the instructor. See Club Connector January 2018 Question of the Month.
4. The above is based on and supported by:
    a. FAA Order 8900.1, Volume 3, Chapter 11, Section 1 *"Use of Aircraft Issued Experimental Certificates in Flight Training for Compensation or Hire".* (Now cancelled)
    b. "Experimental Flight training for Hire or Compensation"
    c. Can a CFI Use an Airplane Experimental Light-Sport Aircraft (E-LSA) For Flight Training and Rental?
    d. AOPA Flying Clubs *Club Connector* Newsletter, Question of the Month, August 2019.
    e. AOPA Flying Clubs Club Connector Newsletter, Question of the Month, November 2019

Some of you are probably reaching for your keyboards to fire of an email about LODAs (Letters of Deviation Authority) that are required to permit certain operations in experimental aircraft (including E-LSA) otherwise prohibited by the regulations. The fact is, a LODA is not required for owners receiving compensated flight training in their aircraft but is required when an owner (or operator) wants to provide an experimental aircraft for the purpose of conducting flight training operations. For example:

1. The owner of an experimental amateur built, or experimental light sport aircraft is a CFI and wants to use the aircraft to provide flight instruction to "the public". A LODA is required.
2. A flight school (or FBO) wants to use experimental aircraft for flight instruction (and also probably "provide" the CFI). A LODA is required.
3. Anyone wants to rent an experimental aircraft and receive compensation for its use. A LODA is required.

So, most readers can stop here. The answer is "yes"—to both operating an experimental aircraft (and light sport) in a (true) flying club, and members may use it for their individual flight training needs.

For those you who want to understand the genesis of such a simple conclusion, read on!

3 The Details:

Understanding and using the correct nomenclature is very important here, so we will start by reviewing some often-confused sections of the regulations and supporting documents, which will then lead us to the answers.

Firstly, we'll review the different types of airworthiness certificates.

3.1 Airworthiness Certificates:

Details are found in FAR Part 21 Subpart H

The regulations tell us that there are, in general, two main airworthiness certificate types—Standard and Special.

3.1.1 Standard Airworthiness:

https://www.faa.gov/aircraft/air_cert/airworthiness_certification/std_awcert/

https://www.faa.gov/aircraft/air_cert/airworthiness_certification/std_awcert/std_awcert_regs/regs/

This is the certificate level used for aircraft such as Cessna C172, Piper Cherokee, Boeing 737, etc. There are several categories of standard airworthiness certificates:

- Normal (FAR Part 23 defines Normal, Utility, Acrobatic and Commuter airplanes)
- Utility (Some aircraft are **certified** in both normal and utility, with W&B differences. e.g., C172)
- Acrobatic (Such as my A152 Aerobat)
- Commuter
- Transport (FAR Part 25 defines transport airplanes)
- Manned free balloons
- Special classes

A standard airworthiness certificate remains valid provided that the aircraft continues to meet its approved type design, is in a condition for safe operation and that maintenance, preventative maintenance and alterations are performed in accordance with FAR parts 21, 43, and 91.

3.1.2 A Diversion to Consider the Recent Part 23 Rewrite:

Note that Part 23, recently brought to the fore by the "Part-23 rewrite", pertains to 14 CFR Part 23 - AIRWORTHINESS STANDARDS: NORMAL CATEGORY AIRPLANES. For more information, see:

https://www.aopa.org/news-and-media/all-news/2016/july/01/aopa-urges-faa-to-enact-part-23-changes-quickly

https://www.aopa.org/advocacy/advocacy-briefs/understanding-part-23-rewrite

On March 9, 2016, the FAA published a notice of proposed rulemaking entitled "Revision of Airworthiness Standards for Normal, Utility, Acrobatic, and Commuter Category Airplanes" (Part 23 NPRM). The purpose of the rulemaking was to amend the airworthiness standards for normal, utility,

acrobatic and commuter category airplanes certified under 14 CFR Part 23, by removing the current prescriptive design requirements and replacing them with performance-based airworthiness standards.

Under the final rule's provisions, categories such as utility, aerobatic, and commuter will be eliminated for future Part 23 airplane certifications. Instead, four levels of performance and risk will be used, based on the aircraft's maximum seating capacity.

Furthermore, under a change to the proposed 14 CFR 23.10, now to be numbered 14 CFR 23.2010, an applicant may use consensus standards acceptable to the FAA to demonstrate how compliance with Part 23 will be achieved. The change creates flexibility for applicants in developing means of compliance, and identifies consensus standards that the FAA, and other authorities, may find acceptable—as proposed by the Part 23 Reorganization Aviation Rulemaking Committee that issued its report on certification reform in 2011.

The final rule went into effect on August 30th, 2017.

https://www.aopa.org/news-and-media/all-news/2016/december/16/part-23-reform-faa-releases-final-rule-on-small-aircraft-certification

https://www.federalregister.gov/documents/2016/12/30/2016-30246/revision-of-airworthiness-standards-for-normal-utility-acrobatic-and-commuter-category-airplanes

3.1.3 Special Airworthiness:

https://www.faa.gov/aircraft/air_cert/airworthiness_certification/sp_awcert/

There are several categories of special airworthiness certificates, as defined in FAR Part 21, including:

- Primary. Simple designs and intended exclusively for pleasure and personal use
- Limited. Applies to certain civilian warbirds
- Restricted. Specialty types such as used for crop dusting, survey, etc.
- Special Flight Permit. Also known as Ferry Permits
- **Special Light Sport, as defined in FAR 21.190**
- **Experimental, as defined in FAR 21.191**

We'll get back to the case of the Special Light Sport (S-LSA) category a bit later, but now let's dig into the case of experimental airworthiness certificates.

3.1.4 Experimental Certificates:

Experimental certificates are issued for the following purposes, as detailed in FAR 21.191.

(a) Research and development. Testing new aircraft design concepts, new aircraft equipment, new aircraft installations, new aircraft operating techniques, or new uses for aircraft. The R&D of electrically propelled airport would likely fit here.

(b) Showing compliance with regulations. Conducting flight tests and other operations to show compliance with the airworthiness regulations including flights to show compliance for issuance of type and supplemental type certificates, flights to substantiate major design changes, and flights to show compliance with the function and reliability requirements of the regulations.

(c) Crew training. Training of the applicant's flight crews.

(d) Exhibition. Exhibiting the aircraft's flight capabilities, performance, or unusual characteristics at air shows, motion picture, television, and similar productions, and the maintenance of exhibition flight proficiency, including (for persons exhibiting aircraft) flying to and from such air shows and productions.

(e) Air racing. Participating in air races, including (for such participants) practicing for such air races and flying to and from racing events.

(f) Market surveys. Use of aircraft for purposes of conducting market surveys, sales demonstrations, and customer crew training only as provided in § 21.195.

(g) Operating amateur-built aircraft. Operating an aircraft the major portion of which has been fabricated and assembled by persons who undertook the construction project solely for their own education or recreation.

(h) Operating primary category kit-built aircraft. Operating a primary category aircraft that meets the criteria of § 21.24(a)(1) that was assembled by a person from a kit manufactured by the holder of a production certificate for that kit, without the supervision and quality control of the production certificate holder under § 21.184(a).

(i) Operating light-sport aircraft. Operating a light-sport aircraft that—

(1) Has not been issued a U.S. or foreign airworthiness certificate and does not meet the provisions of §103.1 of this chapter. An experimental certificate will not be issued under this paragraph for these aircraft after January 31, 2008; No longer applicable.

(2) Has been assembled—

(i) From an aircraft kit for which the applicant can provide the information required by §21.193(e); and

ii) In accordance with manufacturer's assembly instructions that meet an applicable consensus standard; or

(3) Has been previously issued a special airworthiness certificate in the light-sport category under §21.190.

Note—this is the regulation that permits an S-LSA to be "converted" to an E-LSA, so removing the need to comply with consensus standards and the manufacturers operating limitations. Be aware that this has consequences in terms of operations such as leasing and who can perform maintenance and inspections.

So, we now see that the term "Experimental" is quite broad, but for our purposes we can narrow our focus to Experimental Amateur Built (E-AB) and Experimental Light Sport (E-LSA).

Before we go any further, we need to better understand the bigger term, Light Sport Aircraft (LSA).

3.1.5 Light Sport Aircraft:

Light Sport Aircraft (LSA) is not a certification classification as such but rather is a specification. An aircraft, other than a helicopter or powered lift, can be called an LSA if it meets the following specifications:

- Maximum takeoff weight of 1,320 lbs. or less (1,430 lbs. for water operations)
- Maximum airspeed (V_h) of 120 knots CAS (level flight, max continuous power, standard conditions)
- For a glider, a maximum never-exceed speed (V_{ne}) of 120 knots or less
- A V_{S1} (stall speed without flaps) not more than 40 knots CAS (at max takeoff weight and most critical CG)
- Seating for no more than 2 people (including the pilot)
- A single, reciprocating engine. (The word "reciprocating" is the reason why electrically propelled aircraft cannot currently be operated as LSA, even if they meet all other criteria.)
- A fixed pitched propeller (or ground-adjustable). Powered gliders must have the auto-feathering capability if equipped with an adjustable prop
- For gyroplanes, a fixed-pitch, semi-rigid, teetering blade rotor system
- A non-pressurized cabin
- Fixed landing gear, except for aircraft operating on water and gliders, which may have fixed or retractable gear

Note that LSA specifications may apply to aircraft with very different airworthiness certificate types. An existing standard category aircraft if, since its original certification, has continued to meet the above specifications, may be operated as a Light Sport Aircraft. The original airworthiness classification will not change (and so neither will its maintenance and inspection requirements), but within the above constraints, the aircraft may be operated by a Sport Pilot.

For example, an Aeronca Champ is probably certificated with a Standard airworthiness certificate, but if it also meets the LSA specifications, it can be flown by a Sport Pilot. Similarly, a Sonex Experimental-Amateur Built aircraft will also likely meet the LSA specification and so can be flown by a pilot exercising the privileges and limitations of a sport pilot airman certificate. See the list of existing-model aircraft that might (recall the "has continued to meet" condition) comply with LSA specifications.

Aircraft manufactured explicitly as LSA are not certificated by the FAA in the accepted sense and do not have "type" certificates. They do, however, comply with FAA-accepted ASTM Consensus Standards. Such LSA can either be factory built, becoming Special Light Sport Aircraft (S-LSA), or built from a kit conforming to consensus standards and become Experimental Light Sport Aircraft (E-LSA). A great deal more can be written about LSA, but for this article, let's acknowledge that the industry and the aircraft manufacturer dictate the manner in which an LSA shall be operated. The former is via the consensus standards, and the latter is via the manufacturers operating limitations (more later).

3.1.6 Special Light Sport Aircraft:

We are now ready to look at Special Light Sport aircraft, as defined in §21.190.

The FAA issues a special airworthiness certificate in the light-sport category to operate a light-sport aircraft, other than a gyroplane. There are a number of sections in § 21.190, but basically, an S-LSA is a factory-built aircraft, built by an approved manufacturer to the previously mentioned consensus standards, and that conforms with the LSA specifications. To be eligible for a special airworthiness certificate in the light-sport category, the applicant (manufacturer) must provide the FAA with statements of conformance and compliance, and state that the manufacturer will monitor and correct safety-of-flight issues through the issuance of safety directives and a continued airworthiness system that meets the identified consensus standard. The manufacturer must also provide:

(i) The aircraft's operating instructions
(ii) The aircraft's maintenance and inspection procedures
(iii) The manufacturer's statement of compliance, as per §21.190(c)
(iv) The aircraft's flight training supplement

An S-LSA cannot be modified unless so approved by manufacturer. Preventative maintenance may be performed by a Sport Pilot or higher airman's certificate, if authorized by the manufacturer. General maintenance and inspections (annual condition inspection and 100-hour if operated for compensation or hire) are performed by an A&P or a Light Sport Repairman-Maintenance (LSRM). An S-LSA may be flown at night and under IFR only if authorized by the manufacturer, and by an appropriately certificated airman.

Well known S-LSA are the Vans RV-12, Flight Design CT series, Legend Cub, Tecnam Bravo, Vashon Ranger, etc.
Lists of S-LSA can be found here:
https://www.faa.gov/aircraft/gen_av/light_sport/media/SLSA_Directory.xlsx
…and here:
https://www.bydanjohnson.com/slsa-list/

3.1.7 Experimental Light Sport Aircraft:

As we have seen, an S-LSA is factory built to consensus standards. The FAA recognize that a manufacturer may wish to offer the same make and model, but in kit form. So now we have a mix of an LSA and a home-built aircraft. To cover this case—and several manufacturers have gone down this path including Vans with the RV-12—the FAA created the Experimental-Light Sport (E-LSA), under the experimental certification type.

The taxonomy for LSA is therefore:

S-LSA: Special airworthiness certificate in the category Special Light Sport.
E-LSA: Special airworthiness certificate in the category Experimental, with the purpose of operating a light sport aircraft.
As we saw earlier, to be issued an E-LSA certificate the aircraft must be built in accordance with the manufacturer's assembly instructions that meet an applicable consensus standards, or the aircraft was previously issued a special airworthiness certificate in the light-sport category under FAR 21.190 (that is, was an S-LSA). The actual requirements for E-LSA certification are defined in FAR 21.193(e).

In part, this requires:
(1) Evidence that at least one aircraft of the same make and model was manufactured and assembled by the aircraft kit manufacturer and issued a special airworthiness certificate in the light-sport category
(2) The aircraft's operating instructions
(3) The aircraft's maintenance and inspection procedures
(4) The manufacturer's statement of compliance for the aircraft kit used in the aircraft assembly that meets §21.190(c), except that instead of meeting §21.190(c)(7), the statement must identify assembly instructions for the aircraft that meet an applicable consensus standard
(5) The aircraft's flight training supplement

Inspections of E-LSA aircraft can be performed by an A&P, Light Sport Repairman – Maintenance (LSRM), and a Light Sport Repairman – Inspection (LSRI), but an LSRI can *only* perform annual condition inspections on E-LSA owned by that repairman. As an aside, note that LSRM or LSRI cannot perform inspections on any E-AB aircraft, but can perform maintenance, as "anyone" can perform maintenance on experimental aircraft. Only the original builder or an A&P can perform inspections on E-AB aircraft.

For an interesting discussion on S-LSA and E-LSA aircraft, see the FAAs "The Light Sport Aircraft Buyer's Guide" that includes tips on purchasing LSA and information on maintenance requirements.

We now have just one more airworthiness case to consider—that of the Experimental-Amateur Built aircraft (E-AB).

3.1.8 Experimental Amateur Built Aircraft:

We learnt earlier than an experimental certificate may be issued for operating an amateur-built aircraft, "the major portion of which has been fabricated and assembled by persons who undertook the construction project solely for their own education or recreation". This is more commonly called a "homebuilt" aircraft. See FAR 21.191(g) and FAR 21.193.

The FAA provides the following information for Airworthiness Certification for Amateur-Built Aircraft:

What type of airworthiness certificate is my amateur-built aircraft eligible for?

An amateur-built aircraft is eligible for a special airworthiness certificate in the experimental category for the purpose of operating amateur-built aircraft. You must provide evidence to the FAA that the "major portion" (more than fifty percent) of the aircraft was fabricated and assembled by an individual or group of individuals; that the project is for educational and recreational purposes; and that the aircraft complies with acceptable aeronautical standards and practices.

What documents do I need to submit for my amateur-built aircraft to receive an experimental special airworthiness certificate?

In addition to the requirements for special airworthiness certification in this category, you must submit the following documents to your nearest FAA Field Office:

- AC Form 8050-3, "Certificate of Aircraft Registration"
- Aircraft Builders Log
- Sufficient information to clearly identify the aircraft, such as photographs or three-view drawings
- A notarized FAA Form 8130-12 (PDF), "Eligibility Statement, Amateur-Built Aircraft"
- A program letter in accordance with 14 CFR section 21.191(g)

Will there be any restrictions or operating limitations placed on my amateur-built aircraft?

Yes. Each aircraft issued an experimental airworthiness certificate has operating limitations attached. During flight-testing, specific limitations (phase 1) are prescribed for you to show the aircraft is capable of safe flight (compliance to 14 CFR section 91.319 "Aircraft having experimental certificates - Operating limitations".) After successful flight testing, more liberal (Phase II) operating limitations become effective. Examples of operating limitations for amateur-built aircraft are in FAA Order 8130.2, "Airworthiness Certification of Aircraft and Related Products"

This last question provides a nice segue into the next major topic in this discussion—that of what a person, flying club member, etc., can and cannot do in LSA, S-LSA, E-LSA and E-AB aircraft.

4 Operating Limitations:

This really is the nub of this discussion. Now that we understand the certification aspects of LSA, S-LSA, E-LSA and E-AB aircraft, we need to discover the limitations that the FAA (and perhaps manufacturers) impose on aircraft so certified.

4.1 Operating limitations for general Light Sport Aircraft:

In general, a pilot may operate an LSA according to the privileges and limitations of their airman's certificate. For example, a Private Pilot may operate an aircraft that conforms to the LSA specifications within the privileges and limitations of the PPL. Similarly, a Sport Pilot may operate the same aircraft within the privileges and limitations of the Sport Pilot certificate. The same aircraft can be operated in different ways as determined by the airman's certificate level and the equipment in the airplane. For instance, a Sport Pilot may not fly the aircraft at night, above 10,000' or if not able to see the ground—whereas a Private Pilot may fly a properly equipped (and approved) LSA without such limitations.

In additional to conforming with the privileges and limitations of a pilot's certificate, we must now determine if there are additional operational limitations for the two variants of LSA—namely S-LSA and E-LSA.

4.2 Operating limitations for Special Light Sport Aircraft (S-LSA):

The operating limitations for S-LSA are defined in FAR 91.327.

FAR 91.327 Aircraft having a special airworthiness certificate in the light-sport category: Operating limitations.

(a) No person may operate an aircraft that has a special airworthiness certificate in the light-sport category for compensation or hire except—

(1) To tow a glider or an unpowered ultralight vehicle in accordance with §91.309 of this chapter; or

(2) To conduct flight training.

(b) No person may operate an aircraft that has a special airworthiness certificate in the light-sport category unless—

(1) The aircraft is maintained by a certificated repairman with a light-sport aircraft maintenance rating, an appropriately rated mechanic, or an appropriately rated repair station in accordance with the applicable provisions of part 43 of this chapter and maintenance and inspection procedures developed by the aircraft manufacturer or a person acceptable to the FAA;

(2) A condition inspection is performed once every 12 calendar months by a certificated repairman (light-sport aircraft) with a maintenance rating, an appropriately rated mechanic, or an appropriately rated repair station in accordance with inspection procedures developed by the aircraft manufacturer or a person acceptable to the FAA;

(3) The owner or operator complies with all applicable airworthiness directives;

(4) The owner or operator complies with each safety directive applicable to the aircraft that corrects an existing unsafe condition. In lieu of complying with a safety directive an owner or operator may—

(i) Correct the unsafe condition in a manner different from that specified in the safety directive provided the person issuing the directive concurs with the action; or

(ii) Obtain an FAA waiver from the provisions of the safety directive based on a conclusion that the safety directive was issued without adhering to the applicable consensus standard;

(5) Each alteration accomplished after the aircraft's date of manufacture meets the applicable and current consensus standard and has been authorized by either the manufacturer or a person acceptable to the FAA;

(6) Each major alteration to an aircraft product produced under a consensus standard is authorized, performed and inspected in accordance with maintenance and inspection procedures developed by the manufacturer or a person acceptable to the FAA; and

(7) The owner or operator complies with the requirements for the recording of major repairs and major alterations performed on type-certificated products in accordance with §43.9(d) of this chapter, and with the retention requirements in §91.417.

(c) No person may operate an aircraft issued a special airworthiness certificate in the light-sport category to tow a glider or unpowered ultralight vehicle for compensation or hire or conduct flight training for compensation or hire in an aircraft which that person provides unless within the preceding 100 hours of time in service the aircraft has—

(1) Been inspected by a certificated repairman with a light-sport aircraft maintenance rating, an appropriately rated mechanic, or an appropriately rated repair station in accordance with inspection procedures developed by the aircraft manufacturer or a person acceptable to the FAA and been approved for return to service in accordance with part 43 of this chapter; or

(2) Received an inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter.

(d) Each person operating an aircraft issued a special airworthiness certificate in the light-sport category must operate the aircraft in accordance with the aircraft's operating instructions, including any provisions for necessary operating equipment specified in the aircraft's equipment list.

(e) Each person operating an aircraft issued a special airworthiness certificate in the light-sport category must advise each person carried of the special nature of the aircraft and that the aircraft does not meet the airworthiness requirements for an aircraft issued a standard airworthiness certificate.

(f) The FAA may prescribe additional limitations that it considers necessary.

To summarize, an S-LSA cannot be used for operations involving compensation or hire—that is, the receipt of something of value being conditional on the operation of the aircraft, such as carrying people for reward, or using the aircraft to deliver cargo. Note that this is a limitation on the airplane, not just on the pilot's certificate, such as PPL or CPL. Nevertheless, FAR 91.327 explicitly excludes flight training from this limitation. In other words, a flight school, a non-profit flying club and even an independent CFI is not prohibited from using an S-LSA for the purposes of compensated flight instruction.

4.3 Operating limitations for Aircraft having Experimental Certificates (E-LSA and E-AB):

The operating limitations for aircraft having experimental certificates are defined in FAR 91.319.

FAR 91.319 Aircraft having experimental certificates: Operating limitations.

(a) No person may operate an aircraft that has an experimental certificate—

(1) For other than the purpose for which the certificate was issued; or

(2) Carrying persons or property for compensation or hire.

(b) No person may operate an aircraft that has an experimental certificate outside of an area assigned by the Administrator until it is shown that—

(1) The aircraft is controllable throughout its normal range of speeds and throughout all the maneuvers to be executed; and

(2) The aircraft has no hazardous operating characteristics or design features.

(c) Unless otherwise authorized by the Administrator in special operating limitations, no person may operate an aircraft that has an experimental certificate over a densely populated area or in a congested airway. The Administrator may issue special operating limitations for particular aircraft to permit takeoffs and landings to be conducted over a densely populated area or in a congested airway, in accordance with terms and conditions specified in the authorization in the interest of safety in air commerce.

(d) Each person operating an aircraft that has an experimental certificate shall—

(1) Advise each person carried of the experimental nature of the aircraft;

(2) Operate under VFR, day only, unless otherwise specifically authorized by the Administrator; and

(3) Notify the control tower of the experimental nature of the aircraft when operating the aircraft into or out of airports with operating control towers.

(e) No person may operate an aircraft that is issued an experimental certificate under §21.191(i) (Ed. "Fat ultralight rule") of this chapter for compensation or hire, except a person may operate an aircraft issued an experimental certificate under §21.191(i)(1) for compensation or hire to—

(1) Tow a glider that is a light-sport aircraft or unpowered ultralight vehicle in accordance with §91.309; or

(2) Conduct flight training in an aircraft which that person provides prior to January 31, 2010.

(f) No person may lease an aircraft that is issued an experimental certificate under §21.191(i) of this chapter, except in accordance with paragraph (e)(1) of this section.

(g) No person may operate an aircraft issued an experimental certificate under §21.191(i)(1) of this chapter to tow a glider that is a light-sport aircraft or unpowered ultralight vehicle for compensation or hire or to conduct flight training for compensation or hire in an aircraft which that persons provides unless within the preceding 100 hours of time in service the aircraft has—

(1) Been inspected by a certificated repairman (light-sport aircraft) with a maintenance rating, an appropriately rated mechanic, or an appropriately rated repair station in accordance with inspection procedures developed by the aircraft manufacturer or a person acceptable to the FAA; or

(2) Received an inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter.

(h) The FAA may issue deviation authority providing relief from the provisions of paragraph (a) of this section for the purpose of conducting flight training. The FAA will issue this deviation authority as a letter of deviation authority.

(1) The FAA may cancel or amend a letter of deviation authority at any time.

(2) An applicant must submit a request for deviation authority to the FAA at least 60 days before the date of intended operations. A request for deviation authority must contain a complete description of the proposed operation and justification that establishes a level of safety equivalent to that provided under the regulations for the deviation requested.

(i) The Administrator may prescribe additional limitations that the Administrator considers necessary, including limitations on the persons that may be carried in the aircraft.

(j) No person may operate an aircraft that has an experimental certificate under §61.113(i) of this chapter unless the aircraft is carrying not more than 6 occupants.

Of interest to us here is FAR 91.319(a) and (h):

(a) No person may operate an aircraft that has an experimental certificate—

(1) For other than the purpose for which the certificate was issued; or

(2) Carrying persons or property for compensation or hire.

(h) The FAA may issue deviation authority providing relief from the provisions of paragraph (a) of this section for the purpose of conducting flight training. The FAA will issue this deviation authority as a letter of deviation authority.

(1) The FAA may cancel or amend a letter of deviation authority at any time.

(2) An applicant must submit a request for deviation authority to the FAA at least 60 days before the date of intended operations. A request for deviation authority must contain a complete description of the proposed operation and justification that establishes a level of safety equivalent to that provided under the regulations for the deviation requested.

For the case of a flying club, we know from Section 10.6-Flying Clubs of FAA Order 5190.6B Change 2, that (for equity clubs) the ownership of the club aircraft must be vested in the name of the flying club or (equally) owned by all its members. Furthermore, our investigation into the regulations and letters of interpretation for clubs that lease aircraft revealed that the FAA extends the notion of "ownership" to flying clubs that lease aircraft on an exclusive and long-term basis. (See Question of the Month: Can a flying club lease an aircraft, and if so, how does it work?). This point here is that "ownership" does not influence whether a particular flight is for compensation or hire, rather, it is the way in which the aircraft is operated that determines this.

Moreover, we have previously clarified (in an article on the topic of 100-hour inspections) that a properly operating club, being a non-commercial social entity, is neither providing an aircraft for compensation or hire, nor indeed providing it for the purpose of flight training. As long as members can use a CFI of their choice, they (the members) may use the aircraft for purposes of individual flight training, just as though they were the sole owner of the aircraft.

A club member is clearly not providing or operating the aircraft for compensation (quite the contrary in fact—they are paying for it) and the CFI is being paid for providing instructional services, not to fly the aircraft for compensation or hire.

So, members who are owners of the airplane or club, including members who lease aircraft with ownership-like powers, may use the aircraft for purposes of individual flight training and may compensate a CFI for services rendered.

Recall that flight training is not considered as carrying persons for compensation or hire, as the instructor is being paid for instructional services, not any form of carriage. If the aircraft itself is being provided by the instructor, owner or operator, for the purposes of conducting flight training, then that does fall under compensation or hire, and the regulations do not permit such operations without a deviation, known as a Letter of Deviation Authority, (LODA).

Earlier versions of this article then did a deep dive into the now cancelled: FAA Order 8900.1 CHG 155: Volume 3 General Technical Administration; Chapter 11 Use of Aircraft Issued Experimental Certificates in Flight Training for Compensation or Hire. As mentioned at the front of this article, a 2021 FAA ruling effectively overrode this Order by issuing the de facto rule: Notification of Policy for Flight Training in

Certain Aircraft. The good news is that this rule was itself overridden by the H.R.7776 - James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, which included the language:

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SEC. 5604.LETTER OF DEVIATION AUTHORITY.
    A flight instructor, registered owner, lessor, or lessee of an
aircraft shall not be required to obtain a letter of deviation
authority from the Administrator of the Federal Aviation Administration
to allow, conduct or receive flight training, checking, and testing in
an experimental aircraft if--
        (1) the flight instructor is not providing both the training
    and the aircraft;
        (2) no person advertises or broadly offers the aircraft as
    available for flight training, checking, or testing; and
        (3) no person receives compensation for use of the aircraft for
    a specific flight during which flight training, checking, or
    testing was received, other than expenses for owning, operating,
    and maintaining the aircraft.
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As of February 8th 2023, the requirements of the above Act were implemented as by a new FAA rule: "Notification of Policy for Implementation of the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 for Flight Training, Checking, and Testing in Experimental Aircraft".

In simple summary, the owner of an experimental aircraft and members of flying clubs that operate experimental aircraft, may receive flight training, and pay the flight instructor, without a LODA. Similarly, an instructor may provide compensated instructional service in an experimental aircraft, without a LODA. Scenario C clarifies the potential confusion over whether club members are providing compensation for the use of club aircraft:

Scenario C: Four people co-own an experimental aircraft as part of a flying club. One of these people needs to get a flight review in the aircraft, so that person hires a flight instructor and pays the instructor for the training, plus pays a pre-arranged hourly rate that covers fuel used during the flight, as well as ongoing maintenance costs. Each co-owner pays the same hourly rate as a part of a co-ownership contract. Members of the flying club do not expect monetary gain or profit, but rather the fee is in place to cover the costs of owning, operating, and maintaining the aircraft. This scenario is permissible under the Act without a LODA.

One other oddity to consider for the case of an E-LSA, is that it cannot be leased "for purpose of conducting solo flights", which is also stated in FAR 91.319(f):
(f) No person may lease an aircraft that is issued an experimental certificate under §21.191(i) of this chapter, except in accordance with paragraph (e)(1) of this section.

This, unfortunately, plainly states that an E-LSA cannot be leased, unless it is operated to tow a glider that is a light-sport aircraft or unpowered ultralight vehicle—rather limited use cases. Why an aircraft built from a kit to the same standards as a factory-built S-LSA cannot be leased to a flying club that can lease the same make and model as an S-LSA, is just strange. There appears to be no such prohibition on the leasing of any E-AB aircraft.

To summarize, within the appropriate FARs and operating limitations, a club may…

Aircraft	Can a club lease it?	Members' use for flight training?
LSA	Yes	Yes
S-LSA	Yes	Yes
E-LSA	No	Yes
E-AB	Yes	Yes

The similar table for the case of a flight school, or any other entity (including independent flight instructors) that *provides* the aircraft for the purposes of flight training is…

Aircraft	Can a school lease it?	Provide for flight training?
LSA	Yes	Yes
S-LSA	Yes	Yes
E-LSA	No	Yes – but only with a LODA
E-AB	Yes	Yes – but only with a LODA

5 Appendix B: Letter of Deviation Authority

As of December 2022, a LODA is not required to provide or receive flight training in an experimental aircraft, as long as compensation is only for instructional services and not for the use of the aircraft itself. We saw above that the FAA does not consider the hourly use fee paid by club members to be compensation for the use of the aircraft.

If, however, you wish to operate an experimental aircraft for compensation or hire—that is compensation is provides for the use of the aircraft itself—then you'll need to apply for a LODA. This situation should never occur in a flying club, but a flight school or FBO may decide to go down this tortuous path. Again, re-read the February 2023 *Club Connector* Newsletter Question of the Month for more insight on this.

Bear in mind that as of writing (February 2023), the wider situation of E-LSA is under review, as is the very specification of LSA in general, as part of the FAA MOSAIC study— Modernization of Special Airworthiness Certificates. This has many roots including the need to address training in (single seat) Ultralight vehicles, as well as other proposals, such as increasing the weight allowance for LSA and removing the limitation that LSA must have a "single reciprocating engines" which currently prohibits LSA from using electrical propulsion (an unintended consequence, if ever there was one).

We believe the following process is still applicable, but you'd be wise to talk with talk with your local FSDO to get the latest information.

5.1 3-293 ISSUANCE OF A LODA FOR THE PURPOSE OF CONDUCTING FLIGHT TRAINING UNDER § 91.319(H).

B. Background.

1) Section 91.319(a) prohibits the operation of an experimental aircraft for other than the purpose for which the certificate was issued or to carry persons or property for compensation or hire. These restrictions prohibit the widespread use of experimental aircraft for flight training for compensation or hire. The FAA recognizes the value of specialized flight training that may only be available in aircraft holding experimental certificates. In the past, the FAA issued exemptions to § 91.319(a) to allow owners to rent their aircraft for the purpose of providing specialized flight training. To reduce the burden on owners and operators, the FAA published a revision to § 91.319 on July 27, 2004. That revision permits the issuance of a deviation to allow a person to conduct flight training in an aircraft that person provides and to receive compensation for that activity. To provide a streamlined and standardized process for the issuance of deviations to permit this flight training to be conducted, the FAA developed a LODA located in the WebOPSS.

2) ASIs may issue flight training deviations using the guidance in this section. ASIs must issue all deviations using the LODA Template A115, Deviation Authority for Conducting Flight Training in Experimental Category Aircraft, found in the part 91 database of the WebOPSS. Use of the WebOPSS will ensure that all deviations have the correct special conditions and provide for national tracking of the deviations. The FAA will issue training deviations to permit the conduct of training that can only be accomplished in aircraft with experimental certificates. LODAs should not be issued to permit flight training in experimental aircraft leading toward the issuance of a pilot certificate, rating, or operating privilege. The exception is for training leading to the issuance of a specific experimental aircraft authorization as required by the aircraft's operating limitations or for rotorcraft gyroplane training at all

levels or for a Sport Pilot Certificate or operating privilege. LODAs also should not be issued to permit flight training such as aerobatics or training leading to the issuance of an endorsement (e.g., tailwheel or pressurized aircraft, or a complex or high-performance airplane). This training is available in aircraft holding Standard Airworthiness Certificates and it is therefore not acceptable to issue a LODA for the purpose of conducting such training. Flight training considered acceptable for the issuance of a LODA consists of:

a. Flight training for the operation of a specific make and model of experimental aircraft.
b. Training for the operation of ultralight vehicles only when conducted in low-mass, high-drag aircraft with an empty weight less than 500 pounds and a maximum speed in level flight with maximum continuous power (VH) less than 87 Knots Calibrated Airspeed (KCAS).
c. Jet unusual attitude and upset training.
d. Instrument competency training for specific make and model of experimental aircraft.
e. Training for a flight review in a specific make and model of experimental aircraft.
f. Formation training for a specific make and model of experimental aircraft.
g. Training for a rotorcraft gyroplane rating or certificate.

Training for a Sport Pilot Certificate or operating privilege. Flight training leading toward the issuance of a Sport Pilot Certificate or LSA operating privilege is to be conducted in an aircraft issued an experimental certificate under § 21.191(i)(1). A LODA should only be issued if an aircraft with other than an experimental certificate under § 21.191(i)(1) is not available for the conduct of this training in the Flight Standard District Office's (FSDO) geographic area. The aircraft used to provide the training must have been owned by the person providing the training prior to January 31, 2010 and that person must have been appropriately certificated or otherwise authorized to provide that training prior to January 31, 2010. LODAs for persons conducting this training will have a maximum duration of 24 months and will be limited to the geographic area of the FSDO's responsibility. FSDOs may terminate a LODA for sport pilot training at its discretion.
i) Other specific training approved by the General Aviation and Commercial Division, AFS-800.

C. Requirements.
1) A person applying to conduct flight training in an experimental aircraft that person provides for compensation or hire must submit an application package to the FSDO in the district in which the training will take place. The application package must include a letter identifying the name and address of the applicant, the name and contact information of the person responsible for the operation, details of the type of training, and the specific aircraft make(s) and model(s) to be used. The applicant must also provide copies of each aircraft's airworthiness certificate, including the FAA-issued operating limitations and a training program, as specified in subparagraph 3-293D.

2) The applicant must provide a training program with enough detail that the ASI is able to determine that the proposed training will meet the intended objectives.

D. FAA Procedure.
1) When the FAA receives an inquiry from a person proposing to conduct flight training in an experimental aircraft, the assigned Operations ASI should determine if the applicant is aware of the LODA process. The ASI should provide the applicant with the information contained in this section as necessary and advise the applicant to schedule a meeting to present the formal application to the FSDO. After receipt of the formal application, the assigned ASI will review the application to ensure that it meets the requirements as outlined in this section. If the proposed training covers areas not authorized by this section, the ASI must advise the applicant that the proposal does not meet FAA guidelines. If the

ASI considers the proposed training to be such that the FAA should consider it even though it is outside of the areas listed in subparagraph 3-293B2), the request must be referred to AFS-800. If the proposed training involves experimental LSA, AFS-800 will coordinate with AFS-600. If the training program meets the requirements of this section, the ASI should coordinate with the airworthiness unit to ensure that the aircraft meets all appropriate airworthiness requirements for the type of experimental airworthiness certificate that it holds. If all of the applicant's submissions meet the requirements of this section, the ASI should enter the applicant's information into the WebOPSS and issue paragraphs A001, A004, and A115 using the guidance provided for the use of WebOPSS.

2) The FSDO review of the training program(s) must ensure that the following information is included:

a. A description of each type of audiovisual aid, mockup, chart, aircraft component, and other special training aids used in any associated ground training (if applicable);
b. A description of each flight simulator or flight training device (FTD) used in any associated training (if applicable);
c. A description of any special equipment used for each phase of training;
d. The qualifications and ratings for each instructor providing flight training or ground training; and
e. NOTE: Instructors must hold a flight instructor certificate appropriate to the flight training to be conducted or be otherwise authorized to conduct flight training in the specific aircraft.
f. e) A training outline that includes the following information:

- The prerequisites for persons receiving ground and flight training, to include minimum pilot certificate, ratings, endorsements (e.g., tailwheel, high performance, complex) training, experience, and knowledge requirements;

NOTE: For flight training in aircraft other than those certificated under § 21.191(i) or in gyroplanes under §21.191(g), pilots receiving training must hold appropriate category and class ratings and have logbook endorsements in accordance with 14 CFR part 61, § 61.31 for the type of aircraft in which the training is to be provided, unless specifically approved by AFS-800.

- A description of each unit of instruction, including the objectives, standards, and planned time for completion; and
- The expected accomplishments and the standards for each stage of training.

3) If the application package and training program are acceptable, the FSDO will review the experimental aircraft's operating limitations to ensure that the proposed training will not be contrary to any limitation other than those for which relief is granted under the LODA. An applicant may also request that the operating limitations for the aircraft intended to be used for flight training be amended to conform to the relief provided by the LODA.

4) Aircraft not inspected in accordance with an FAA-approved inspection program must have an operating limitation requiring a condition inspection within the preceding 100 hours of time in service.

E. Issuance of the Authorization. After completing the review in accordance with subparagraph 3-293D, the FSDO will enter the necessary information into the WebOPSS to issue paragraph A115 for the LODA. The FSDO will enter the operator as a 91J operator. The FSDO will use the operator information to create a 91J operator through the "Maintain Operator Status" function. The FSDO will add operator information, including address, responsible person (91J-training), and specific aircraft information to the database by using "Maintain Operations Specifications" under the pull-down menu. After the FSDO personnel enters the information in accordance with the WebOPSS guidance, select templates A001,

A004, and A115 and complete them in the WebOPSS workspace. FSDO personnel can then sign, activate, and print the three paragraphs. The FAA and the applicant can then sign the completed three-paragraph LODA and issue it to the applicant. FSDO personnel should refer to this order for guidance concerning the WebOPSS system. FSDO personnel may also direct questions concerning the use of the WebOPSS system to the Automated Operations Safety System (OPSS) office.