

Buying an Airplane for Flight Training

What You Need to Know About Experimentals, LSAs, Co-Ownership, and MOSAIC

By Parker Thomas (with significant help from BFF Claude)

If you're considering buying an airplane to continue your training - especially to build the 50 hours of PIC cross-country time required for an instrument rating or the 250 total hours required for a commercial certificate - this document is for you.

Owning or co-owning an airplane can be one of the best decisions you make in your flight training. It gives you schedule flexibility, builds a deeper relationship with one aircraft, and can significantly reduce your per-hour cost for time-building. But the type of airplane you buy determines what you can and can't do with it, especially when it comes to flight training. The rules aren't always intuitive.

This briefing covers five things: what an experimental aircraft actually is, the rules around training in one, the practical limitations of light sport aircraft, how co-ownership works, and what the FAA's new MOSAIC rule changes for the landscape going forward.

1. What Is an Experimental Aircraft?

The word "experimental" is misleading. In everyday English, it suggests something untested or risky. In FAA language, it's an airworthiness category - a regulatory classification that describes how the airplane was certified, not how safe it is to fly.

A standard-category airplane - a Cessna 172, a Piper Archer, a Beechcraft Bonanza - is built in a factory under an FAA-approved Type Certificate and Production Certificate. Every airplane coming off that line is built to the same approved design, inspected to the same standards, and maintained according to the manufacturer's instructions. In exchange for all that oversight, you get a standard airworthiness certificate and essentially no restrictions on how you operate the airplane.

An experimental-amateur built (E-AB) airplane is different. The FAA issues a special airworthiness certificate under [14 CFR §21.191\(g\)](#), and the core requirement is the **51% rule**: the amateur builder must have fabricated and assembled the major portion of the aircraft. That's where the "51%" comes from - the builder does the majority of the work, not a factory. The FAA evaluates this through a series of builder inspections, and for popular kit designs, they use a matrix of fabrication and assembly tasks to determine compliance.

What this means in practice is that each E-AB airplane is hand-built by an individual (or a small group), following plans or a kit from a manufacturer. The design may be proven. The engineering may be excellent. But the build quality depends entirely on who built it and how carefully they did the work.

The RV Example

Van's Aircraft RV series is the most popular kit aircraft in the world, with over 12,000 completed and flying. The design is thoroughly proven - aerodynamically, structurally, and operationally, there is nothing experimental about the design. It has a decades-long safety record across a massive fleet.

But every single one of those 12,000 airplanes was built by a different person in a different garage. Some were built by retired aerospace engineers with decades of composites and sheet metal experience. Some were built by first-time builders who learned as they went. The plans

and the kit are the same; the execution is not. That's why a pre-purchase inspection on an experimental airplane isn't optional - it's even more important than on a factory airplane, because you're evaluating the builder's workmanship, not just the condition of the airframe.

What "Experimental" Means for You as an Owner

The experimental category comes with real advantages and real trade-offs:

Maintenance freedom. As the owner of an E-AB, you can perform your own maintenance, including the annual condition inspection (with appropriate training or a repairman certificate). You are not required to use an A&P mechanic for routine work. This saves significant money and builds deep knowledge of your airplane.

Wider selection of modern aircraft. The experimental market includes airframes that are faster, lighter, and more modern than most of what's available in the certified fleet. Glass cockpits, fuel-injected engines, carbon fiber construction - features that cost a fortune in the certified world are common and affordable in experimentals.

Operating limitations. Every E-AB flies under a set of operating limitations issued by the FAA at the time of airworthiness certification. These typically include a flight test phase (usually 25–40 hours in a geographic area), restrictions on carrying passengers for hire, and - importantly for our purposes - may specify whether IFR operations are permitted. Most E-AB operating limitations do allow IFR when the aircraft is properly equipped.

No manufacturer support structure. If something breaks on a Cessna, you call Cessna for parts or reference their service bulletins. If something breaks on a homebuilt, you're working with the kit manufacturer (if they're still in business), the builder community, and your own knowledge. Van's Aircraft, to their credit, has excellent builder support - but not every kit manufacturer does.

Variable build quality. This is the big one. The airplane might be beautifully built or it might have hidden problems. A thorough pre-purchase inspection by someone experienced with that specific type is essential. You want to look at wiring, plumbing, control rigging, and the builder's documentation and logbooks. A well-built experimental with complete records is a great airplane. A poorly-built one with incomplete logs is a project, not a purchase.

2. Flight Training in Experimental Aircraft

An experimental-amateur built (E-AB) aircraft flies under a special airworthiness certificate with operating limitations defined in [14 CFR §91.319](#). The general rule is that experimental aircraft cannot carry persons or property for compensation or hire. For years, there was confusion about whether that prohibition applied to flight training - specifically, whether paying a CFI to instruct you in your own experimental airplane counted as "compensation or hire."

That question was settled by the 2021 Warbird Adventures court case and the regulatory cleanup that followed. Here is how it stands today, effective December 2, 2024, under the new [14 CFR §91.326](#):

First, some vocabulary. A **Letter of Deviation Authority (LODA)** is a document issued by the FAA that authorizes a specific deviation from operating limitations that would otherwise prohibit an activity - in this case, using an experimental aircraft for compensated flight training. Before the 2024 rule changes, getting a LODA was the only legal way to conduct paid flight instruction in an experimental. The process involved paperwork, FAA approval, and delays. The good news is that for most owner-training scenarios, you no longer need one.

What You Can Do Without a LODA

If you own an experimental aircraft, you can hire a CFI to give you flight training in your airplane. No Letter of Deviation Authority (LODA) is required, provided all three of these conditions are met:

1. The flight instructor is not providing both the training and the aircraft. *You own the airplane; the CFI just shows up and teaches.*
2. Nobody advertises or broadly offers the aircraft as available for training.
3. No one receives compensation for use of the aircraft beyond expenses for owning, operating, and maintaining it.

This covers the most common scenario: you buy an RV-14, a Zenith, a Sonex, or any other E-AB. You hire me or another CFI to train you in it. You pay the CFI for instruction. You pay the operating costs of the airplane yourself. That is completely legal with no paperwork required from the FAA.

What About Co-Owners and Flying Clubs?

This is where it gets interesting for students who want to split the cost. The FAA has specifically addressed this scenario. Here is the example directly from FAA policy:

Four people co-own an experimental aircraft as part of a flying club. One of them needs a flight review, so that person hires a CFI and pays the instructor for the training, plus pays a pre-arranged hourly rate that covers fuel and ongoing maintenance costs. Each co-owner pays the same hourly rate. Members do not expect monetary gain or profit - the fee covers the costs of owning, operating, and maintaining the aircraft.

The FAA confirmed this is permissible without a LODA.¹ This means that if two or three of you go in together on an experimental airplane, each co-owner can receive flight training in that aircraft - from any CFI they hire - without any special authorization, as long as the arrangement is structured as a genuine co-ownership and not a commercial training operation.

What Still Requires a LODA

A LODA is still required if someone wants to provide both the airplane and the instruction to the general public. In other words, if a CFI owns an experimental airplane and advertises it for training to anyone who walks in the door, that requires a LODA under [§91.326\(b\)](#). The distinction is between an owner getting training in their own airplane (no LODA) versus someone running a commercial training operation in an experimental (LODA required).

The Bottom Line for Experimentals

You or a group of co-owners can buy an experimental, hire a CFI, and do any training you want in that airplane - flight reviews, instrument proficiency checks, transition training, even training toward a new rating - without a LODA. The airplane just can't be advertised or held out to the public for training, and the CFI doesn't provide the airplane.

¹FAA Notification of Policy, "Implementation of the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 for Flight Training, Checking, and Testing in Experimental Aircraft," Federal Register Vol. 88, No. 26 (February 8, 2023), Scenario C. Available at: [federalregister.gov/documents/2023/02/08/2023-02600](https://www.federalregister.gov/documents/2023/02/08/2023-02600).

3. Light Sport Aircraft and IFR: What You Can and Can't Do

This is the section where students get confused, because the answer is “it depends” and the nuance matters. Before we get into the IFR question, you need to understand the different categories of light and experimental aircraft, because the rules are different for each one.

Know These Categories

“LSA” is a general term that covers several distinct aircraft categories. Each one has different rules for maintenance, modification, and - critically - what kind of flying you can do. Here are the ones that matter for this discussion:

- **S-LSA (Special Light Sport Aircraft):** A factory-built, ready-to-fly airplane manufactured under an FAA-accepted compliance process. Think of it like buying a car off the lot. The manufacturer builds it, the manufacturer sets the maintenance rules, and the manufacturer defines the operating limitations - including whether or not you can fly in instrument conditions. Examples: Flight Design CTLS, Pipistrel Virus SW.
- **E-LSA (Experimental Light Sport Aircraft):** An aircraft assembled from a kit that meets the same design standards as an S-LSA, or a former S-LSA that has been converted to experimental status. Once converted, you gain more freedom to modify and maintain it yourself - but you also lose some privileges (like using it for flight training for hire). Operating limitations are issued by the FAA and may or may not allow IFR/IMC flight.
- **E-AB (Experimental-Amateur Built):** A homebuilt aircraft where the builder fabricated or assembled the major portion (the 51% rule discussed earlier). These are issued experimental airworthiness certificates under [§21.191\(g\)](#). The FAA issues operating limitations, which for most E-AB aircraft do allow IFR operations when the airplane is properly equipped. Examples: Van's RV series, Zenith CH 750, Sonex.
- **Standard Category:** Type-certificated aircraft manufactured under [14 CFR Part 23](#) (or its predecessors). These hold standard airworthiness certificates and can be used for any legal purpose including commercial operations, flight training, and IFR/IMC flight. Examples: Cessna 172, Piper Archer, Cirrus SR22.

The distinctions matter because each category has different rules for what kind of flying is permitted. Now, on to the IFR question.

Can You Train for an Instrument Rating in an LSA?

Yes. You can do all of your instrument training in a properly equipped LSA - including simulated instrument flight (under the hood) - provided the airplane has the required instruments per [14 CFR §91.205\(d\)](#) and the manufacturer's operating instructions allow IFR operations. Several S-LSAs on the market can be equipped for IFR flight in VMC. You can even take your instrument checkride in one of these airplanes.

Can You Fly an S-LSA Into Actual IMC (Clouds)?

Almost certainly not. This is the critical limitation, and it comes down to how these aircraft are designed and certified. S-LSAs are built to ASTM consensus standards - these are industry-developed design and manufacturing standards published by ASTM International (formerly the American Society for Testing and Materials) that the FAA accepts in lieu of the full Part 23 type certification process.² The ASTM standards allow manufacturers to bring aircraft to

²ASTM International (formerly the American Society for Testing and Materials) publishes consensus standards developed by committees of industry experts, manufacturers, and regulators. For light sport aircraft, the relevant standards include ASTM F2245 (design and performance) and ASTM F2483 (maintenance and inspection). The FAA accepts compliance with these standards in lieu of the full Part 23 type certification process under [14 CFR §21.190](#).

market faster and at lower cost, but they have never included requirements for flight into instrument meteorological conditions - no lightning protection standards, no high-intensity radiated fields (HIRF) protection, none of the design criteria that standard-category aircraft must meet for IMC certification. As a result, most S-LSA manufacturers prohibit IMC flight in their aircraft operating instructions, and the FAA's operating limitations reference those manufacturer instructions.

So while the FARs don't explicitly say "no LSA in IMC," the practical effect is the same: if the manufacturer says no IMC, you can't do it.

Why This Matters for Us at Oakland

This isn't a theoretical problem - it's an operational one. We are based in the San Francisco Bay Area. The marine layer is a fact of life here. On a typical summer morning, Oakland sits under a coastal stratus layer that might only be 1,500 feet thick, but it's still a cloud layer. To depart, you need to climb through it. To return, you need to shoot an approach back down through it. That is flight into IMC, even if it's "soft" IMC.

If your goal is to earn an instrument rating and actually use it in the Bay Area, an S-LSA will not get you there. You could do all of your training and take your instrument checkride in that airplane, but you would not be able to legally fly it through the marine layer afterward. The airplane prohibits IMC operations. That defeats the purpose of getting the rating.

What About E-LSAs and E-AB Aircraft?

Here's where the picture changes. An E-LSA that has been converted from an S-LSA, or an E-AB aircraft, can fly IFR into actual IMC if the aircraft's operating limitations allow it, the airplane is equipped per [§91.205\(d\)](#), and the pilot is instrument rated and current. Most E-AB operating limitations do allow IFR operations when properly equipped.

This is one of the strongest arguments for the experimental route if you plan to fly IFR in the Bay Area.

Quick Reference: LSA vs. Experimental and IFR

	IFR Training (Under Hood, VMC)	File & Fly IFR in VMC	Fly Into Actual IMC
S-LSA (factory built)	Yes, if equipped	Yes, if equipped & manufacturer allows	Almost always no (ASTM standards)
E-LSA (kit or converted)	Yes, if equipped	Yes, if equipped & OLs allow	Depends on operating limitations
E-AB (homebuilt)	Yes, if equipped	Yes, if equipped	Yes, if equipped & OLs allow (most do)
Standard category (Cessna, Piper, etc.)	Yes	Yes	Yes

4. Co-Ownership: How to Afford an Airplane

Buying an airplane alone is expensive. Buying one with a partner or a small group makes it much more realistic. There are several ways to structure shared ownership, and each has different implications for liability, insurance, scheduling, and - for experimentals - flight training eligibility.

Option 1: Simple Co-Ownership (Names on Title)

Two or more people are listed on the aircraft registration (FAA Form 8050-1). Each person is a registered co-owner. This is the simplest structure. The FAA's flight training policy for experimentals explicitly covers this scenario - each co-owner can receive training in the aircraft without a LODA.

- Pro: Simple setup, no legal entity required, clear FAA standing.
- Con: Each co-owner has unlimited personal liability. If the airplane causes damage, creditors can go after any owner personally.

Option 2: LLC Ownership

The airplane is owned by a limited liability company. Each member owns a share of the LLC. This is the most common structure for protecting personal assets.

- Pro: Liability protection. An incident involving the airplane is limited to the LLC's assets, not your house or savings.
- Pro: The operating agreement spells out financial responsibilities, scheduling, and what happens if someone wants out.
- Con: Requires forming an LLC, drafting an operating agreement, and maintaining the entity (annual filings, separate bank account).
- Note: The LLC is the registered owner on the FAA registration. Each LLC member is a beneficial owner of the aircraft through the LLC. The statutory language in [§91.326\(c\)](#) covers "registered owner, lessor, or lessee," and the FAA registration form (AC Form 8050-1) allows registration by corporations and LLCs.³

Option 3: Non-Commercial Flying Club

A group of people form a flying club that owns and operates the airplane. The club exists to share the costs of ownership - not to make a profit. Each member pays dues and an hourly rate that covers fuel, maintenance, insurance, and a reserve for overhaul.

- Pro: Can accommodate more people (3–6 is typical) and spread costs further.
- Pro: FAA has explicitly confirmed that co-owners in a non-commercial flying club can each receive training in an experimental without a LODA.⁴ This was established in the 2023 Notice of Policy (Scenario C) and is now codified in [§91.326\(c\)](#).
- Con: More scheduling complexity. More opinions about maintenance decisions.
- Con: The club cannot advertise training or broadly offer the aircraft to the public. That crosses into commercial territory and would require a LODA.

What to Put in a Co-Ownership Agreement

Regardless of structure, write it down before you buy the airplane. Your agreement should address:

³[14 CFR §91.326\(c\)\(1\)](#): "An authorized instructor, registered owner, lessor, or lessee of an aircraft is not required to obtain a letter of deviation authority from the Administrator to allow, conduct, or receive flight training, checking, or testing in a limited category aircraft, experimental aircraft, or primary category aircraft if - " (conditions follow). FAA Registration Form AC 8050-1 includes "Corporation" as a registration type; see AOPA Co-Ownership FAQ at aopa.org/go-fly/aircraft-and-ownership for guidance on LLC registration.

- Financial split: Who pays what share of purchase, insurance, hangar, annual/condition inspection, and unexpected maintenance?
- Hourly rate: How much per hour to cover fuel and reserves? Who tracks it?
- Scheduling: How do you reserve the airplane? What's the max booking length? What about holiday weekends?
- Insurance requirements: Minimum hours, ratings, and currency for each pilot. Your insurer will have opinions here.
- Exit clause: How does someone sell their share? Do other members get right of first refusal? What's the buyout process?
- Damage and incidents: Who pays the deductible? What if someone damages the airplane through negligence?
- Decision authority: Who has final say on major maintenance decisions or modifications?

AOPA publishes a Pilot's Guide to Co-Ownership that includes a sample co-ownership agreement, a detailed checklist covering everything listed above, and an FAQ section addressing registration, insurance, and tax questions.⁵ AOPA's You Can Fly program also has a downloadable Guide to Aircraft Co-Ownership and a library of flying club resources including example membership packets, lease agreements, and cost-of-operations calculators.⁶ Start with those resources. They're written for exactly this situation and will cover the vast majority of what you need.

⁵AOPA, "Pilot's Guide to Co-Ownership," available at aopa.org/go-fly/aircraft-and-ownership/buying-an-aircraft/pilots-guide-to-co-ownership. Includes Chapter 2 (Agreement Checklist), Chapter 3 (FAQ), and Chapter 4 (Sample Co-Ownership Agreement).

⁶AOPA You Can Fly, "Downloadable Resources for Flying Clubs," available at youcanfly.aopa.org/flying-clubs/resources-for-flying-clubs/downloadable-resources. Includes Guide to Aircraft Co-Ownership, example membership packets, lease agreements, cost-of-operations calculators, and guidance on operating experimental and LSA aircraft in flying clubs.

5. The MOSAIC Rule: What's Changing

The FAA's Modernization of Special Airworthiness Certification (MOSAIC) rule was signed on July 18, 2025, and published in the Federal Register on July 24, 2025. It is the biggest change to the light sport aircraft category and sport pilot rules since those rules were created in 2004. Some changes are already in effect; others take effect in July 2026.

Most of MOSAIC is about sport pilot privileges and LSA certification - which isn't directly relevant if you're training toward an instrument or commercial rating with a private pilot certificate. But parts of it affect the airplane market and your buying decisions, so here's what matters for you.

What's Already in Effect (October 22, 2025)

- Sport pilots can now fly aircraft with a clean stall speed (V_{S1}) up to 59 KCAS. This means common four-seat trainers like the Piper Cherokee and Cessna 172 now qualify under sport pilot rules.
- Sport pilots can fly aircraft with retractable gear and constant-speed props with proper endorsements.
- Night flying is available to sport pilots with an endorsement and BasicMed or a third-class medical.
- Light sport repairman certificate holders can now perform condition inspections on experimental-amateur built aircraft (not just LSAs).
- Sport pilots remain restricted to VFR only. No IFR flying under sport pilot privileges, period.

What Takes Effect July 24, 2026

- The old LSA definition (1,320 lb max weight, 120 knot max speed, 2 seats) is removed from the regulations.
- New light-sport category aircraft will be defined by performance - primarily stall speed ($V_{S0} \leq 61$ KCAS), max speed ($V_H \leq 250$ KCAS), and max 4 seats.
- LSAs can be used for limited aerial work operations (towing, certain commercial ops) for compensation.
- New certification pathways open up for manufacturers, using a Statement of Compliance process instead of a Type Certificate.

What MOSAIC Means for Your Buying Decision

If you're pursuing an instrument or commercial rating with a private pilot certificate, MOSAIC doesn't change the core issues covered in this document. You still can't fly IFR under sport pilot privileges. S-LSAs still can't go into IMC. The experimental training rules under [§91.326](#) are separate from MOSAIC entirely.

What MOSAIC does change is the used airplane market. As sport pilots gain access to aircraft like the Cherokee and 172, demand for those airframes may shift. And as new LSA designs enter the market in 2026 and beyond - potentially with four seats, modern avionics, and more capable airframes - the calculus of "what airplane should I buy?" may evolve. For now, the fundamentals remain the same.

6. My Recommendation

If you're buying an airplane for time-building toward an instrument rating and a commercial certificate, and you plan to fly it in the Bay Area, here is what I would suggest:

Buy experimental. I will probably never own a certificated aircraft again, and there are good reasons for that. With an experimental, you can do your own maintenance. You have a much wider variety of airplanes to choose from, and they're often more modern - better avionics, lighter, more efficient. The trade-off is that you're responsible for the maintenance quality, and resale can be more variable. But for someone building time and learning the airplane inside and out, those trade-offs are worth it.

Co-own if you need to. Two people splitting an airplane is a great arrangement. You each get plenty of scheduling flexibility, the costs are cut roughly in half, and the FAA has made it clear that co-owners of an experimental can each receive flight training without a LODA. Three people can work too, but the more people involved, the more scheduling and decision-making friction you introduce.

Get IFR-capable from the start. If you're going to fly in the Bay Area, you need to be able to punch through a marine layer. That means your airplane needs to be equipped for IFR and its operating limitations need to allow flight into IMC. Don't buy an airplane for instrument training that can't actually fly in the clouds. Verify this before you buy.

Budget for insurance. Insurance for a low-time pilot in an experimental can be expensive, and it's getting harder to find. Get insurance quotes before you commit to buying. Your insurer will likely require a minimum amount of dual instruction in the airplane before they'll cover you for solo flight, and they may specify the instructor's qualifications. Plan for this.

Talk to me before you buy. I'm happy to help you think through the decision - what airplane makes sense for your goals, what to look for in a pre-purchase inspection, and how we'd structure your training once you have it. The best time to have that conversation is before you're emotionally committed to a specific airplane.

Key Regulatory References

[14 CFR §91.319](#) - Operating limitations for experimental aircraft

[14 CFR §91.326](#) - Exception for flight training in experimental and limited category aircraft (effective December 2, 2024)

[14 CFR §91.327](#) - Operating limitations for light-sport category aircraft

[14 CFR §91.205\(d\)](#) - Required instruments and equipment for IFR flight

MOSAIC Final Rule - Federal Register, Vol. 90, No. 140, July 24, 2025

AC 91-94 - Advisory Circular on LODAs for flight training in experimental and limited category aircraft

FAA Order 8130.2J - Airworthiness certification, including operating limitations for E-AB and E-LSA