U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
National Policy

ORDER 1110.143

Effective Date:
07/26/2006

SUBJ: AMATEUR-BUILT AIRCRAFT AVIATION RULEMAKING COMMITTEE

1. PURPOSE. This order constitutes the charter for the Amateur-Built Aircraft Aviation Rulemaking Committee. This committee is designated and established by the Administrator's authority under Title 49 of the United States Code (49 U.S.C.), section 106(p)(5).

2. DISTRIBUTION. This order is distributed to the Associate Administrator for Aviation Safety, and to the director level in the Aircraft Certification Service; the Office of Rulemaking; Office of the Chief Counsel; and Flight Standards Service.

3. EFFECTIVE DATE AND DURATION. This committee becomes effective on the date this order is signed. The committee will exist for 2 years, unless sooner terminated or extended by the Administrator.

4. BACKGROUND. Title 14 Code of Federal Regulations (14 CFR), part 21, § 21.191(g) defines an amateur-built aircraft as: "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." When § 21.191(g) was codified, current technologies that allow for the construction of sophisticated amateur-built aircraft were not envisioned. Most aircraft were of simple construction and did not require builder or commercial assistance. However, during the 1970s and 1980s the introduction of light-weight materials and high performance capabilities revolutionized the construction of amateur-built aircraft. Many of the aircraft introduced during this time incorporated glass/foam/glass composite structures. Aircraft kit manufacturers later expanded upon these designs and now use materials such as carbon fiber composite structures in the construction of their aircraft. The introduction of these materials and sophisticated construction techniques have resulted in aircraft being developed for amateur-built certification that can be turbine-powered, and have pressurized cabins, retractable landing gear, and seating for 4 or more passengers. These aircraft may be able to attain speeds in excess of 400 knots and routinely operate above FL 180. Many of these aircraft can only be built with builder or commercial assistance.

a. The Federal Aviation Administration (FAA) recognizes that an amateur aircraft builder may obtain builder or commercial assistance. However, the FAA is concerned when the level of aircraft sophistication requires that the aircraft be fabricated with builder or commercial assistance.

b. The original intent of § 21.191(g) was to allow a person to fabricate and assemble the major portion of an aircraft solely for educational or recreational purposes. The FAA did not intend for builder or commercial assistance to circumvent the normal certification regulations and procedures applicable to the serial production of duplicate aircraft.

5. OBJECTIVES AND SCOPE OF ACTIVITIES. This committee will provide a forum for the FAA and the aviation community to discuss the use of builder or commercial assistance when fabricating and assembling an amateur-built aircraft for certification under § 21.191(g).

a. The goal of the committee is to provide advice, guidance, and recommendations for new amateur-built regulations, directives, advisory materials, and implementation strategies.

b. To achieve the goal:

(1) The committee will review other foreign civil aviation authority amateur-built regulations, directives and advisory material and compare them to pertinent FAA regulations, directives and advisory material such as:

(a) 14 CFR § 21.191(g).

(b) FAA Order 8130.2, Airworthiness Certification of Aircraft and Related Products.

(c) Advisory Circulars: AC 20-27, Certification and Operation of Amateur-Built Aircraft, AC 20-139, Commercial Assistance During Construction of Amateur-Built Aircraft, and AC 90-89, Amateur-Built Aircraft and Ultralight Flight Testing Handbook.

(2) The committee will review the use of builder or commercial assistance when fabricating and assembling an amateur-built aircraft for certification under § 21.191(g). The committee will as a minimum:

(a) Define builder and commercial assistance when fabricating and assembling an amateur-built aircraft.

(b) Define minor portion as it is used in amateur-built aircraft so the combination of prefabricated parts and builder or commercial assistance are not to exceed 49% of the total aircraft construction.

(c) Identify and define the regulatory, directive, and policy changes needed for the FAA: to perform oversight of builder or commercial assistance; to convey to applicants their responsibilities when using builder or commercial assistance; and to convey to the providers of builder or commercial assistance their responsibilities to the applicant and the FAA.

NOTE: The FAA does not have any issues with individuals fabricating and assembling an amateur-built aircraft (regardless of the sophistication) when they build it themselves.

c. The committee may also recommend enhancements to the current amateur-built aircraft certification process when builder or commercial assistance is not used.

d. Once the review is complete the committee will document its advice, guidance, recommendations and implementation strategies in a report. The committee will brief the report to the Associate Administrator for Aviation Safety through the Director of the Aircraft Certification Service. The committee's suggestions may include recommendations for rulemaking, changes to directive or advisory material, training and implementation strategies.

6. DELIVERABLES.

a. Two months from when the committee order is signed, the committee will deliver and brief a plan for accomplishing this task to the Director of the Aircraft Certification Service, and obtain the Director's approval prior to proceeding.

b. Six months from this order's effective date, the committee will deliver its first draft report to the Associate Administrator for Aviation Safety through the Director of the Aircraft Certification Service. The committee may make recommendations or complete the tasks before the sixth month due date. Documented issue resolutions, recommended policy decisions, draft guidance material, and/or proposed rulemaking, as appropriate, may be submitted as recommendations. The committee may document any issues or concerns with their recommendations in the report. The final report will be delivered nine months from this order's effective date to the Associate Administrator for Aviation Safety through the Director of the Aircraft Certification Service.

NOTE: The FAA may extend the report due dates up to six months.

7. PROCEDURES.

a. The committee provides advice, guidance and recommendations to the Director of the Aircraft Certification Service. The committee acts solely in an advisory capacity.

b. The committee will discuss and present whatever advice, guidance, and recommendations its members consider relevant to resolving the identified issues. The committee co-chairs will determine the earliest time that the committee members are able to convene to discuss the initial assignment of the committee. The committee co-chairs will conduct such meetings of the committee as are deemed appropriate to dispose of the issues tasked to it.

8. ORGANIZATION AND ADMINISTRATION.

a. The Director of the Aircraft Certification Service is solely responsible to appoint members or organizations to the committee. The committee will consist of members of the aviation community, including the public and other Federal government entities, which represent various viewpoints. The FAA will provide administrative support.

b. The Director of the Aircraft Certification Service is the sponsor of the committee and will select an industry co-chair(s) from the committee membership. The Director will also designate the FAA co-chair(s) for the committee. Once designated, the co-chairs will:

(1) Determine, in coordination with the other members of the committee, when a meeting is required and where it will be held.

(2) Notify all committee members of the time and place for each meeting.

(3) Form an agenda for and conduct each meeting.

(4) Ensure that detailed minutes are kept for each meeting and certify accuracy of the minutes.

(5) Make requests to the Director of the Aircraft Certification Service for the attendance of FAA employee's at a meeting of the committee.

c. The Director of the Aircraft Certification Service may wish to have a representative from the FAA's Office of the Chief Counsel in attendance at committee meetings to provide legal advice regarding any recommendations that may be made. The Director may also wish to have a representative from the Office of Policy and Planning present to provide economic advice. To promote harmonization between authorities, the Director may also wish to have observers from foreign civil aviation authorities attend committee meetings.

9. MEMBERSHIP. The FAA will select the committee membership from industry associations and/or organizations (AIR-200, FAA manufacturing and engineering field representatives, AFS-800, AFS-300, EAA, Kit Manufacturers, etc.). The membership should be balanced in points of view, interests, and knowledge of the objectives and scope of the committee's tasks. Additional participants may be added as subject matter experts to support sub-committees or work groups, or to provide support to committee members. Each member or participant should represent the identified interest of the affected community.

10. COST AND COMPENSATION. The estimated travel cost to the Federal government for the Amateur-Built Aircraft Aviation Rulemaking Committee is approximately $20,000, ($15,000 for travel and $5,000 for contract fees). Non-government representatives serve without government compensation and bear all costs related to their participation on the committee.

11. PUBLIC PARTICIPATION. Interested persons or organizations who are not committee members but plan to attend a meeting must first acquire approval from the Director of the Aircraft Certification Service, or his/her delegate. The committee's meetings are generally not open to the public, however anyone in attendance may make comments or provide input, but such comments or input must be made through one of the committee members.

12. AVAILABILITY OF RECORDS. Subject to the conditions of the Freedom of Information Act, Section 522 of Title 5 U.S.C., records, reports, agendas, working papers, and other documents given to or prepared by the committee will be available for public inspection and copying at this address: FAA Aircraft Certification Service, 800 Independence Avenue, SW., Washington, D.C. 20591. Fees will be charged for information furnished to the public per the fee schedule in part 7 of Title 49 CFR.

13. PUBLIC INTEREST. The formation of the Amateur-Built Aircraft Aviation Rulemaking Committee is in the public interest in connection with the performance of duties imposed on the FAA by law.

Marion C. Blakey

Marion C. Blakey
Administrator

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
National Policy

ORDER 1110.143A

Effective Date:
11/04/2008

SUBJ: Amateur-Built Aircraft Aviation Rulemaking Committee

1. Purpose of this order.

a. This order renews the Amateur-Built Aircraft Aviation Rulemaking Committee (ARC) to consider and give advice on the following:

(1) Recommended responses for FAA's consideration regarding disposition of public comments received from the proposed changes to FAA Order 8130.2F, Airworthiness Certification of Aircraft and Related Products and Advisory Circular 20-27G, Certification and Operation of Amateur-Built Aircraft.

(2) Definition of the term "fabrication" as it differs from "assembly" of amateur-built aircraft within the scope of the major portion (51%) requirement of Title 14 of the Code of Federal Regulations (14 CFR), §21.191(g).

(3) Recommended process to minimize the impact of the proposed policy on the amateur-built kits evaluated by the FAA before February 15, 2008.

b. The committee is designated and established by the Administrator's authority under Title 49 of the United States Code (49 U.S.C.), §106(p) (5).

> **Note**: The FAA will not reconsider its proposal to require a minimum level of fabrication and assembly (e.g., requiring that an amateur builder fabricate a minimum of 20 percent of an aircraft and assemble a minimum of 20 percent of the aircraft) within the major portion requirement.

2. Audience. This order is written for the FAA's Office of Rulemaking, Flight Standards Service and Aircraft Certification Service.

3. Where to Find This Order. You can find this order on the FAA's Regulatory and Guidance Library (RGL) website at http://rgl.faa.gov or the My FAA Employee website at https://employees.faa.gov/tools_resources/order_notices.

4. What This Order Cancels. This order cancels FAA Order 1110.143, Amateur-Built Aircraft Aviation Rulemaking Committee, dated 07/26/2006.

5. Effective Date And Duration. This committee will be reconstituted on the date this order is signed. The committee will exist for 6 months unless sooner terminated or extended by the Administrator.

6. **Deliverables.** The ARC will deliver its recommendations within 60 days following conclusion of its meeting(s).

7. **Procedures.**

a. The committee provides advice, guidance and recommendations to the Director of the Aircraft Certification Service. The committee acts solely in an advisory capacity.

b. The committee will discuss and present advice, guidance and recommendations presented by its members that address the tasks identified in paragraph 1 above. The committee co-chairs will determine the earliest time that the committee members are able to convene to discuss these matters. The committee co-chairs will conduct such meetings of the committee as are deemed appropriate to dispose of the issues tasked to it.

8. Organization and Administration.

a. The Director of the Aircraft Certification Service is solely responsible to appoint members or organizations to the committee. The committee, as chosen in June 2006, consists of members of the aviation community, including the public and other Federal government entities, which represent various viewpoints. The FAA will provide administrative support.

b. The Director of the Aircraft Certification Service is the sponsor of the committee. The previously selected co-chairs (chosen by the Director from the committee membership) will continue at the pleasure of the Director. The designated co-chairs will:

(1) Determine, in coordination with the other members of the committee, when a meeting is required and where it will be held;

(2) Notify all committee members of the time and place for each meeting;

(3) Form an agenda for and conduct each meeting; and

(4) Ensure that detailed minutes are kept for each meeting and certify accuracy of the minutes.

c. The Director of the Aircraft Certification Service may wish to have a representative from the FAA's Office of the Chief Counsel in attendance at committee meetings to provide legal advice regarding any recommendations that may be made. The Director may also wish to have a representative from the FAA's Office of Policy and Planning present to provide economic advice. To promote international harmonization, the Director may also wish to have observers from other civil aviation authorities attend committee meetings.

9. Membership. The FAA selected the committee membership in June 2006 from industry associations and organizations (Aircraft Certification Service's Production and Airworthiness Division and Manufacturing Inspection District Offices; Flight Standards Service's General Aviation and Commercial Division and Aircraft Maintenance Division; Experimental Aircraft Association; kit manufacturers, etc.). The membership is balanced in points of view, interests, and knowledge of the

objectives and scope of the committee's tasks. Additional participants may be added as subject matter experts to support sub-committees or work groups, or to provide support to committee members. Each member or participant should represent the identified interest of the affected community.

10. Cost and Compensation. The estimated travel cost to the Federal government for the ARC is approximately $20,000 ($15,000 for travel and $5,000 for contract fees). Non-government representatives serve without government compensation and bear all costs related to their participation on the committee.

11. Public Participation. Interested persons or organizations who are not committee members but plan to attend a meeting must first acquire approval from the Director of the Aircraft Certification Service, or his/her delegate. While the committee's meetings are generally not open to the public, anyone in attendance may make comments or provide input. However, such comments or input must be made through one of the committee members.

12. Availability Of Records. Subject to the conditions of the Freedom of Information Act, Title 5 of the United States Code §522, records, reports, agendas, working papers, and other documents given to or prepared by the committee will be available for public inspection and copying at this address: Federal Aviation Administration, Aircraft Certification Service, 800 Independence Avenue, SW, Washington, DC 20591. Fees will be charged for information furnished to the public per the fee schedule in part 7 of Title 49 CFR.

13. Public Interest. The formation of the ARC is in the public interest in connection with the performance of duties imposed on the FAA by law.

14. Distribution. This order is distributed to the Associate Administrator for Aviation Safety, and to the director level in the Aircraft Certification Service, the Office of Rulemaking, Office of the Chief Counsel, and Flight Standards Service.

15. Background.

a. The original Order 1110.143, Amateur-Built Aircraft Aviation Rulemaking Committee was established July 26, 2006. Of primary concern to the FAA was that the typical amateur-built aircraft project and the industry as a whole had radically changed over the last three decades in terms of the materials, methods and technology used. With the introduction of light-weight materials (i.e., fiberglass and composites) and sophisticated construction techniques, the state of the art amateur-built project had far exceeded that which was imagined when the governing regulations were promulgated. Further, the FAA was concerned with the development of builder/commercial assistance programs which had grown in popularity among amateur-built kit builders. If the level of technical expertise of aircraft construction requires that an amateur-built aircraft be fabricated with the commercial assistance contribution exceeding 50% of the aircraft construction, the amateur builder will fail to comply with 14 CFR §21.191(g). This regulation requires that a "major portion" of the amateur built aircraft be "fabricated and assembled by persons who undertook the construction project solely for their own education or recreation." With these concerns, the ARC met to review and advise on the following:

(1) 14 CFR §21.191(g);

(2) FAA Order 8130.2;

(3) Advisory circulars: AC 20-27, *Certification and Operation of Amateur-Built Aircraft, AC 20-139, Commercial Assistance During Construction of Amateur-Built Aircraft*, and AC 90-89, *Amateur-Built Aircraft and Ultralight Flight Testing Handbook*;

(4) Definition of builder and commercial assistance when fabricating and assembling an amateur-built aircraft;

(5) Definition of minor portion as it is used in amateur-built aircraft so the combination of prefabricated parts and builder/commercial assistance do not exceed 49% of the total aircraft construction; and

(6) Identification and recommended regulatory, directive and policy changes required for the FAA to properly perform oversight of builder/commercial assistance to the amateur builder, and also to convey respective responsibilities of all parties involved in the highly evolved amateur-built industry.

b. The ARC made several recommendations which are detailed in the final report published in the Federal Register on February 15, 2008. The FAA subsequently published the proposed changes to FAA Order 8130.2 Airworthiness Certification of Aircraft and Related Products and AC 20-27 Certification and Operation of Amateur-Built Aircraft on July 15, 2008, to address the items reviewed by the ARC. The period for public comment ran from July 15, 2008, to September 30, 2008.

Robert A. Sturgell
Acting Administrator

AMATEUR-BUILT AIRCRAFT

AVIATION RULEMAKING COMMITTEE

FINAL REPORT

Date: February 14, 2008

I - EXECUTIVE SUMMARY

The Federal Aviation Administration (FAA) Aircraft Certification Service established the Amateur-Built Aviation Rulemaking Committee (Committee) on July 26, 2006.[1] The Committee was made up of representatives from the FAA, aircraft kit manufacturers, commercial assistance center owners, and associations. The purpose of the Committee was to make recommendations regarding the use of builder or commercial assistance when fabricating and assembling amateur-built aircraft under Title 14 Code of Federal Regulations (14 CFR), part 21, § 21.191(g), Operating Amateur-Built Aircraft. This regulation permits someone to build an aircraft that, "...the major portion of which has been fabricated and assembled by persons who undertook the construction project solely for their own education or recreation."[2]

The Committee agreed that many amateur-builders use too much commercially provided assistance when fabricating and assembling an aircraft from a kit. In the most extreme cases, other persons fabricate and assemble the major portion of an amateur-built aircraft for the applicant. This can result in a falsification of the eligibility statement by the applicant.[3]

The Committee also agreed that FAA policy does not adequately define the limits of commercial assistance. At this time, amateur-built aircraft applicants (applicants) are not required to document the amount of assistance provided to them by commercial entities.

<u>The Committee agreed:</u>

- FAA directive and advisory language for the airworthiness certification of amateur-built aircraft does not adequately address the issue of commercial assistance in excess of that allowed under the regulations.

- The forms used in determining the amateur-built status of the aircraft need to be updated to more accurately reflect who actually performed the fabrication and assembly of the aircraft.

- The aircraft kit evaluation process is not standardized. The public, industry, the FAA, and individuals within those groups, have different opinions about what level of fabrication and assembly constitutes 'major portion.' In other words, it is

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[1] FAA Order 1110.143, dated July 26, 2006, established the Amateur-Built Aviation Rulemaking Committee[1] (Committee). The Committee provided a forum for the FAA and the aviation community to discuss the use of builder and commercial assistance when fabricating and assembling an amateur-built aircraft. Although chartered through July 26, 2008, the Committee had its final meeting on November 15, 2007.

[2] The generally accepted definition of "major portion" in this instance is that the majority, or 51%, of the fabrication and assembly of the aircraft was performed by the amateur builder for his/her own education or recreation.

[3] Affidavit Of Ownership For Experimental Aircraft Including Amateur-Built Aircraft And Other Non-Type Certificated Aircraft, Form 8000-38.

not clear how to determine if the amateur-builder fabricates and assembles the major portion of aircraft solely for their own education or recreation.

- Aviation Safety Inspectors and Designated Airworthiness Representatives may need additional training to fully understand the FAA's expectations when determining an aircraft's eligibility for an amateur-built certificate.

The Committee disagreed

- The Committee could not come to an agreement on how to define 'major portion' when evaluating aircraft kits, either in kit form at the manufacturers or when an aircraft is fully assembled.

FAA Enforcement

The Committee agreed that FAA enforcement action on aircraft construction projects that are egregious violations of the major portion provision of the regulations would provide a significant deterrent to those who promote violating the regulations.

Rulemaking Options

The FAA discouraged rulemaking unless a clear safety case can be made and a cost benefit analysis is provided. However, some Committee members believe there are opportunities to address the desires of a segment of the public for aircraft that does not meet the major portion rule with an alternative to the current amateur-built regulations for 'custom aircraft.'

Industry Committee Member Final Meeting Briefing

Industry Committee members addressed the above issues and briefed their proposals to Aircraft Certification Service management on November 15, 2007. The briefing proposed changes to FAA policy, forms, the kit-evaluation process, training and possible rulemaking. The policy changes are being drafted and will be made available for public notice and comment via the Federal Register. The final policy is targeted for issuance by October 2008. The industry rulemaking proposal is not finalized.

II - ARC REPORT

Introduction:

There is concern by the Federal Aviation Administration (FAA) and other interested parties that a significant number of amateur-built aircraft are not being fabricated and assembled by persons for their own education or recreation, but are being built in large part by commercial assistance companies that specialize in kit aircraft construction. Although some assistance is allowed when fabricating and assembling an amateur-built aircraft, the major portion (at least 51%) must be completed by the amateur-builder to be in compliance with existing regulations.

14 Code of Federal Regulations, Part 21, *Certification Procedures for Products and Parts*, Section 21.191, Experimental Certificates, details the purposes for which experimental airworthiness certificates are issued. [4] Section 21.191(g) regards constructing amateur-built aircraft and states in pertinent part, "...the major portion of which has been fabricated and assembled by persons who undertook the construction project solely for their own education or recreation."

Current technologies that allow for the fabrication and assembly of sophisticated amateur-built aircraft were not envisioned at the time section 21.191(g) was promulgated in 1964.[5] Most amateur-built aircraft kits were generally simple to fabricate and assemble and did not require commercial builder assistance.

Over the last 30 years, the introduction of lightweight materials and high performance capabilities has optimized the construction of amateur-built aircraft. Many kit manufacturers have incorporated the latest advances in production methods and technology for both metal and composite aircraft into their designs. This has resulted in improved aircraft operational performance, making these aircraft an attractive alternative to purchasing a commercially built, type-certificated aircraft.[6]

Some of the kits use complex materials or require techniques beyond the ability of most amateur-builders. To assist amateur-builders with these projects, many manufacturers offer programs that include "builder assistance" and/or "educational assistance." Builder and/or educational assistance programs are not in and of themselves a violation of the regulations, however, FAA has no mandate for oversight for these types of programs. This means that FAA must rely heavily on the integrity of both the kit manufacturer and the amateur-builders' certifying statement to ensure the major portion of the aircraft has been fabricated and assembled by the amateur-builder, not the commercial builders.

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[4] Any registered owner of a U.S. registered aircraft (or the agent of the owner) may apply for an airworthiness certificate for that aircraft. An application for an airworthiness certificate is made in a form and manner acceptable to the Administrator, and may be submitted to any FAA office.

[5] 14 CFR Part 21 was re-codified in 1964.

[6] An aircraft that is type-certificated in the normal, utility, acrobatic, commuter, or transport category. These aircraft are built and produced by manufacturers that hold certain production approvals issued by the Federal Aviation Administration.

The Problems and Recommendations Identified By the Committee

FAA Advisory Circulars and FAA Orders/Directives

It was agreed by the Committee that existing Advisory Circulars (ACs), and internal instructions to FAA staff (Orders/Directives) for the airworthiness certification of amateur-built aircraft do not fully address use of commercial assistance.

The Committee recommended that advisory circulars, AC 20-27, *Certification and Operation of Amateur-Built Aircraft* and AC 20-139, *Commercial Assistance During Construction of Amateur-Built Aircraft* [7] be rewritten to include:

- Instructions on how to get an aircraft evaluated by the FAA when using commercial assistance.
- Instructions on how to quantify and document commercial assistance.
- Clarification of the definitions regarding commercial assistance terms.
- Examples of fabrication and assembly values in table format.
- Revised FAA Forms 8130-12 and 8000-38[8].

The Committee also recommended that FAA Directive 8130.2, *Airworthiness Certification of Aircraft and Related Products, section 9, Experimental Amateur-Built Airworthiness Certifications*, be revised to provide:

- Add more detailed information on determining major portion to include a structured process and procedure to evaluate amateur-built aircraft fabrication and assembly.
- Change discretionary language that directs Aviation Safety Inspectors (ASIs) and Designated Airworthiness Representatives (DARs) how to perform amateur-built airworthiness certification from "may" to "must" in certain instances.
- Add a more in-depth interview process at the time of aircraft certification to assist the FAA in determining if the applicant is familiar with all the fabrication and assembly tasks that are documented in the individual's builders log and Form 8000-38.
- Provide a completed copy of Form 8000-38 for each amateur-built kit evaluated with each kit produced so their customers so they know exactly how much fabrication and assembly they must complete and how much they may contract out.
- Post on the internet a completed copy of Form 8000-38 for each amateur-built kit evaluated so FAA inspectors will know exactly how much fabrication and assembly the amateur-builder must complete and how much they may contract out.

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[7] These Advisory Circulars (ACs) are not mandatory and do not constitute a regulation. These ACs describe an acceptable means, but not the only means, to comply with the certification requirements for amateur-built aircraft.

[8] Form 8130-12 is used by the amateur-builder to certify that the major portion (51%) of the aircraft was fabricated and assembled for educational or recreational purposes. Form 8000-38 is used by the FAA to determine that an aircraft, when fabricated and assembled from a kit, will meet the major portion determination.

- Inform applicants of the proposed requirement to identify the individuals or companies that participated in the construction of the aircraft on the 8130-12 Eligibility Statement. This will enable the applicant to better anticipate the effect of hiring helpers and will become part of the official records of the aircraft's certification.

Forms

The Committee agreed that Form 8000-38, *Fabrication/Assembly Operation Checklist,* should be updated to more accurately reflect the actual fabrication and assembly of amateur-built aircraft. It is important to capture who did the actual work; the amateur-builder, the kit manufacturer in terms of what was provided in the kit and if used, assistance from a commercial builder or other source.

The Committee also recognized that the current Form 8130-12, *Eligibility Statement, Amateur-Built Aircraft,* does not require the applicant to certify that he/she fabricated and assembled the major portion of the aircraft; nor does it require the amateur builder identify any additional sources of fabrication and assembly that was used. A revision to the form would include this certifying statement.

Both of these forms are currently included in the above noted Advisory Circulars and will be updated as soon as possible.

Aircraft Kit Evaluation

The Committee also examined the process that FAA uses when evaluating aircraft kits. When requested, the FAA evaluates amateur-built kits at the manufacturer's facilities prior to marketing and sale. The purpose of this evaluation is to determine if the fabrication and assembly of the kit would allow the amateur-builder to complete the major portion of the aircraft. When a kit has been found to be eligible, it is added to the FAA's kit listing which is available via the internet to prospective buyers.[9] These kit evaluations advise prospective applicants that they would be *eligible* for an experimental amateur-built airworthiness certificate if they fabricated and assembled their aircraft in accordance with the assembly and instruction documents evaluated by the FAA.[10]

The Committee members were in agreement that the process used for this evaluation is not standardized. Committee members did random reviews on previously evaluated amateur-built aircraft and found various methodologies had been used to determine if a kit or an assembled aircraft met the major portion requirement.

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[9] http://www.faa.gov/aircraft/gen_av/ultralights/amateur_built/kits/ This listing identifies previously evaluated kit aircraft that, at the time of the evaluation, met the requirement that the major portion of the kit could be fabricated and assembled by the amateur-builder.

[10] There is no guarantee that an assembled kit would receive an experimental airworthiness certificate.

The Committee recommended that FAA form a group of Aviation Safety Inspectors to establish a standardized evaluation process. These inspectors would respond to requests from kit manufacturers to evaluate a kit to determine if an amateur-builder could fabricate and assemble the major portion of the aircraft.

Commercial Builder Services

As stated above, FAA is concerned that amateur-builders are using more commercial assistance than is allowed by the major portion requirement of 21.191(g). Some complex kits include advanced composites structures, state of the art avionics systems, special tools and gauges, and close tolerance fixtures. These builders must use commercial assistance because the aircraft cannot be fabricated and assembled outside the factory environment or by the average amateur-builder.

The Committee also noted that many aircraft are marketed as having the maximum amount of fabrication and assembly allowed already completed by the kit manufacturer (49%). In theory, the remaining 51% would then be completed by the amateur-builder(s). If additional commercial assistance were used, the aircraft would not be eligible for an amateur-built airworthiness certificate.

In an increasing number of instances, kit purchaser also desire to pay for the construction of their aircraft with services provided by commercial builders.[11] During the airworthiness certification process, it is the amateur-builder, not the commercial builder, who must sign the form 8130-12, attesting that they have built the major portion of the aircraft.[12] Because the form does not require disclosure of the commercial builder's role in the construction of the aircraft, the FAA often cannot make a valid determination that the builder fabricated and assembled the major portion of the aircraft.

The Committee's recommendations to curb excessive commercial assistance are focused on improving the documentation that is required to be submitted by the applicant; strengthening the requirements for airworthiness certification of amateur-built aircraft, and standardizing the kit evaluation process. These actions will increase the ability of the FAA to enforce the major portion rule.

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[11] These 'commercial builders' range in sophistication from other amateur-builders to de facto manufacturing facilities that exists solely for the purpose of fabricating and assembling aircraft kits for the purchaser.

[12] Form 8130-12 must be signed and notarized.

Calculating Major Portion

The Committee disagreed on how to calculate the work done by the amateur builder, the kit manufacturer, or the commercial builder to determine if the aircraft meets major portion the requirements of 21.191(g). Most industry ARC members continue to support the existing dual check system, primarily out of concern for potentially negative economic impacts. When using the duel check system, the both the kit manufacturer and amateur-builder take equal credit on the Form 8000-38 regardless of how much work either performs. An extreme example is the fabrication and assembly of an advanced composite fuselage structure. The amateur builder may only sand finish rough edges, yet the amateur-builder would take equal credit for the entire fabrication and assembly process.

The method of determining the major portion of construction has evolved since the rule was first codified in l964. When FAA staff developed the form 8000-38 to calculate major portion, the intent was that a single check mark in a row or line item on the form would identify who did the task. It was not envisioned that credit for a task would be offered to an amateur-builder simply assisting in the fabrication and assembly. In the fuselage example above, the amateur builder would receive no credit for the insignificant fabrication or assembly work accomplished. FAA continues to support this methodology.

Currently, there are inconsistent evaluation criteria being applied by both applicants and FAA representatives. Some manufacturers and FAA representatives calculate major portion by using a "task-based" accounting mechanism that incorporates a "dual-check" system whereby an amateur-builder may be given shared credit even if that person does not complete the major portion of the task.[13] Some Committee members advocated that the amateur-builder(s) continue to receive credit for completing the major portion of a task when they "perform the operation sufficiently to understand how to do it." When this is used in practice, the kit manufacturer and amateur-builder share credit on the Form 8000-38.

Additionally, some industry representatives on the Committee recommended adding the term "Representative Number of Operations" or "RNO." While the RNO name is new, industry's position is that the concept uses counting methods similar to what is used today to result in a check for both the manufacturer and builder on Form 8000-38.

Because the Committee was unable to come to agreement in this area, FAA will develop the final method of calculating major portion with an opportunity for public comment.

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[13] FAA Form 8000-38 is essentially a checklist with tasks identified. A 'check mark' would be placed to indicate who did the work.

FAA Enforcement

The Committee agreed that the FAA should begin to take enforcement action and/or deny airworthiness certificates based on violations of the current rule. In egregious cases where there is a clear, deliberate falsification of the eligibility statement, the FAA should make referrals to the Department of Justice for prosecution.

Rulemaking

The FAA members on the Committee discouraged rulemaking unless a clear safety case can be made and a cost benefit analysis is provided. However, some Committee members believe there are opportunities to address the desires of a segment of the public for an aircraft that does not meet the major portion rule with an alternative to the current amateur-built regulations for 'custom built aircraft," that:

- Eliminates any major portion requirements or determinations by FAA of experimental amateur-built aircraft.
- Provide industry standards similar to Experimental Light Sport Aircraft (ESLA) and Special Light Sport Aircraft (SLSA) to assure compliance with certain levels of safety
- Provide industry with a legitimate outlet for the skill/talent pool of the builder assistance sub-industry.
- Provide a legitimate source of personal use aircraft of class and type not economically viable under 14 CFR Part 23.
- Support the revision of the Experimental 21.191(h) "Primary Kit-Built" category to allow kits to be sold by declaring compliance with applicable ASTM International standards.[14]

Industry Committee members have proposed submitting a petition for rulemaking to the FAA to consider these ideas. FAA will evaluate any petition for rulemaking received.

The Committee also agreed that a change to the existing amateur-built regulation is not the best way to address the desire for more commercial assistance in the construction of "custom" aircraft" for the following reasons:

- It was recognized that allowing builders to obtain more commercial assistance than is currently allowed by the regulation facilitates the construction of more complex aircraft. This would perpetuate the current situation and would encourage continued non-compliance with 21.191(g).

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[14] ASTM International Committee F37 has developed standards for aircraft design, manufacturing and continued airworthiness that has been accepted by the FAA for certification of Special Light Sport Aircraft and for a basis of obtaining a Primary Category Type Certificate.

III - CONCLUSION

Before concluding its meetings the committee drafted proposed changes to FAA Orders, Advisory Circulars, and Forms. The FAA is in general agreement with these proposed changes and will make all documents available for review and comment prior to publication.

The FAA will consider forming a group of Aviation Safety Inspectors to establish a standardized evaluation process and perform kit evaluations.

The FAA will develop the final method of calculating major portion. This method will be made available for review and comment prior to publication.

The FAA will consider petitions for rulemaking by ARC members or any other interested party or person.

IV - BACKGROUND

Committee Charter: FAA Order 1110.143, dated July 26, 2006, established the Amateur-Built Aviation Rulemaking Committee[15] (Committee). The Committee provided a forum for the FAA and the aviation community to discuss the use of builder and commercial assistance when fabricating and assembling an amateur-built aircraft. Although chartered through July 26, 2008, the Committee had its final meeting on November 15, 2007.

Committee Membership: The Committee was comprised of three Co-Chairs that included one FAA senior manager, one association representative and one kit-plane manufacturer. In this way, all members of the Committee had a voice at the Co-Chair level.

Committee Co-Chairs:

Frank Paskiewicz, FAA Production and Airworthiness Division, AIR-200
Earl Lawrence, Experimental Aircraft Association
Dick VanGrunsven, CEO of Van's Aircraft

Committee members (in alphabetical order):

Jackie Black, FAA Flight Standards Service, AFS-300
Joe Bartels, CEO of Lancair
Stephen Buczynski, FAA Aircraft Certification, Van Nuys MIDO
Paul Fiduccia, President, Small Aircraft Manufacturers Association (SAMA)
Joe Gauthier, Manufacturing DAR
Paul Greer, Airworthiness Law Branch, AGC-210
Donald Lausman, FAA Airworthiness Certification Branch, AIR-230, (Team Lead)
Jeremy Monnett, Sonex Aircraft LLC
Dave Saylor, AirCrafters LLC
Rick Schramek, Epic Aircraft
Matt Tomsheck, FAA Aircraft Certification, Cleveland MIDO
Mikael Via, Glasair
Brian Whitehead, Transport Canada Civil Aviation.

[15] The formation of this Committee is designated and established by the Administrator's authority under Title 49 of the United States Code (49 U.S.C.); section 106(p) (5).

APPENDIX

The following is a chronological history researched by members of the Committee on the evolution of the amateur-built aircraft category.

- 1931
  - State legislatures adopt their own versions of the regulations governing aviation to compliment the requirements of the Federal Air Commerce Act of 1926.
  - The section defining the requirements for an airworthiness certificate, intended to apply only to those aircraft used in interstate commerce, was amended in many state laws to apply to all aircraft, effectively outlawing homebuilding.

- 1941
  - Oregon is the last state to outlaw homebuilt aircraft.
  - WWII puts an end to civil aircraft until after war.

- 1945
  - Efforts with the Civil Aeronautics Administration (the CAA was the predecessor to the FAA) to develop a homebuilt rule were begun.

- 1946
  - CAA agreed that starting in 1947 "X" certification for homebuilt planes, built before WWII, would be granted.

- 1947
  - CAA agrees to develop a permanent category for homebuilt aircraft.
  - A temporary "X" certification for homebuilts was granted which required renewal every six months.
  - Community Proposal to CAA for New Category
    - Homebuilt craft will be first flown under an 'X' certification for a proving period of 50 or 100 hours.
    - Such craft will be flown by the owner or associates who must have a private pilot's certificate.
    - If after flying the proving period the plane seems to be satisfactory in regards to performance, structure, control and flight characteristics, the new category certificate will be issued.
    - Two place aircraft that have the category certificate will have the passenger cockpit placarded in such a way that the passenger he will be flying in an experimental aircraft.
    - If the plane is sold, the new owner must put the plane through for a category certificate as though he had built the plane.

- Flight restrictions would be similar as for the "X" certificate. The main one being the restriction from flying over densely populated areas.

➢ 1951
- On November 17, 1951 an amendment to the Civil Air Regulations dealing with experimental certificates was published.

➢ 1952
- On September 19, 1952, the amateur-built category was officially adopted.

➢ 1953
- The Experimental Aircraft Association (EAA) was founded.

➢ 1960
- Test areas were established and authorized for the testing of new amateur-built aircraft; first outside of Milwaukee and then the Dayton, OH area. Others followed and were coordinated by the EAA chapters in the area.

➢ 1964
- Aerobatic maneuvers of experimental amateur-built aircraft were authorized.

➢ 1966
- In September the FAA verified that IFR operations are authorized in experimental amateur-built aircraft.
- However, it was also noted that experimental aircraft are not authorized to operate in congested airways or over densely populated areas and there was no way in actual IMC to guarantee that such operations would not take place - so IFR flight should not be accomplished as a practical matter.

➢ 1968 - Early 1970s
- First kits started to appear. Their level of completion was such that FAA did not take any significant action to prevent them.
- However, a kit for a Pitts biplane, which was previously built as an exhibition aircraft, was denied certification as an amateur-built aircraft because the pre-supplied components, e.g. wing ribs and welded fuselage, was considered to not meet the intention of the majority portion part of the amateur-built regulation.

➢ 1979
- In September, for an unlimited duration, airworthiness certificates were allowed under revised FAR 21 regulations.

- Same regulatory change created Repairman Certificate for amateur-built aircraft builders.

➢ 1982
- FAA 51% Kit evaluation list was initiated.
- Close out inspection no longer required if builder participates in EAA Technical Counselor program.

➢ 1990
- Requirement to show that closeout inspections were completed by the FAA or an EAA Technical Counselor was removed completely.
- A FAA AC was issued advising builders to use EAA Technical Counselor and/or A&P to perform interim inspection during construction of aircraft.

➢ 1996
- A Commercial Assistance AC was issued adding additional items that could be completed with the use of commercial assistance such as paint, avionics, and upholstery as they were defined as not part of the major portion.

➢ 1998
- In May, flight over densely populated areas was authorized for takeoffs and landings or as directed by ATC.
- FAA Flight Standards Handbook Bulletin, HBGA 99-13, clarifies experimental, amateur-built aircraft that received an airworthiness certificate before the issuance date of HBGA 98-05, (May 28, 1998) and that received an authorization in the form of operations limitations allowing operations over densely populated areas for the purpose of takeoffs and landings, are authorized for takeoffs and landings and en route operations over densely populated areas.
- This change also allowed practical IFR operations.

➢ 1999
- 8130.2D was issued allowing for major changes in the field without FAA "approval".
- Created Amateur-Built only section in Order 8130.2 for operational limitations.
- Created requirement to record Vx, Vy and max gross weight of aircraft as flown during test period.

➢ 2006
- Amateur-Built Aviation Rulemaking Committee chartered by the FAA Administrator, providing a forum for the discussion of current issues surrounding amateur-built aircraft.

Advisory Circular

Subject: Certification and Operation of Amateur-Built Aircraft

Date: 9/30/2009 **AC No:** 20-27G

Initiated by: AIR-200

1. Purpose.

a. This advisory circular (AC) provides information about Title 14, Code of Federal Regulations (14 CFR) part 21, Certification Procedures for Products and Parts, § 21.191(g) for the purpose of operating amateur-built aircraft.

b. This AC provides specific information and guidance to amateur aircraft builders on—

(1) Certificating and operating your amateur-built aircraft,

(2) What to do and know before building an amateur-built aircraft,

(3) Designing and constructing your amateur-built aircraft,

(4) Fabricating and assembling your amateur-built aircraft,

(5) Registering your amateur-built aircraft,

(6) Identifying and marking your amateur-built aircraft,

(7) Applying for certification of your amateur-built aircraft,

(8) FAA inspection of your amateur-built aircraft,

(9) Issuing an airworthiness certificate for your amateur-built aircraft,

(10) Flight testing your amateur-built aircraft,

(11) Operating your amateur-built aircraft after flight testing,

(12) Amateur-built aircraft built outside the United States and purchased by a U.S. citizen,

(13) Becoming a repairman for your amateur-built aircraft, and

(14) General safety recommendations.

c. This AC is not mandatory and does not constitute a regulation. This AC describes an acceptable means, but not the only means, to comply with airworthiness certification and operation requirements of amateur-built aircraft. However, if you use the means described in the AC, you need to follow it in all important aspects.

2. Audience. This AC affects anyone, including aircraft kit manufacturers, commercial assistance providers, and amateur aircraft builders who seek an airworthiness certificate for an amateur-built aircraft.

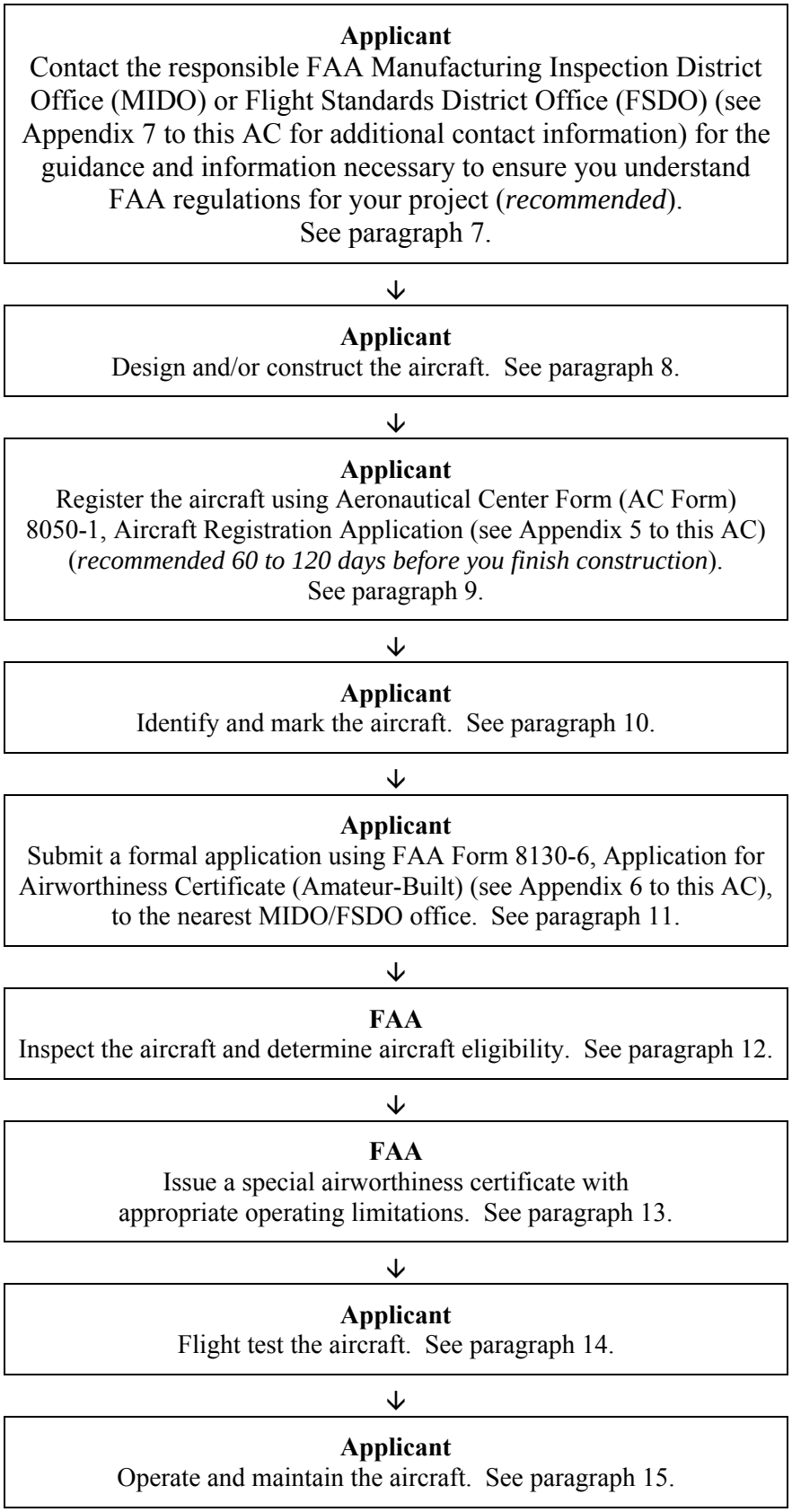
3. Effective Date. This AC is effective immediately upon publication of change 4 to Federal Aviation Administration (FAA) Order 8130.2F, Airworthiness Certification of Aircraft and Related Products.

4. Explanation of Changes. The information in AC 20-139, Commercial Assistance During Construction of Amateur-Built Aircraft, has been rewritten and incorporated into this AC. In addition, this revision updates existing language related to experimental amateur-built aircraft airworthiness certification to be consistent with recommendations from the 2006 and 2008 Amateur-Built Aircraft Aviation Rulemaking Committee.

5. Cancellation. This AC cancels AC 20-27F, dated September 26, 2003, and AC 20-139, Commercial Assistance During Construction of Amateur-Built Aircraft, dated April 3, l996.

6. Certifying and Operating an Amateur-Built Aircraft. You should follow the steps in Figure 1, *in general order*, when pursuing airworthiness certification of your amateur-built aircraft. A detailed explanation of each step follows this flowchart (see paragraphs 7 through 15 of this AC).

Figure 1. Certifying and Operating an Amateur-Built Aircraft



7. What to Know Before Building an Amateur-Built Aircraft.

a. A thorough understanding of the terms and their definitions used throughout this AC is critical for you to understand and follow its guidance. Appendix 1 contains the updated definitions you need to know and understand. Sample forms and letters and associated 14 CFR parts and publications related to this AC are also located in the appendixes.

b. We recommend that before you build your aircraft, you contact your local FAA MIDO or FSDO. Discuss the type of aircraft, its complexity, and its materials. Provide a three-view sketch, drawing, or photograph of the proposed aircraft project, and an approximate date of construction completion. Notify your local FAA MIDO or FSDO if you intend to use commercial assistance to build your aircraft. Keep in mind that a determination of major portion will be made by evaluating the amount of work accomplished by the amateur builder(s) against the total amount of work necessary to complete the aircraft, excluding standard procured items.

> **Note: The major portion of the aircraft is defined as more than 50 percent of the fabrication and assembly tasks, commonly referred to as the "51-percent rule." For example, an amateur-built kit found on the FAA List of Amateur-Built Aircraft Kits has 40 percent of the fabrication/assembly completed by the kit manufacturer. In order to be eligible for an experimental amateur-built airworthiness certificate and per the major portion rule, the fabrication and assembly tasks that may be contracted out (for hire) to another individual (or builder/commercial assistance center) needs to be less than 10 percent.**

c. You may obtain ACs and orders on the Internet from http://www.faa.gov/regulations_policies/. See Appendix 4 to this AC for a list of forms you will need.

d. The Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) (See Appendix 8 to this AC) should be used to assist in determining whether a manufactured aircraft kit may be fabricated and assembled by an amateur builder in accordance with § 21.191(g). A copy of the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) or the Fabrication/Assembly Operation Checklist (FAA Form 8000-38), as appropriate, for each kit on the FAA List of Amateur-Built Aircraft Kits can be accessed via the FAA Web site. You can find the checklist under the "General Aviation & Recreational Aircraft—Ultralights & Amateur-Built Aircraft" section under the main "Aircraft" topic tab on the FAA's main Web site at http://www.faa.gov.

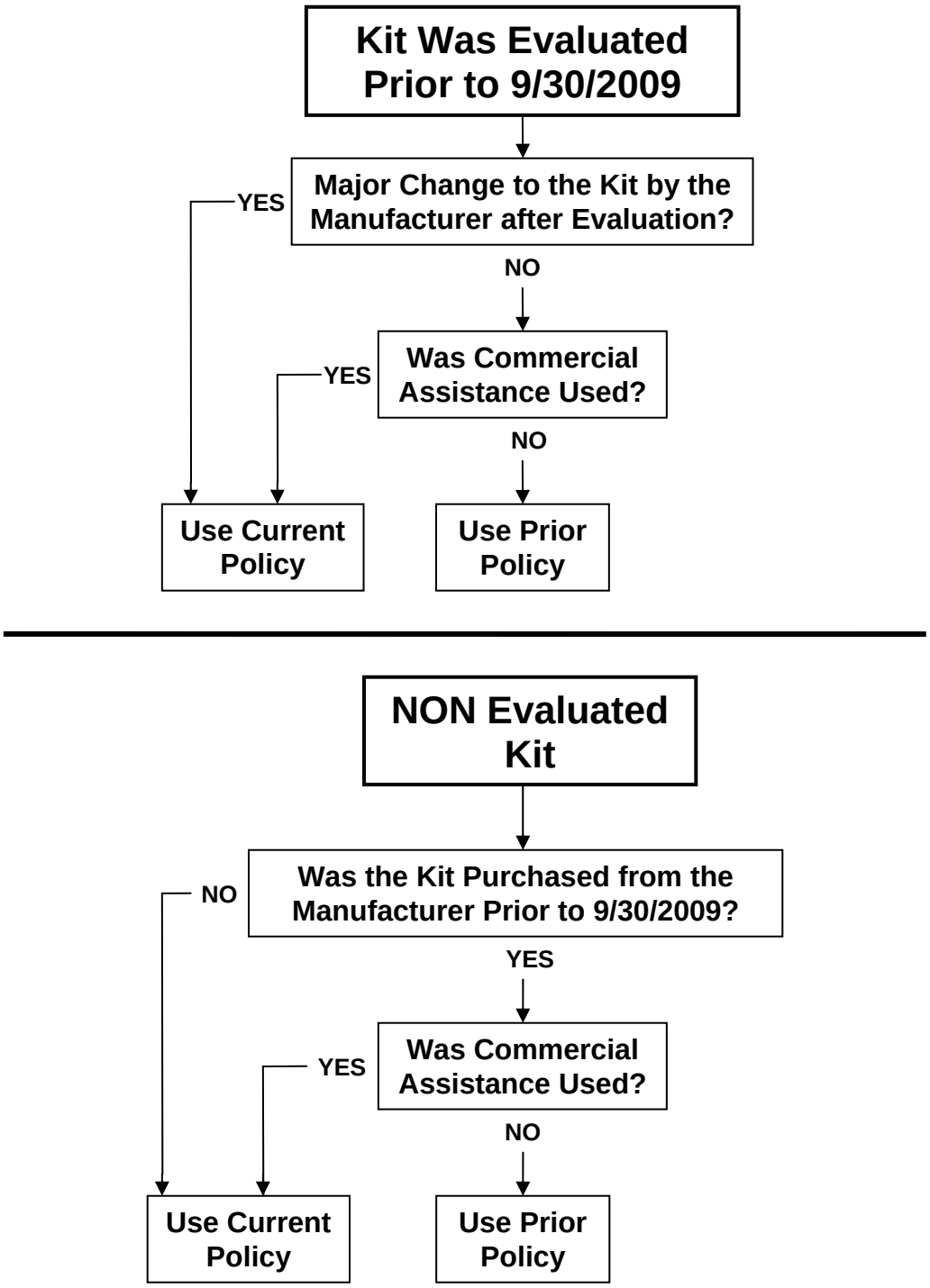
e. Kit manufacturers are encouraged to include, as part of their kit literature, relevant documentation (information packages) explaining the intent and purpose of the amateur-built rule and the relationship of the rule to the specific kit being provided. Kit manufacturers that have had their kit evaluated by the FAA should include in their information packages a copy of the Amateur-Built Aircraft Fabrication and Assembly

Checklist (2009) completed by the Amateur-Built Aircraft National Kit Evaluation Team (NKET) or the Fabrication/Assembly Operation Checklist (FAA Form 8000-38), as appropriate. This information will help you (the amateur builder) understand the responsibilities and limitations under the regulations. The information package should also summarize the process used to determine the kit eligibility and the inspection of the completed aircraft.

f. You should familiarize yourself with the statement you need to sign certifying that the major portion of the aircraft was fabricated and assembled by amateur builders per § 21.191(g) (See paragraph 8b(4)) and also indicate any commercial assistance used to complete the project.. In addition, you should be aware of the need for flight training, as well as the value of participation in the Experimental Aircraft Association (EAA) Flight Advisor program.

g. Ensure that you understand when you may or may not apply prior FAA policy to determine if you've met the major portion requirement. Confusion is normally created when new policy is introduced. To temper this confusion, the FAA allows the application of prior policy, also known as "grandfathering." There are several factors that influence which policy you can use. You are strongly encouraged to talk with your local FAA MIDO or FSDO to identify which policy to use in determining the major portion requirement. Review Figure 2 to determine if you can apply prior FAA policy to your project. Keep in mind the FAA will make the final determination.

Figure 2. Use of Prior Policy



NOTES for Figure 2:

1. An "evaluated kit" means an FAA-evaluated kit, which may allow an amateur builder to meet the major portion requirement for a Special Airworthiness Certificate in the Experimental Amateur Built category, and be placed on the FAA List of Amateur-Built Aircraft Kits.

2. "Prior policy" means the policy that was in effect at the time the kit was evaluated by the FAA (for example, FAA Form 8000-38, AC 20-27, or Order 8130.2). AIR-200 will maintain these documents as part of the Web-based reference materials section concerning amateur-built aircraft.

3. "Current policy" means the policy contained in FAA Order 8130.2F (change 4) or later, AC 20-27G or latest revision, and the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) or latest revision.

4. "Major Change to Kit by Manufacturer" means any change that would affect the allocation of task credit.

5. "Commercial assistance" means to provide assistance with fabricating or assembling amateur-built aircraft for cash, services, or other tender. This does not include one builder helping another without compensation.

6. The manufacturer of a previously evaluated kit that was placed on the FAA List of Amateur-Built Aircraft Kits may request to have the kit reevaluated under the current policy.

h. Ensure You Understand the Need To Properly Document Your Project. It is important to document the entire fabrication and assembly process from the beginning to the end, in a continuous and sequential manner. This is because, at the time of certification, the FAA is required to ascertain whether the amateur builder(s) fabricated and assembled the major portion of the aircraft. Making this finding requires adequate, sufficient, and credible documentation. This documentation should clearly show who performed the task(s), when and where the tasks were performed, depict the methods of construction and quality of workmanship, and document the use of commercial and non-commercial assistance. Examples of documentation and methods that can be used include the following:

(1) The Amateur-Built Aircraft Fabrication and Assembly Checklist (2009);

(2) Comprehensive builder's logs in any format, to include photographs of all the steps included in each of the listed tasks in the Amateur-Builder Aircraft Fabrication and Assembly Checklist (2009), materials and techniques used in construction, as well as dates, locations, and detailed descriptions;

(3) Photographs/video/DVD;

(4) Drawings and engineering specifications;

(5) Kit manufacturer's data, when necessary;

(6) Relevant documentation (for example, plans) and references (for example, handbooks) used;

(7) Documentation concerning any commercial assistance used, including receipts;

(8) Documentation concerning any non-commercial assistance used;

(9) Part inventories and histories;

(10) Receipts and catalogs; and

(11) Logbook entries.

8. Designing and Constructing an Amateur-Built Aircraft.

a. Asking Others for Help.

(1) Contacting the EAA. You can get help and information from the EAA (see Appendix 7 for contact information). The EAA promotes aviation safety and construction of amateur-built aircraft, and provides technical advice and help to its members. EAA technical counselors may be available to visit an amateur-built aircraft project and offer advice on workmanship. The EAA has advised the FAA that it does not provide technical help on designing an aircraft.

(2) Asking Other Persons with Expertise. During construction, you may ask persons with aviation design or engineering experience; other builders; mechanics with aircraft, airframe, and powerplant experience; and other persons with relevant expertise to inspect your aircraft. These persons can inspect the construction of particular components (for example, wing assemblies and fuselages) to verify an acceptable level of safety has been met.

(3) In-Process Inspections. You should be aware that the FAA will not perform in-process inspections during the construction of your aircraft. Because of this, your documentation needs to indicate in-process inspections by knowledgeable persons such as EAA technical counselors or certificated mechanics. All in-process inspection documentation needs to include dates and names of all person(s) involved.

(4) Pre-Cover Inspections. You should be aware that the FAA may conduct pre-cover inspections at its own discretion during the fabrication and assembly process for the purpose of determining if the major portion requirement of § 21.191(g) has been met. As with in-process inspections, all pre-cover inspections need to be thoroughly documented to include dates and names of all person(s) involved. In no instance will the FAA perform any of the fabrication or construction work on an aircraft it is certificating.

b. Commercial Assistance.

(1) Receiving Commercial Educational Assistance. You may receive commercial educational assistance in the fabrication or assembly of specific parts and the completion of certain tasks or processes involved in the construction of your aircraft. The FAA may credit commercial educational assistance provided for educational purposes toward the major portion determination. However, commercial educational assistance cannot exceed a demonstration on how to perform the task. You, as the amateur builder, must still perform the task to receive credit.

(a) In some cases, this commercial assistance may be provided by kit manufacturers or other entities. You need to notify your local FAA MIDO or FSDO if you intend to use commercial assistance in these instances. Section III of FAA Form 8130-12, Eligibility Statement, Amateur-Built Aircraft, contains information on the requirements to document commercial assistance used in an amateur-built aircraft project.

(b) In all cases, any fabrication or assembly tasks contracted to another party (for hire) or provided by a commercial assistance center, including commercial assistance provided by a kit manufacturer, cannot reduce the amateur builders' fabrication and assembly percentage below that required to meet major portion under § 21.191(g).

(c) The FAA may elect to view the actual fabrication and assembly in process at the commercial assistance facility before making the final airworthiness determination. This step may be taken to determine whether the planned project can meet the major portion requirement of § 21.191(g).

(2) Identifying Which Items Can Be Installed Using Commercial Assistance. You may get unlimited commercial assistance for non-checklist items on a kit evaluated by the FAA. A non-checklist item is a task or process that is not listed on the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009). These items also include painting and the installation of interior upholstery or avionics. Such a task or process would not be required to be personally completed by the amateur builder for the aircraft to receive an airworthiness certificate under § 21.191(g). Other non-checklist items include fabrication of engines, propellers, wheels and brake assemblies, and standard aircraft hardware.

(3) Notifying the FAA if You Intend to Use Commercial Assistance. It is strongly recommended you contact your local FAA MIDO or FSDO before using commercial assistance. You may choose to include a request for a preliminary aircraft assessment to determine whether the planned project can meet the major portion requirement of § 21.191(g). However, this preliminary aircraft assessment will be accommodated by the FAA based on the availability of time and resources. Commercial assistance can impact eligibility for an amateur-built experimental certificate as shown in the examples in table 1 below.

Table 1. Use of Commercial Assistance on FAA-Evaluated Kits

Example of Fabrication and Assembly Percentages	FAA Evaluation Determination	Eligible for Commercial Assistance?
49 percent by kit manufacturer 51 percent by amateur builder	Current configuration of your kit *marginally* meets the major portion requirement of § 21.191(g).	No
40 percent by kit manufacturer 51 percent by amateur builder	Current configuration of your kit *significantly* meets the major portion requirement of § 21.191(g).	Yes, up to 9 percent

(4) Documenting the Use of Commercial Assistance. You must submit a notarized Form 8130-12, certifying the major portion was fabricated and assembled for your own education or recreation. This form also requires a builder to identify if and how much commercial builder assistance was used in the construction of the aircraft and to identify the source of the assistance. Evidence and records need to be available to support these statements and be provided to the FAA upon request.

(5) Identifying Circumstances Not Considered Commercial Assistance. Commercial assistance does not include the instance where an incomplete aircraft is sold to another builder and the second builder completes the aircraft. In such a case, the work performed by the first builder or subsequent amateur builders, counts toward completion of the major portion by the second builder. The burden of proof that the aircraft is amateur-built and eligible for an experimental certificate remains with and is the responsibility of the applicant. The second builder should obtain as much detailed information and documentation (see paragraph 7h) from the original builder as possible. If this information is not available, we may not be able to find compliance to the major portion requirement of § 21.191(g).

c. Purchasing Prefabricated or Assembled Components and Materials.

(1) To meet the intent of § 21.191(g) and to be eligible for an amateur-built experimental airworthiness certificate, you need to present satisfactory evidence to show that the aircraft was not fabricated and assembled from completely prefabricated parts or kits. However, the FAA does not expect you to fabricate every part that makes up the aircraft. Items such as engines and engine accessories, propellers, landing gear, rotor blades, rotor hubs, tires, wheel and brake assemblies, instruments, and standard aircraft hardware (such as pulleys, bell cranks, rod ends, bearings, bolts, and rivets) are acceptable and may be procured on the open market (See Table 2 below).

Table 2. Component/Material Use Guidelines

Type of Component/Material	Guidelines for Use
Any choice of engine, propeller, wheel, or other component	We recommend you use FAA-approved components (for example, components produced under a production certificate, a technical standard order, or a parts manufacturer approval).
Any choice of materials	We recommend you use material of established quality (for example, materials produced under a military specification, SAE, or AN).
Major components from type-certificated or experimental aircraft	You should know whether the components are in a condition for safe operation. This description refers to the condition of that component relative to structural strength, wear, or deterioration.

(2) You should not use materials of unknown identity or quality.

(3) You may use the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) (see Appendix 8 to this AC), as an aid to determine if using certain components would affect the requirement to fabricate and assemble the major portion of your aircraft.

d. Use of Salvaged Assemblies from Type-Certificated Aircraft. The use of used or salvaged assemblies (for example, landing gear, horizontal stabilizer, and engine mount) from type-certificated aircraft is permitted, as long as they are in a condition for safe operation. However—

(1) You should contact your local FAA MIDO or FSDO prior to using a major assembly or subassembly, such as wings, fuselage, or tail assembly from a type-certificated aircraft. As an amateur builder, you should be aware that when building your aircraft, the excessive use of major assemblies or subassemblies from type-certificated aircraft would most likely render it ineligible for certification under § 21.191(g).

(2) You will not receive credit for work done on, or the use of, salvaged major assemblies or subassemblies when determining whether your amateur-built aircraft has met the major portion requirement. This would include any “rebuilding” or “alteration” activities to return these components to an airworthy condition.

(3) All fabrication, installation, and assembly tasks on the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) that you’ve completed by the use of used or salvaged assemblies can only be annotated in the “Mfr Kit/Part/Component” column.

Note: The definition of fabrication is to perform work on any material, part, or component, such as layout, bending, countersinking, straightening, cutting, sewing, gluing/bonding, layup, forming, shaping, trimming, drilling, deburring, machining, applying protective coatings, surface preparation and priming, riveting, welding, or heat treating, and transforming the material, part, or component toward or into its finished state.

e. Converting a Type-Certificated Aircraft to an Amateur-Built Aircraft. The practice of performing alterations, repairs, and rebuilding of previously type-certificated aircraft for the purpose of obtaining an experimental amateur-built airworthiness certificate is not authorized under § 21.191(g). Such maintenance actions properly fall under 14 CFR part 43, Maintenance, Preventive Maintenance, Rebuilding, and Alteration. You will not receive credit for these actions toward fabrication or assembly. We will not accept applications for airworthiness inspections on such aircraft.

(1) This policy has been in effect since 1952 under section 1.74-3 of the Civil Aeronautical Manual 1 (CAM 1), which specifically states that "structural components of other aircraft may be used [for amateur-built aircraft]; however, it is not intended that this provision be used to avoid obtaining approval of major alterations to aircraft previously certificated in another category…."

(2) You should use the normal supplemental type certificate process for modifications to these aircraft and they should be kept under their existing maintenance programs to ensure continued airworthiness.

f. Military Surplus Parts.

(1) You will not receive credit toward fabrication or assembly for your amateur-built aircraft project where military surplus, spare parts, components, and assemblies are used.

(2) We strongly recommend you contact your local FAA MIDO or FSDO before using a major assembly or subassembly, such as wings, fuselage, or tail assembly from military surplus aircraft. As an amateur builder, you should be aware that when building your aircraft, the excessive use of military surplus, spare parts, components, and assemblies may render your project ineligible for certification under § 21.191(g).

g. Meeting General Design and Construction Requirements.

(1) Amateur builders are free to develop their own designs or build from existing designs. We do not approve those designs; it would be impractical to develop design standards for the wide variety of design configurations created by designers, kit manufacturers, and amateur builders.

(2) We recommend that you use FAA-approved components, especially when you are building parts constituting the primary structure. During the certification process, you should be prepared to prove to the FAA the identity and quality of any materials you use.

h. Designing the Cockpit/Cabin. When you design the cockpit or cabin, you should—

(1) Avoid sharp corners or edges, protrusions, knobs, and similar objects that may cause injury to the pilot or passengers during an accident. If you cannot avoid having them, you should pad them.

(2) Install seatbelts and shoulder harnesses.

(3) Mark and place cockpit instruments and placards so they are easy to see.

(4) Include a fuel selector so the pilot can control the flow of all tanks. Make sure it's labeled clearly and appropriately.

(5) Clearly mark system controls, such as the fuel selectors and electrical switches or breakers. Make sure these controls are easy to reach and operate.

(6) Use the sample checklist in Appendix 1 to AC 90-89, Amateur-Built Aircraft and Ultralight Flight Testing Handbook, to inspect cockpit instrumentation and systems controls.

(7) Place a firewall between the engine compartment and the cockpit or cabin if possible.

i. Designing the Fuel System. When you design the fuel system, you should—

(1) Ensure your fuel tank can supply adequate fuel to the engine in all anticipated flight attitudes.

(2) Ensure the fuel system controls are easy to reach and operate.

(3) Provide a carburetor heat system to minimize the possibility of carburetor icing.

(4) Provide a method for filtering the fuel supply to remove water and other contaminants.

j. Building an Aircraft Using a Plan.

(1) Modifying a Design Plan. If you are working from a design plan and you want to make modifications, you should discuss the changes with the designer, kit manufacturer, or equally knowledgeable person. You should record in your builder's log any modifications you make.

(2) Buying a Partially Built Aircraft Built From a Plan. If you buy a partially built aircraft built from a plan, you should get all fabrication and assembly records, such as receipts for materials, the builder's log, and aircraft, engine, and propeller logbooks, from the previous owner. You should add the construction efforts of the previous amateur builders to your builder's log to show the construction history of the aircraft. This information may help us to determine that your aircraft is eligible for amateur-built certification (see to paragraph 8b(5) for more information).

(3) Having Your Aircraft Evaluated. During final inspection for compliance with § 21.191(g), an amateur-built aircraft built using a plan needs to be evaluated. The Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) (see Appendix 8 to this AC) may be used as a guide. If you use commercial assistance, you may also use the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) before construction, listing the tasks or processes where you plan to use commercial assistance and those you plan to perform yourself. You should obtain a written evaluation from the FAA regarding the effect the proposed commercial assistance will have on the major portion requirement for the completed aircraft.

k. Building an Aircraft Using a Kit.

(1) Ensuring You Receive the Information You Need From Industry. Kit manufacturers should include a copy of the amateur-built regulation and advise amateur builders they need to certify that they fabricated and assembled the major portion of the aircraft construction project solely for their own education or recreation. In addition to the aircraft assembly manual, the kit manufacturer should reference this AC regarding acceptable commercial assistance and the use of a build center for help and instruction during construction of an aircraft. The kit manufacturer should inform amateur builders of the help available through various EAA programs, including EAA chapters, technical counselors, and flight advisors.

(2) Kits Eligible for Certification. You should always verify the aircraft may be eligible for certification as an amateur-built aircraft. Advertisements can be somewhat vague, and in some cases misleading, about whether a kit may produce an aircraft eligible for amateur-built certification. For example, certain kits provide so much fabrication and assembly, they preclude the use of any commercial assistance if the applicant seeks certification as an amateur-built aircraft. Refer to the information in table 3 for more information.

Table 3 – Certification Eligibility

Scenario	Eligible	Not Eligible
You are able to show you built the major portion of the aircraft.	X	
The kit you are using or intend to use is one we evaluated and placed on the FAA List of Amateur-Built Aircraft Kits. (**Note**: We do not certify nor approve kits, kit manufacturers, or kit distributors. However, we do evaluate kits at the request of the kit manufacturer or distributor, primarily to determine if an aircraft built from a particular kit may meet the major portion requirement. Kits other than those on the list may produce an aircraft we may certify as amateur-built.)	X	
You used a construction kit containing raw materials and some prefabricated components. (**Note**: The raw materials may include lengths of wood, tubing, extrusions, or similar items that may have been cut to an approximate length. We will also accept some prefabricated parts such as heat-treated ribs, bulkheads, or complex parts made from sheet metal, fiberglass, or polystyrene, and precut/predrilled material, provided you fabricate and assemble the major portion of the aircraft as required by § 21.191(g), Experimental certificates: Operating amateur-built aircraft.) In addition, it is important to document who did the actual work associated with these tasks.	X	
You assembled your aircraft from a kit composed of completely finished, prefabricated components, parts, or precut or predrilled materials, and using these materials means you did not fabricate and assemble the major portion of the aircraft.		X
You hired someone to build the aircraft for you, and hiring this person means you did not fabricate and assemble the major portion of the aircraft.		X

(3) Modifying a Kit. If you are working from a construction kit and you want to make modifications, you should discuss the changes with the kit manufacturer or equally knowledgeable person. You should record in your builder's log any modifications you make.

(4) Buying an Aircraft Built From a Partially Completed Aircraft Kit. If you buy an aircraft built from a partially completed kit, you should get all fabrication and assembly records, such as receipts for materials, the builder's log, and aircraft, engine, propeller logbooks, and any other documentation available (see paragraph 7h) from the previous owner. You should add the construction efforts of the previous amateur builders to your builder's log to show the construction history of the kit. This information will help us to determine whether your completed aircraft is eligible for amateur-built certification.

l. Requesting an FAA Kit Evaluation by the National Kit Evaluation Team (NKET) Within the United States.

(1) Only amateur-built aircraft kit manufacturers may submit a request for an aircraft kit evaluation. Reasons for requests may include the following:

(a) The evaluation of newly developed kits.

(b) The reevaluation of previously evaluated kits with design changes (derivative kits) that may affect the fabrication and/or assembly percentage totals of the amateur builder.

(c) The reevaluation of previously evaluated kits that the FAA determines may not meet the major portion requirement.

> **Note: A request for reevaluation is not needed for new owners of companies that produce a kit(s) previously evaluated and currently posted to the List of Amateur-Built Aircraft Kits located on the FAA Web site.**

(2) We will evaluate only those kits for which the manufacturer has submitted a letter (verbal requests will not be accepted) requesting an aircraft kit evaluation. The letter should be submitted to the following address:

Federal Aviation Administration
Production and Airworthiness Division (AIR-200)
950 L'Enfant Plaza SW.
5th Floor, Suite 500
Washington, DC 20024
ATTN: National Kit Evaluation Team

(3) All requests for kit evaluations should include the following:

(a) Manufacturer name and address,

(b) Point of contact,

(c) Primary and alternate phone numbers,

(d) Address of requested inspection location,

(e) Date of kit availability (minimum 8 weeks from date of request),

(f) Kit name and type (for example, Starship 2/airplane, helicopter), and

(g) Kit model number or other specific identifier.

Note: Requests lacking any of the above information will not be considered.

(4) We will notify the manufacturer by letter that their request for a kit evaluation has been received. The letter will also provide the specific information needed to send the required kit documentation to the FAA (see paragraph 8n).

m. Requesting an NKET Evaluation Outside the United States. In some cases, foreign manufacturers produce amateur-built kits for sale in the United States. We will not perform kit evaluations outside the United States. However, a kit evaluation may take place if the foreign manufacturer has a distributor located within the United States. The foreign kit manufacturer's representative will need to display the complete aircraft kit at the distributor's U.S. location. All of the requirements in paragraphs 8l, 8n, and 8o of this AC apply.

n. Documentation Required When Requesting a Kit Evaluation. Manufacturer's requesting an aircraft kit evaluation must provide their aircraft kit documentation to the FAA. Documentation must be submitted in English and reflect the nature and scope of the aircraft design and include the following:

(1) The aircraft's construction, and weight and balance information;

(2) The exact configuration as sold;

(3) Photographs, drawings, detailed parts listings, builder instructions, and other design, fabrication, and assembly information; and

(4) Any requirements for special tooling, processes, or commercial assistance.

Note: Kits lacking this documentation will not be evaluated.

o. Sending Kit Documentation. Kit documentation may be sent either electronically (preferred), by conventional mail, or by shipping service. All hard copy documentation must be provided in two complete and identical sets. Hard copy documents will not be returned to the manufacturer. The manufacturer is responsible for all document shipping costs.

p. FAA Receipt of Kit Documentation. The FAA will verify by conventional mail and email to the manufacturer that the required kit documentation has been received and is complete. If the information is insufficient or, if sent by hard copy, is incomplete or not identical, we will advise the kit manufacturer that the process may not proceed until the issue is resolved.

Note: For additional information on the NKET, see FAA Order 8130.35, Amateur-Built Aircraft National Kit Evaluation Team.

9. Registering Your Amateur-Built Aircraft. Section 21.173, Airworthiness Certificates: Eligibility requires that all U.S. civil aircraft be registered before we issue an airworthiness certificate. Part 47 of 14 CFR, Aircraft Registration, prescribes the regulatory requirements for registering civil aircraft. The procedures for registering an amateur-built aircraft are as follows.

a. When to Register. We recommend you apply for registration 60 to 120 days before you finish constructing your aircraft and before you submit FAA Form 8130-6 to us. This should allow you to get your registration information before your FAA inspection.

b. How to Submit Your Application. Submit an application under § 47.33, Aircraft not previously registered anywhere, to the FAA Aircraft Registration Branch, AFS-750 (see Appendix 7 to this AC for the address). Include the following in the package:

(1) Documentation that you own the aircraft. You may use AC Form 8050-88, Affidavit of Ownership for Amateur-Built Aircraft (see Appendix 9 to this AC), or its equivalent. The affidavit needs to state that you built the aircraft from parts or a kit and that the person signing the affidavit is the owner.

(2) A signed bill of sale from the manufacturer of the kit, if the aircraft was built from a kit. You may use AC Form 8050-2, Aircraft Bill of Sale, but strike out the word "aircraft" and insert the word "kit" (see Appendix 10 to this AC). If you cannot provide a bill of sale for the kit, explain why. If you are not the original purchaser of an uncompleted kit, provide AFS-750 traceability from the kit manufacturer through the previous builder(s) to yourself.

(3) A completed AC Form 8050-1 (see Appendix 5 to this AC). Keep the pink copy for your records until you get your Certificate of Aircraft Registration (AC Form 8050-3). The pink copy and FAA Form 8130-6 are not authorization to operate your aircraft.

(4) A check or money order payable to the FAA for the registration fee. The registration fee is $5. If you are requesting a special registration number, it is an extra $10. Therefore, if you submit your registration and request for a special registration number at the same time, the total fee is $15.

(5) A special request letter as described in paragraph 9c, if you want a specific registration number.

c. How to Request a Specific Registration Number.

(1) If you want us to assign a specific registration number, list up to five possible numbers, in order of your preference (see Appendix 11 to this AC). Your suggested numbers may be up to five characters long, and the last two characters can be letters. There is an additional fee for this service. If you want to find out whether your preferred numbers are available, you can contact AFS-750 (see Appendix 7 to this AC for the address).

(2) You can reserve a registration number for 1 year; this service costs $10. If the number is not assigned to an aircraft during this period, you are required to renew this reservation every year by paying an additional $10 fee before the end of each 1-year period.

10. Identifying and Marking Your Amateur-Built Aircraft.

a. When to Mark. Mark your aircraft before you apply for an airworthiness certificate.

b. Required Marks. When you apply for an airworthiness certificate for an amateur-built aircraft, you are required to show compliance with the identification requirements of § 21.182, Aircraft identification, and the nationality and registration marking requirements of 14 CFR part 45, Identification and Registration Marking. Part 45, subpart C, Nationality and Registration Marks, provides specific marking requirements for all aircraft. AC 45-2, Identification and Registration Marking, provides additional guidance. You should direct any questions to your local FAA office.

(1) Identification Information. If you built the aircraft from your design, and the model designation and serial number are not used for any other aircraft, you may use whatever number you want. If you built the aircraft from a plan or a kit, use the identification information provided by the plan designer or kit manufacturer. Make sure the information is the same as you have shown on AC Form 8050-88. Place this information on the identification plate as described in table 4 below.

Table 4. Aircraft Identification Plate Requirements

Elements of the Plate	Details of Those Elements
Type of plate	Fireproof
Information to put on the plate	• Name of the builder (not the designer, plans producer, or kit manufacturer) • Model designation • Serial number of the aircraft
How to put the information on the plate	Etch, stamp, engrave, or mark by some other approved fireproof marking method
How to attach the plate	• So that it cannot be defaced or removed during normal service, or lost or destroyed during an accident • So that it is legible to a person standing on the ground
Where to attach the plate	On the exterior of the aircraft in accordance with § 45.11, Identification of Aircraft and Related Products: General, as follows: • Adjacent to the aft of the rear-most entrance door, or • On the fuselage near the tail surfaces.

(2) Nationality Designation and Registration Marks. You are required to paint, or affix by a way that is just as permanent, the N-number on the body of the aircraft. For example, only use paints that need thinners or strippers to remove it, or decals. Do not use tape that can be easily peeled off or water-soluble paint. For the appropriate location of the marks, refer to § 45.22 and 45.25 for fixed-wing aircraft and § 45.27 for non-fixed-wing aircraft. For size, follow the guidelines as described in table 5 below.

Table 5. Aircraft Registration Marking Requirements

Height of Marks	Type of Aircraft	Other
At least 2 inches	Aircraft with the same external configuration (that is, a replica) of a small aircraft built at least 30 years ago	
3 inches	Most amateur-built aircraft	
12 inches	Aircraft with a maximum cruising speed that exceeds 180 knots calibrated air speed (207 miles per hour)	You are required to also use 12-inch high marks if you will be operating your aircraft outside the United States or Canada, or in an Air Defense Identification Zone.

(3) "Experimental" Aircraft Designation. Follow the guidelines as described in table 6 below to determine whether you need an "experimental" aircraft designation.

Table 6. "Experimental" Designation Aircraft Marking Requirements

If you have a—	Then you—
non-replica aircraft	are required to display the word "experimental" on your aircraft in accordance with § 45.23(b). You are required to place the 2- to 6-inch high letters near each entrance to the cabin or the cockpit.
replica aircraft	do not have to label your aircraft "experimental" if it is a replica of an aircraft built at least 30 years ago. However, in such a case, you are required to include an "X" between the nationality designation and the registration number. For example, the marking on an amateur-built replica of an antique aircraft would be "NX1234." You should use the letter symbol appropriate to the airworthiness certificate of the aircraft being certificated, not the aircraft being replicated.

c. Passenger Warning. In accordance with your operating limitations, you are required to display the following placard in a readily visible location in the cabin or cockpit, unless your aircraft has only one seat:

> **"Passenger Warning: This aircraft is amateur-built and does not comply with Federal safety regulations for standard aircraft."**

11. Applying for Certification of an Amateur-Built Aircraft. Submit the following documents and information to your local FAA MIDO/FSDO. You can get all the forms you need from your local FAA office.

a. FAA Form 8130-6 (see Appendix 6 to this AC).

b. AC Form 8050-3 (AFS-750 will return this form to you, which you in turn will show to the FAA inspector at the time the aircraft is inspected).

c. Sufficient information to identify the aircraft, such as photographs or three-view drawings.

d. A notarized FAA Form 8130-12 certifying that the major portion of the aircraft was fabricated and assembled for your own education or recreation, and that you have evidence, such as a builder's log or its equivalent, to support this statement (see Appendix 12 to this AC).

e. A program letter in accordance with § 21.193, Experimental certificates: General (see Appendix 13 to this AC). With the information in this letter, we can prescribe the limitations and conditions necessary to ensure safety. The program letter should—

(1) Identify the aircraft (using photographs, for example).

(2) Identify the purpose of the certificate (that is, operating an amateur-built aircraft).

(3) Describe a flight test program that addresses the requirements, goals, and objectives during flight testing, including the area over which you intend to do your flight tests (see paragraph 14).

12. FAA Inspection of an Amateur-Built Aircraft.

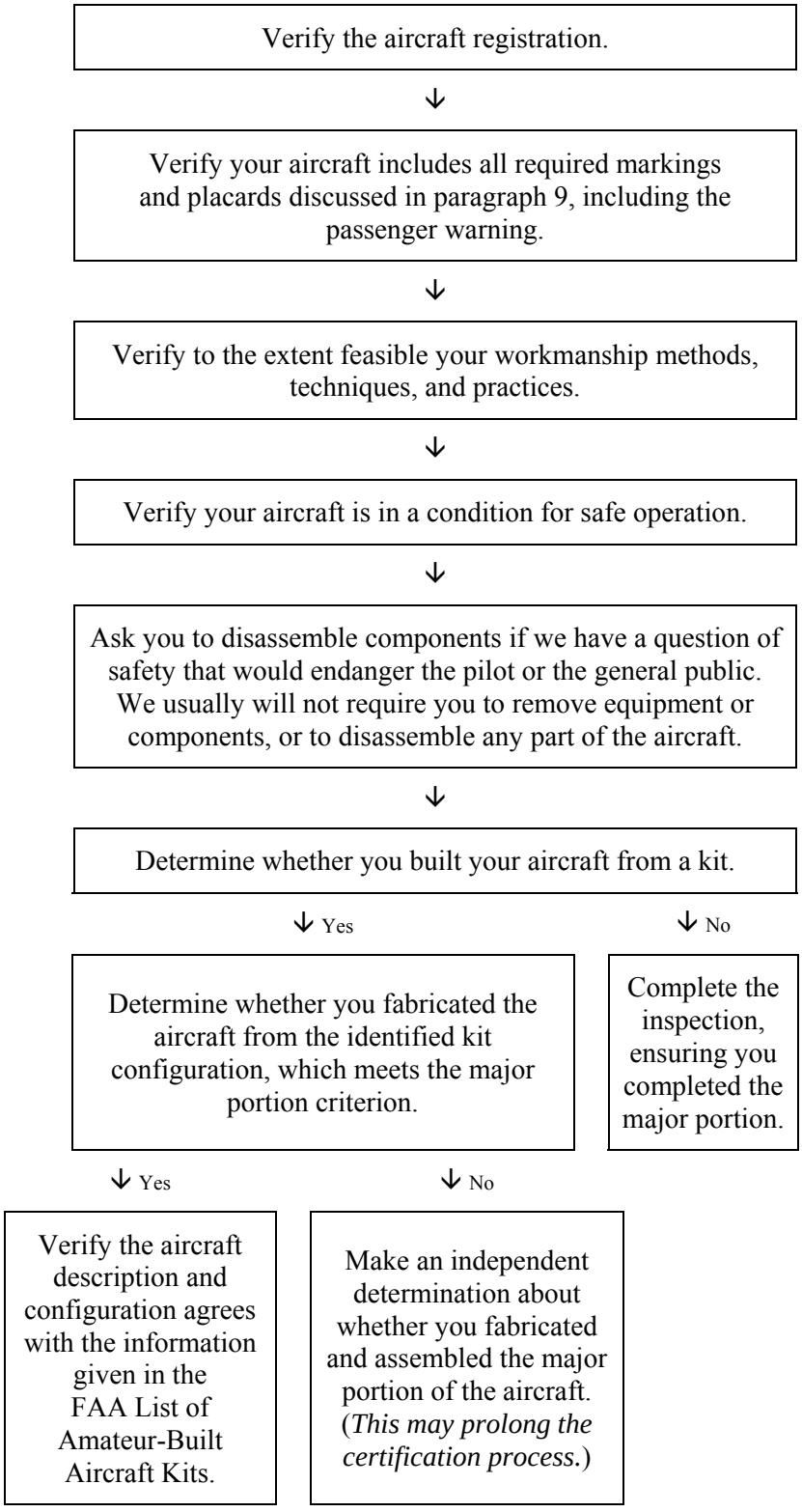
a. General Information About How We Conduct Inspections.

(1) We inspect your aircraft for general airworthiness when you submit it for airworthiness certification. We will not normally inspect it before you register it or during construction, but may if you choose to use commercial assistance. However, we need to inspect it before we issue your airworthiness certificate. Standard FAA policy is to issue one airworthiness certificate for the aircraft; however, in some cases, we may issue a limited-duration airworthiness certificate, which would be valid only for flight testing (phase I) the aircraft. Upon successful completion of the flight test phase, a second airworthiness certificate is issued. When we inspect the aircraft, it should be ready to fly, except for having the cowlings, fairings, and panels open for inspection.

(2) The FAA's ability to inspect and certify aircraft is greatly enhanced by the use of FAA designated airworthiness representatives (DAR). DARs are the primary resource for the certification of amateur-built aircraft. You may contact your local FAA office to locate an authorized DAR. DARs are authorized to charge a fee for their services, which they set. We do not govern this fee.

b. Visual Inspection. The FAA will conduct an onsite, visual, general airworthiness certification inspection of the aircraft, including reviewing the information provided in paragraphs 12c(1) and (2), before issuing a special airworthiness certificate with the appropriate operating limitations. The FAA will perform the visual inspection as shown in Figure 3, FAA Visual Inspection of an Amateur-Built Aircraft.

Figure 3. FAA Visual Inspection of an Amateur-Built Aircraft



c. Paperwork Review. We will review the following information as part of our inspection:

(1) Evidence of inspections, such as builder's log entries, or EAA technical counselors' visit report cards describing any inspections conducted during the construction. Those entries should indicate what was inspected and by whom (for example, certificated mechanics or other builders/commercial assistance providers), and the date of the inspection. Include photographs documenting construction details, if available.

(2) Aircraft logbooks and maintenance records covering the aircraft, engine, and propeller or rotor blade(s) so the FAA can review the service records, record the inspection, and issue the airworthiness certificate. We will use the builder's log entries to substantiate that your construction workmanship methods, techniques, and practices are acceptable, and to support your inspection and airworthiness statement on FAA Form 8130-6.

13. Issuing an Airworthiness Certificate for an Amateur-Built Aircraft.

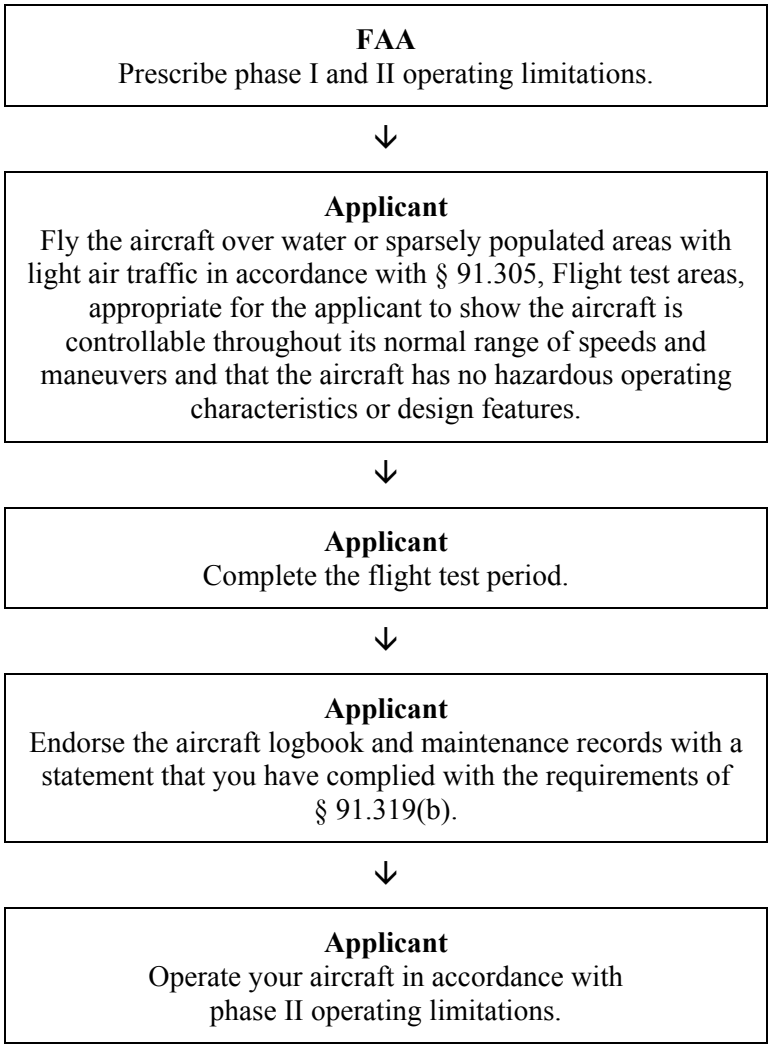
a. Issuance of a Special Airworthiness Certificate and Operating Limitations.

(1) In addition to 14 CFR § 91.319 requirements, the guidelines you use to operate and maintain your aircraft are included in your operating limitations, which become part of the special airworthiness certificate. We may impose additional limitations to those listed in Order 8130.2 if necessary for safety. References in this AC to "phase I" mean those operating limitations that apply to the aircraft while it's undergoing initial flight tests. "Phase II" refers to those operating limitations that apply after you complete the initial flight tests. Phase I and phase II operating limitations are provided in Order 8130.2. The FAA will issue the special airworthiness certificate, but its validity will be subject to compliance with its operating limitations. Those limitations will provide for operation in an assigned flight test area for a certain number of hours (phase I) before the second part (phase II) of the limitations becomes effective, which releases the aircraft from the flight test area.

(2) After we inspect your aircraft and determine it is in a condition for safe operation, we will issue FAA Form 8130-7, Special Airworthiness Certificate, with the appropriate operating limitations in accordance with Order 8130.2 (see to Figure 4).

(3) In accordance with § 91.203(b), you are required to display the airworthiness certificate in the cabin or at the cockpit entrance so that it is legible to passengers or crew while the aircraft is being operated. The pilot is required to conduct all flights under the operating limitations and part 91. Details concerning flight test areas are provided in paragraph 14 of this AC.

Figure 4. Issuing Phase I and II Operating Limitations



b. Issuance of a Limited Duration Airworthiness Certificate and Operating Limitations. Because of unique or special situations, the FAA may issue a limited duration airworthiness certificate, which is valid only for flight testing (phase I). When you satisfactorily complete all flight test maneuvers and required flight test hours, you may apply to the local FAA office for a new airworthiness certificate and revised operating limitations.

(1) How to Apply. Submit another FAA Form 8130-6 and a letter requesting amendment of the airworthiness certificate and operating limitations.

(2) Issuing the Amended Airworthiness Certificate and Operating Limitations. After you complete the phase I flight test period, we will review the flight log to determine whether you have taken corrective action on any problems found during the flight testing and whether the aircraft's condition for safe operation has been established under § 91.319. We also may reinspect the aircraft before we issue the subsequent airworthiness certificate and phase II operating limitations.

c. Refusal to Issue an Airworthiness Certificate. We do not certify amateur-built aircraft designs or require that you modify the design before airworthiness certification. However, we may deny airworthiness certification when we inspect your aircraft if we find it does not meet the requirements for the certification you request or is not in a condition for safe operation. If we deny your certification request, we will send you a letter stating why we denied it. We will put a copy of the letter in your aircraft record in the FAA Aircraft Registry office. Refer to § 21.193(c) and Order 8130.2 for more information.

14. Phase I Flight Testing.

a. Flight Tests. Section 91.319(b) requires you to show that your aircraft is controllable at all its normal speeds during all the maneuvers you might expect to execute. You also need to show that your aircraft has no hazardous operating characteristics or design features.

b. Number of Flight Test Hours. The number of hours depends on your aircraft's characteristics. See table 7 below for specific requirements. The FAA may decide you need additional hours of flight testing beyond those shown in the table to comply with § 91.319(b).

Table 7. Aircraft Flight Test Requirements

Aircraft Characteristics	Required Flight Testing
Type-certificated engine/propeller combination	25 hours
Non-type-certificated engine/propeller combination	40 hours
Gliders, balloons, and dirigibles eligible for FAA certification	10 hours, including five takeoffs and five landings

c. Location. You may suggest the location of a flight test area to the FAA. If the FAA approves your suggestion, they will specify it in your operating limitations. Usually, the flight test area should be within a 25-statute-mile radius from your aircraft's base of operation. Under § 91.305, the flight test is required to be over open water or sparsely populated areas with light air traffic so it does not pose a hazard to persons or property on the ground. You can ask us to help you pick a suitable area to ensure adequate airspace for flight testing.

d. Procedures. See AC 90-89 for recommended flight testing procedures. We strongly recommend amateur builders get a copy of this AC and follow its guidance. Also, the EAA will help its members in developing flight testing programs.

e. Restrictions.

(1) Carrying Passengers. You may not carry passengers while you are restricted to the flight test area or during any portion of your phase I flight test program. We suggest you use a tape or video recorder for recording readings and other similar tasks. If you need an additional crewmember for a particular flight test, specify that in your application program letter for the airworthiness certificate. We will list this need in your operating limitations.

(2) Flight Instruction. You may not receive flight instruction during your flight test.

(3) Operating Limitations. When we issue an unlimited duration special airworthiness certificate, the operating limitations may be prescribed in accordance with Order 8130.2. The purpose of the operating limitations is for you to show and maintain compliance with § 91.319. The operating limitations include a requirement for you to endorse the aircraft logbook and maintenance records with a statement certifying the aircraft has been shown to comply with that section. The limitations may vary for some aircraft, and we may issue additional limitations in unusual conditions in the interest of safety. We will review the limitations with you to ensure you thoroughly understand each one.

15. Continuing To Operate Your Amateur-Built Aircraft.

a. After you complete all required flight tests, hours, and maneuvers, the aircraft is considered safe for continued flight. To continue operating your aircraft, you are required to follow the operating limitations issued with the special airworthiness certificate.

b. You may not operate your aircraft without the original airworthiness certificate and operating limitations aboard. If you lose the operating limitations or they are mutilated or no longer legible, you need to contact AFS-750 in Oklahoma City, Oklahoma (see Appendix 7 to this AC for the address) to obtain a copy of the operating limitations. Once you receive a copy from AFS-750, take that copy to your local FAA office to issue an original replacement FAA Form 8130-7 and/or operating limitations. If you can document that the aircraft has completed the flight test requirements (through aircraft logbook and maintenance records entries), we may issue new operating limitations without initial flight test operating limitations.

c. You should be aware of the responsibilities for maintenance and recordkeeping as prescribed in your operating limitations.

16. Certifying an Amateur-Built Aircraft Built Outside the United States and Purchased By a U.S. Citizen.

a. Many civil aviation authorities recognize FAA regulatory requirements and certification procedures and in some cases have incorporated them into their certification process. However, some countries' or jurisdictions' requirements for certification may not meet FAA requirements. If you purchase an aircraft from one of those countries or jurisdictions, you may not be allowed to operate it in the United States under § 21.191(g). Contact your local FAA office to find out the exact steps to take to meet U.S. certification requirements. You should be prepared to send the following:

(1) If available, documentation obtained by the previous owner from the civil aviation authority of the country or jurisdiction of origin verifying the aircraft was originally certificated as an amateur-built experimental aircraft and that it meets the requirements of § 21.191(g). If such documentation is not available, you will be required to show compliance with § 21.191(g) through the same process used by other applicants (see paragraph 6).

(2) FAA Form 8130-6.

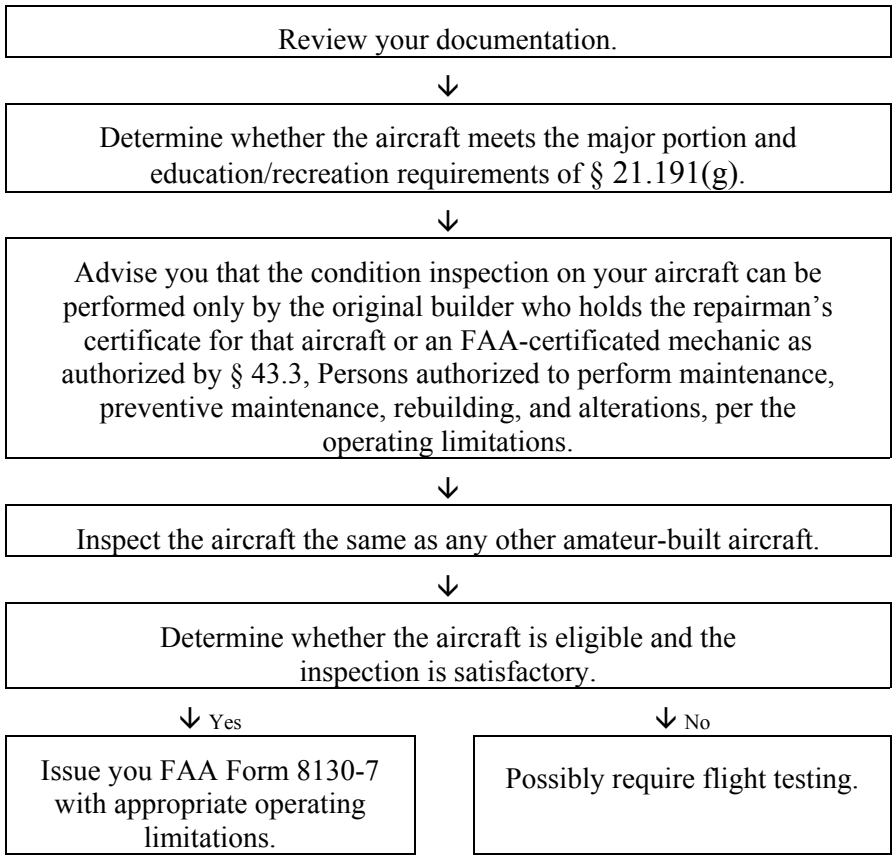
(3) A record of a condition inspection performed on the aircraft by the previous owner, by an inspector authorized by the previous country of registry, or by a U.S. FAA-certificated airframe and powerplant mechanic within a reasonable period of time (about 30 days) before you apply for certification. (Use part 43, Appendix D, Scope and Detail of Items (as Applicable to the Particular Aircraft) to be Included in Annual and 100 Hour Inspections, as a guide for the inspection.) Record the inspection in the aircraft records.

(4) Proper documentation of registration under part 47 (see paragraph 9 for registration procedures).

(5) A letter of request for certification (see Appendix 13 to this AC).

b. FAA Inspection of an Amateur-Built Aircraft Built Outside the United States and Purchased by a U.S. Citizen. During our inspection of the aircraft, we will be following the procedures in Figure 5, Procedures the FAA Uses to Complete the Inspection.

Figure 5. Procedures the FAA Uses to Complete the Inspection



c. Requirements and Procedures for a U.S. Citizen Building an Amateur-Built Aircraft Outside the United States. You are required to comply with the civil aviation authority's rules in the country or jurisdiction where you wish to register and operate the aircraft. If you want to bring your aircraft into the United States, you will have to apply for a U.S. airworthiness certificate as described previously in this paragraph.

17. Becoming a Repairman of Your Amateur-Built Aircraft. You can get a repairman certificate under certain circumstances. However, the only privilege this certificate gives you under 14 CFR § 65.104, Repairman certificate—experimental aircraft builder—Eligibility, privileges and limitations, is to do the annual condition inspection. The certificate will be valid only for a specific person and a specific aircraft. The privileges and limitations in part 65, Certification: Airmen Other Than Flight Crewmembers, § 65.103, Repairman certificate: Privileges and limitations, do not apply to becoming this type of repairman (experimental aircraft builder). To get a certificate, apply to your local FAA office. See Appendix 14 to this AC and AC 65-23, Certification of Repairmen (Experimental Aircraft Builders), for additional application information. You can get a certificate if you are—

a. The primary builder of your aircraft, even as the second builder, and can satisfactorily prove to us that you can determine whether the aircraft is in a condition for safe operation.

b. One of the builders of an amateur-built aircraft registered in a corporation's name. The applicant should prove through use of the builder's log that they can determine whether the aircraft is in a condition for safe operation.

18. Safety Recommendations.

a. Pilot Responsibilities. As a pilot, you should—

(1) Be thoroughly familiar with the aircraft, its engine and propeller operation, and ground handling characteristics, including operation of the brakes. You should test these operations by conducting taxi tests before attempting flight operations. **You are not authorized to take off during taxi tests without an airworthiness certificate**.

(2) Take precautions to ensure emergency equipment and personnel are readily available in the event of an accident, before the first flight of an amateur-built aircraft.

(3) Refrain from aerobatic maneuvers until you have enough flight experience to establish that the aircraft is satisfactorily controllable throughout its normal range of speeds and maneuvers. You should document all satisfactorily conducted maneuvers in the aircraft logbook, flight test program log, or equivalent document.

b. Operating Limitations.

(1) The operating limitations require that you operate the aircraft under the applicable air traffic control and general operating rules of part 91. If you plan to operate under instrument flight rules (IFR), pay particular attention to the applicable requirements in part 91.

(2) The operating limitations will authorize all operations to be conducted (visual flight rules, day/night, and IFR). These operating limitations may state that the instruments and equipment mandated by § 91.205(b), (c), and/or (d), Powered civil aircraft with standard category U.S. airworthiness certificates: Instrument and equipment requirements, need to be installed and operable. In addition, these operating limitations may identify flight test are as defined in § 91.305.

c. Equipment.

(1) Unless you received deviation authority from air traffic control, if your aircraft has a Mode C transponder, the aircraft also is required to have a calibrated airspeed/static pressure system to prevent an error in altitude reporting. You should have the transponder tested and inspected under § 91.413, ATC transponder tests and inspections.

(2) Once your aircraft has been released from the flight test area, you are required to have an emergency locator transmitter aboard in accordance with § 91.207, Emergency locator transmitters. An aircraft with only one seat is exempt from this requirement according to § 91.207(f)(9).

d. Rotorcraft.

(1) If you intend to fly an aircraft with a fully articulated rotor system, be particularly cautious of ground resonance. If you maintain or allow this condition of rotor imbalance to progress, it can be extremely dangerous and may result in structural failure.

(2) As a rotorcraft pilot, you should complete tests showing that stability, vibration, and balance are satisfactory with the rotorcraft tied down before beginning hover, horizontal, or vertical flight operations.

19. Getting the Publications Referred to in This AC. We encourage you to access FAA publications at the following URL: http://www.faa.gov. You may also purchase copies of FAA orders from—

Superintendent of Documents
P.O. Box 371954
Pittsburgh, PA 15250-7954.

Additionally, the Government Printing Office (GPO) online bookstore is also available at http://bookstore.gpo.gov/index.html.

20. Submitting Comments About This AC. Submit direct comments regarding this AC to—

Federal Aviation Administration
Production and Airworthiness Division (AIR-200)
950 L'Enfant Plaza SW
5th Floor, Suite 500
Washington, DC 20024

Frank P. Paskiewicz
Manager
Production and Airworthiness Division, AIR-200

APPENDIX 1. DEFINITIONS RELEVANT TO THIS AC

Amateur-Built Aircraft. Section 21.191(g) defines an amateur-built aircraft (sometimes referred to as home-built aircraft) as an aircraft in which the major portion has been fabricated and assembled by a person(s) who undertook the construction project solely for their own education or recreation. Amateur-built aircraft may be constructed from an amateur builder's original design, from purchased plans, or from a kit.

Amateur-Built Aircraft Fabrication and Assembly Checklist (2009). An aid used by the FAA in determining if a manufacturer's aircraft kit meets the major portion requirement of § 21.191(g). (Sample in Appendix 8 to this AC.)

Commercial Assistance. To provide assistance with fabricating or assembling amateur-built aircraft for cash, services, or other tender. This does not include one builder helping another without compensation.

Compensation. Payment by the amateur builder applicant in cash, services, or other tender to any person who provides assistance for hire in the building of an aircraft.

Designated Airworthiness Representative (DAR). Within the context of this AC, a private person designated by the FAA to act on its behalf to inspect amateur-built aircraft and issue airworthiness certificates.

Experimental Aircraft Association (EAA) Technical Counselor. As defined by the EAA, EAA technical counselors provide overall mechanical help and pre-cover guidance to owners and amateur builders.

FAA Inspector. Within the context of this AC, an aviation safety inspector or an authorized DAR.

FAA Office. Within the context of this AC, an FAA office with airworthiness certification authority. These offices include flight standards district offices, manufacturing inspection district offices, certificate management offices, certificate management units, and manufacturing inspection satellite offices that may delegate the airworthiness inspection and certification of an amateur-built aircraft to a DAR.

Fabricate. To perform work on any material, part, or component, such as layout, bending, countersinking, straightening, cutting, sewing, gluing/bonding, layup, forming, shaping, trimming, drilling, deburring, machining, applying protective coatings, surface preparation and priming, riveting, welding or heat treating, and transforming the material, part, or component toward or into its finished state.

Fireproof. The capacity to withstand the heat associated with fire at least as well as steel.

Letter of Eligibility. A letter provided by the FAA to an aircraft kit manufacturer advising that the aircraft kit to be evaluated meets the major portion requirement of § 21.191(g).

Major Portion. The fabrication and assembly of more than 50 percent of the aircraft (also known as the "51-percent rule").

National Kit Evaluation Team (NKET). A team of FAA personnel with extensive experience in the evaluation and certification of amateur-built aircraft.

NKET Evaluation. A courtesy evaluation by the FAA's National Kit Evaluation Team (NKET) for the purpose of determining if specific aircraft kits, as manufactured, allow an amateur builder to meet the major portion requirement of § 21.191(g).

Person. Section 1.1 of 14 CFR defines person as an individual, firm, partnership, corporation, company, association, joint-stock association, or governmental entity. It includes a trustee, receiver, assignee, or similar representative of any of them.

APPENDIX 2. 14 CFR PARTS RELATED TO THIS AC

1. 14 CFR part 1, Definitions and Abbreviations. Part 1 defines the words and terms used in subchapters A through K of chapter 1 of 14 CFR.

2. 14 CFR part 21, Certification Procedures for Products and Parts. Part 21 sets forth rules for the issuance of and change to type certificates, and issuance of production certificates, airworthiness certificates, and export airworthiness approvals. It also sets forth the rules governing the holders of these certificates and the approval of certain materials, parts, processes, and appliances.

3. 14 CFR part 43, Maintenance, Preventive Maintenance, Rebuilding, and Alteration. Part 43 sets forth rules governing the maintenance, preventive maintenance, rebuilding, and alteration of aircraft having a U.S. airworthiness certificate, certain foreign-registered aircraft, and airframes, aircraft engines, propellers, appliances, and component parts of these aircraft.

4. 14 CFR part 45, Identification and Registration Marking. Part 45 sets forth rules for display of nationality and registration marks; display of special airworthiness classification marks; identification plates for aircraft, aircraft engines, and propellers; and identification of certain replacement and critical aircraft parts and components.

5. 14 CFR part 47, Aircraft Registration. Part 47 sets forth rules for registering an aircraft.

6. 14 CFR part 65, Certification: Airmen Other Than Flight Crewmembers. Part 65 sets forth rules for the issuance of certain certificates and associated ratings for airmen other than flight crewmembers and the general operating rules for the holders of those certificates.

7. 14 CFR part 91, General Operating and Flight Rules. Part 91 sets forth rules governing the operation of most aircraft within the United States.

APPENDIX 3. PUBLICATIONS RELATED TO THIS AC

AC 21-12, Application for U.S. Airworthiness Certificate, FAA Form 8130-6. AC 21-12 provides instructions for preparing and submitting FAA Form 8130-6.

AC 45-2, Identification and Registration Marking. AC 45-2 describes one way to comply with part 45.

AC 65-23, Certification of Repairmen (Experimental Aircraft Builders). AC 65-23 provides guidance to builders of experimental aircraft concerning certification as a repairman.

AC 90-89, Amateur-Built Aircraft and Ultralight Flight Testing Handbook. AC 90-89 sets forth suggestions and safety-related recommendations to help amateur and ultralight builders in developing individualized aircraft flight test plans.

FAA Order 8130.2, Airworthiness Certification of Aircraft and Related Products. Order 8130.2 establishes procedures for accomplishing original and recurrent airworthiness certification of aircraft and related products.

FAA Order 8130.35, Amateur-Built National Kit Evaluation Team. Order 8130.35 defines the policy and procedures of the FAA Amateur-Built Aircraft National Kit Evaluation Team and establishes a standard methodology to evaluate amateur-built aircraft kits.

APPENDIX 4. LIST OF SAMPLE FORMS AND LETTERS IN THIS AC

Sample AC Form 8050-1, Aircraft Registration Application (see Appendix 5).

Sample FAA Form 8130-6, Application for Airworthiness Certification (Amateur-Built) (see Appendix 6).

Sample Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) (Fixed-wing) (see Appendix 8).

Sample AC Form 8050-88, Affidavit of Ownership for Amateur-Built Aircraft (see Appendix 9).

Sample AC Form 8050-2, Aircraft Bill of Sale (see Appendix 10).

Sample letter for requesting an aircraft registration number under 14 CFR § 47.15 (see Appendix 11).

Sample FAA Form 8130-12, Eligibility Statement, Amateur-Built Aircraft (see Appendix 12).

Sample program letter to accompany application for airworthiness certificate (see Appendix 13).

Sample FAA Form 8610-2, Airman Certificate and/or Rating Application (see Appendix 14).

APPENDIX 5. SAMPLE AERONAUTICAL CENTER FORM 8050-1, AIRCRAFT REGISTRATION APPLICATION

FORM APPROVED
OMB No. 2120-0042

UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION-MIKE MONRONEY AERONAUTICAL CENTER
AIRCRAFT REGISTRATION APPLICATION

CERT. ISSUE DATE

UNITED STATES REGISTRATION NUMBER N 130EA

AIRCRAFT MANUFACTURER & MODEL
BUILDER - VANS RV-6

AIRCRAFT SERIAL No.
1001

FOR FAA USE ONLY

TYPE OF REGISTRATION (Check one box)

☒ 1. Individual ☐ 2. Partnership ☐ 3. Corporation ☐ 4. Co-owner ☐ 5. Gov't. ☐ 8. Non-Citizen Corporation

NAME OF APPLICANT (Person(s) shown on evidence of ownership. If individual, give last name, first name, and middle initial.)

BUILDER, EARLY A.

TELEPHONE NUMBER: (903) 555-1212

ADDRESS (Permanent mailing address for first applicant listed.) (If P.O. BOX is used, physical address must also be shown.)

Number and street: 1240 Bois d' Arc Road

Rural Route: P.O. Box:

CITY	STATE	ZIP CODE
SAVOY	TX	75479

☐ **CHECK HERE IF YOU ARE ONLY REPORTING A CHANGE OF ADDRESS**

ATTENTION! Read the following statement before signing this application. This portion MUST be completed.

A false or dishonest answer to any question in this application may be grounds for punishment by fine and / or imprisonment (U.S. Code, Title 18, Sec. 1001).

CERTIFICATION

I/WE CERTIFY:

(1) That the above aircraft is owned by the undersigned applicant, who is a citizen (including corporations) of the United States.

(For voting trust, give name of trustee: _____), or:

CHECK ONE AS APPROPRIATE:

a. ☐ A resident alien, with alien registration (Form 1-151 or Form 1-551) No. _____

b. ☐ A non-citizen corporation organized and doing business under the laws of (state) _____ and said aircraft is based and primarily used in the United States. Records or flight hours are available for inspection at _____

(2) That the aircraft is not registered under the laws of any foreign country; and

(3) That legal evidence of ownership is attached or has been filed with the Federal Aviation Administration.

NOTE: If executed for co-ownership all applicants must sign. Use reverse side if necessary.

TYPE OR PRINT NAME BELOW SIGNATURE

EACH PART OF THIS APPLICATION MUST BE SIGNED IN INK.

SIGNATURE	TITLE	DATE
Early A. Builder	Owner	xx/xx/xxxx
SIGNATURE	TITLE	DATE
SIGNATURE	TITLE	DATE

NOTE Pending receipt of the Certificate of Aircraft Registration, the aircraft may be operated for a period not in excess of 90 days, during which time the PINK copy of this application must be carried in the aircraft.

AC Form 8050-1 (5/03) (0052-00-628-9007)

APPENDIX 6. SAMPLE FAA FORM 8130-6, APPLICATION FOR AIRWORTHINESS CERTIFICATE (AMATEUR-BUILT) (FACE SIDE)

FAA FORM 8130-6, APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE

Form Approved
O.M.B. No. 2120-0018
Exp. date: 12/31/2010

U.S. Department of Transportation
Federal Aviation Administration

APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE

INSTRUCTIONS - Print or type. Do not write in shaded areas; these are for FAA use only. Submit original only to an authorized FAA Representative. If additional space is required, use attachment. For special flight permits complete Sections II, VI and VII as applicable.

I. AIRCRAFT DESIGNATION

1. REGISTRATION MARK	2. AIRCRAFT BUILDER'S NAME (Make)	3. AIRCRAFT MODEL DESIGNATION	4. YR. MFR.	FAA CODING
N130EA	Builder	VAN'S RV-6	2001	
5. AIRCRAFT SERIAL NO.	**6. ENGINE BUILDER'S NAME (Make)**	**7. ENGINE MODEL DESIGNATION**		
1001	LY-CON	0-360 EXP		
8. NUMBER OF ENGINES	**9. PROPELLER BUILDER'S NAME (Make)**	**10. PROPELLER MODEL DESIGNATION**	**11. AIRCRAFT IS (Check if applicable)**	
ONE	SENSENICH	C2YK-1BF/F7661B4	IMPORT	

II. CERTIFICATION REQUESTED

APPLICATION IS HEREBY MADE FOR: (Check applicable items)

A	1		STANDARD AIRWORTHINESS CERTIFICATE (Indicate Category)		NORMAL		UTILITY		ACROBATIC		TRANSPORT		COMMUTER		BALLOON		OTHER	
B		✓	SPECIAL AIRWORTHINESS CERTIFICATE (Check appropriate items)															
		7	PRIMARY															
		9	LIGHT-SPORT (Indicate Class)		AIRPLANE		POWER-PARACHUTE		WEIGHT-SHIFT-CONTROL		GLIDER		LIGHTER THAN AIR					
		2	LIMITED															
		5	PROVISIONAL (Indicate Class)	1	CLASS I													
				2	CLASS II													
		3	RESTRICTED (Indicate operation(s) to be conducted)	1	AGRICULTURE AND PEST CONTROL		2		AERIAL SURVEY		3		AERIAL ADVERTISING					
				4	FOREST (Wildlife Conservation)		5		PATROLLING		6		WEATHER CONTROL					
				0	OTHER (Specify)													
		4	EXPERIMENTAL (Indicate operation(s) to be conducted)	1	RESEARCH AND DEVELOPMENT		2	✓	AMATEUR BUILT		3		EXHIBITION					
	✓			4	AIR RACING		5		CREW TRAINING		6		MARKET SURVEY					
				0	TO SHOW COMPLIANCE WITH THE CFR		7		OPERATING (Primary Category) KIT BUILT AIRCRAFT									
				8	OPERATING LIGHT-SPORT	8A		Existing Aircraft without an airworthiness certificate & do not meet § 103.1										
						8B		Operating Light-Sport Kit-Built										
						8C		Operating light-sport previously issued special light-sport category airworthiness certificate under § 21.190										
		8	SPECIAL FLIGHT PERMIT (Indicate operation(s) to be conducted, then complete Section VI or VII as applicable on reverse side)	1	FERRY FLIGHT FOR REPAIRS, ALTERATIONS, MAINTENANCE, OR STORAGE													
				2	EVACUATION FROM AREA OF IMPENDING DANGER													
				3	OPERATION IN EXCESS OF MAXIMUM CERTIFICATED TAKE-OFF WEIGHT													
				4	DELIVERING OR EXPORTING		5		PRODUCTION FLIGHT TESTING									
				6	CUSTOMER DEMONSTRATION FLIGHTS													
C	6		MULTIPLE AIRWORTHINESS CERTIFICATE (check ABOVE "Restricted Operation" and "Standard" or "Limited" as applicable)															

III. OWNER'S CERTIFICATION

A. REGISTERED OWNER (As shown on certificate of aircraft registration) — IF DEALER, CHECK HERE →

NAME	ADDRESS
Early A. Builder	1240 Bois d'Arc Road, Savoy, TX 75479

B. AIRCRAFT CERTIFICATION BASIS (Check applicable blocks and complete items as indicated)

AIRCRAFT SPECIFICATION OR TYPE CERTIFICATE DATA SHEET (Give No. and Revision No.): N/A	✓ AIRWORTHINESS DIRECTIVES (Check if all applicable AD's are complied with and give the number of the last AD SUPPLEMENT available in the biweekly series as of the date of application): 2001-13
AIRCRAFT LISTING (Give page number(s)): N/A	SUPPLEMENTAL TYPE CERTIFICATE (List number of each STC incorporated): N/A

C. AIRCRAFT OPERATION AND MAINTENANCE RECORDS

✓	CHECK IF RECORDS IN COMPLIANCE WITH 14 CFR Section 91.417	TOTAL AIRFRAME HOURS: 0.0	3 EXPERIMENTAL ONLY (Enter hours flown since last certificate issued or renewed): 0.0

D. CERTIFICATION - I hereby certify that I am the registered owner (or his agent) of the aircraft described above, that the aircraft is registered with the Federal Aviation Administration in accordance with Title 49 of the United States Code 44101 et seq. and applicable Federal Aviation Regulations, and that the aircraft has been inspected and is airworthy and eligible for the airworthiness certificate requested.

DATE OF APPLICATION	NAME AND TITLE (Print or type)	SIGNATURE
01/30/2009	Early A. Builder, Owner	Early A. Builder

IV. INSPECTION AGENCY VERIFICATION

A. THE AIRCRAFT DESCRIBED ABOVE HAS BEEN INSPECTED AND FOUND AIRWORTHY BY: (Complete the section only if 14 CFR part 21.183(d) applies.

2	14 CFR part 121 CERTIFICATE HOLDER (Give Certificate No.)	3	CERTIFICATED MECHANIC (Give Certificate No.)	6	CERTIFICATED REPAIR STATION (Give Certificate No.)
5	AIRCRAFT MANUFACTURER (Give name or firm)				

DATE	TITLE	SIGNATURE

V. FAA REPRESENTATIVE CERTIFICATION

(Check ALL applicable block items A and B)

A. I find that the aircraft described in Section I or VII meets requirements for: 4 THE CERTIFICATE REQUESTED; AMENDMENT OR MODIFICATION OF CURRENT AIRWORTHINESS CERTIFICATE

B. Inspection for a special permit under Section VII was conducted by: FAA INSPECTOR; FAA DESIGNEE; CERTIFICATE HOLDER UNDER; 14 CFR part 65; 14 CFR part 121 OR 135; 14 CFR part 145

DATE	DISTRICT OFFICE	4 DESIGNEE'S SIGNATURE AND NO.	1 FAA INSPECTOR'S SIGNATURE

FAA Form 8130-6 (10-04) Previous Edition Dated 5/01 May be Used Until Depleted, Except for Light-Sport Aircraft NSN: 0052-00-024-7006

APPENDIX 6. SAMPLE FAA FORM 8130-6, APPLICATION FOR AIRWORTHINESS CERTIFICATE (AMATEUR-BUILT) (REVERSE SIDE)

VI. PRODUCTION FLIGHT TESTING

A. MANUFACTURER

NAME | ADDRESS

B. PRODUCTION BASIS *(Check applicable item)*

- ☐ PRODUCTION CERTIFICATE *(Give production certificate number)* →
- ☐ TYPE CERTIFICATE ONLY
- ☐ APPROVED PRODUCTION INSPECTION SYSTEM

C. GIVE QUANTITY OF CERTIFICATES REQUIRED FOR OPERATING NEEDS

DATE OF APPLICATION | NAME AND TITLE *(Print or Type)* | SIGNATURE

VII. SPECIAL FLIGHT PERMIT PURPOSES OTHER THAN PRODUCTION FLIGHT TEST

A. DESCRIPTION OF AIRCRAFT

REGISTERED OWNER | ADDRESS

BUILDER *(Make)* | MODEL

SERIAL NUMBER | REGISTRATION MARK

B. DESCRIPTION OF FLIGHT — CUSTOMER DEMONSTRATION FLIGHTS ☐ *(Check if applicable)*

FROM | TO

VIA | DEPARTURE DATE | DURATION

C. CREW REQUIRED TO OPERATE THE AIRCRAFT AND ITS EQUIPMENT

☐ PILOT ☐ CO-PILOT ☐ FLIGHT ENGINEER ☐ OTHER *(Specify)*

D. THE AIRCRAFT DOES NOT MEET THE APPLICABLE AIRWORTHINESS REQUIREMENTS AS FOLLOWS:

E. THE FOLLOWING RESTRICTIONS ARE CONSIDERED NECESSARY FOR SAFE OPERATION: *(Use attachment if necessary)*

F. CERTIFICATION – I hereby certify that I am the registered owner (or his agent) of the aircraft described above; that the aircraft is registered with the Federal Aviation Administration in accordance with Title 49 of the United States Code 44101 et seq. and applicable Federal Aviation Regulations; and that the aircraft has been inspected and is safe for the flight described.

DATE | NAME AND TITLE *(Print or Type)* | SIGNATURE

VIII. AIRWORTHINESS DOCUMENTATION (FAA/DESIGNEE use only)

- ☐ A. Operating Limitations and Markings in Compliance with 14 CFR Section 91.9, as applicable.
- ☐ B. Current Operating Limitations Attached
- ☐ C. Data, Drawings, Photographs, etc. *(Attach when required)*
- ☐ D. Current Weight and Balance information Available in Aircraft
- ☐ E. Major Repair and Alteration, FAA Form 337 *(Attach when required)*
- ☐ F. This inspection Recorded in Aircraft Records
- ☐ G. Statement of Conformity, FAA Form 8130-9 *(Attach when required)*
- ☐ H. Foreign Airworthiness Certification for Import Aircraft *(Attach when required)*
- ☐ I. Previous Airworthiness Certificate Issued in Accordance with 14 CFR Section _____ CAR _____ (Original Attached)
- ☐ J. Current Airworthiness Certificate Issued in Accordance with 14 CFR Section _____ (Copy Attached)
- ☐ K. Light-Sport Aircraft Statement of Compliance, FAA Form 8130-15 *(Attach when required)*

FAA Form 8130-6 (10-04) Previous Edition Dated 5/01 May be Used Until Depleted, except for Light-Sport Aircraft NSN: 0052-00-024-7006

APPENDIX 7. USEFUL ADDRESSES

Federal Aviation Administration
Aircraft Registration Branch, AFS-750

Mailing Address
P.O. Box 25504
Oklahoma City, OK 73125-0504

Physical Address
6425 South Denning
Registry Building, Room 118
Oklahoma City, OK 73169

Telephone: (405) 954-3116

Fax: (405) 954-3548

Experimental Aircraft Association, Inc.

Mailing Address
P.O. Box 3086
Oshkosh, WI 54903-3086

Physical Address
3000 Poberezny Rd.
Oshkosh, WI 54902

Telephone: (920) 426-4800
Fax: (920) 426-6761
EAA aviation information services: (920) 426-4800

E-mail: webmaster@eaa.org
Public Web site: http://www.eaa.org
Members Only Web site: http://members.eaa.org/homebuilders/index.html

FAA's Production and Airworthiness Division, National Kit Evaluation Team
Production and Airworthiness Division (AIR-200)
Federal Aviation Administration
950 L'Enfant Plaza SW.
5th Floor, Suite 500
Washington, DC 20024
ATTN: National Kit Evaluation Team

Telephone: (202) 385-6346
Fax: (202) 385-6475

APPENDIX 8. AMATEUR-BUILT AIRCRAFT FABRICATION AND ASSEMBLY CHECKLIST (2009) (FIXED-WING)

Amateur-Built Aircraft Fabrication and Assembly Checklist (2009)
(Fixed-wing)

Name(s):……

Address:……....

Aircraft Model:…….

Date:……..

Remarks:……

……...

NOTE: This checklist is applicable only to fixed-wing aircraft. Evaluation of other types of aircraft (that is, rotorcraft, balloons, lighter than air) will not be accomplished with this form.

NOTE: This checklist is invalid for and will not be used to evaluate an altered or modified type-certificated aircraft with the intent to issue an Experimental Amateur-Built Airworthiness Certificate. Such action violates FAA policy and DOES NOT meet the intent of 14 CFR § 21.191(g).

Note: Enter "N/A" in any box where a listed task is not applicable to the particular aircraft being evaluated. Use the "Add item" boxes at the end of each section to add applicable unlisted tasks and award credit.

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #	**Fuselage — 24 Listed Tasks**				
F1	Fabricate Longitudinal Members				
F2	Fabricate Composite Cores or Shells, Skins				
F3	Fabricate Bulkheads or Cross-members				
F4	Fabricate Control Yokes/Sticks				
F5	Assemble Control Yokes/Sticks				
F6	Fabricate Flt Control Push Pull Tubes/Cables				
F7	Assemble Flt Control Push Pull Tubes/Cables				
F8	Assemble Fuselage Basic Structure				
F9	Fabricate Brackets and Fittings				
F10	Assemble Brackets and Fittings				
F11	Fabricate Cables, Wire, and Lines				
F12	Assemble Cables, Wire, and Lines				

F13	Fabricate Fuselage Fuel System Components				
F14	Assemble Fuselage Fuel System Components				
F15	Fabricate Fuselage Covering or Skin				
F16	Assemble Fuselage Covering or Skin				
F17	Fabricate Windshield				
F18	Assemble Windshield to Fuselage				
F19	Fabricate Windows				
F20	Assemble Windows to Fuselage				
F21	Fabricate Doors/Canopy				
F22	Assemble Doors/Canopy to Fuselage				
F23	Fabricate Mast and Strut Assembly				
F24	Assemble Mast and Strut Assembly				
	Add item:				
	Add item:				
	Add item:				
	Add-item:				
Total of # Fuselage Tasks	**Fuselage Subtotal**	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	Fuselage Total Points ►				

FABRICATION AND ASSEMBLY TASKS		**A**	**B**	**C**	**D**
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #	**Wings — 51 Listed Tasks**				
W1	Fabricate Wing Spars				
W2	Assemble Wing Spars to Wing				
W3	Fabricate Wing Ribs or Cores				
W4	Assemble Wing Ribs or Cores to Wing				
W5	Fabricate Composite Cores				
W6	Assemble Composite Cores to Wing				
W7	Fabricate Wing Leading and Trailing Edges				
W8	Assemble Wing Leading & Trailing Edges to Wing				
W9	Fabricate Drag/Anti-drag Truss Members				
W10	Assemble Drag/Anti-drag Truss Members to Wing				
W11	Fabricate Wing Brackets and Fittings				
W12	Assemble Wing Brackets and Fittings to Wing				
W13	Fabricate Wing Tips				
W14	Assemble Wing Tips to Wings				
W15	Fabricate Special Tools or Fixtures				
W16	Fabricate Aileron Spars				
W17	Fabricate Aileron Ribs or Cores				
W18	Assemble Aileron Ribs or Cores to Aileron				

W19	Assemble Aileron Primary Structure				
W20	Fabricate Aileron Leading and Trailing Edges				
W21	Assemble Aileron Leading and Trailing Edges				
W22	Fabricate Aileron Brackets and Fittings				
W23	Assemble Aileron Brackets & Fittings to Aileron				
W24	Fabricate Aileron covering or Skin				
W25	Assemble Aileron Covering or Skin to Aileron				
W26	Fabricate Aileron Roll Trim				
W27	Assemble Aileron Trim Tab/Roll Trim to Aileron				
W28	Assemble Aileron to Wing				
W29	Fabricate Flap Spars				
W30	Assemble Flap Spars to Flap				
W31	Fabricate Flap Ribs or Cores				
W32	Assemble Flap Ribs or Cores to Flap				
W33	Assemble Flap Primary Structure				
W34	Fabricate Flap Leading and Trailing Edges				
W35	Assemble Flap Brackets and Fittings to Flap				
W36	Fabricate Flap Covering or Skin				
W37	Assemble Flap Covering or Skin to flap				
W38	Assemble Flaps to Wing				
W39	Fabricate Wing External Lighting Components				
W40	Assemble Wing Ext Lighting Components to Wing				
W41	Assemble Basic Wing Structure				
W42	Fabricate Wing Fuel System components				
W43	Assemble Wing Fuel System Components to Wing				
W44	Fabricate Cables Wires and Lines				
W45	Assemble Cables Wires and Lines to Wing				
W46	Fabricate Wing Covering or Skin				
W47	Assemble Wing Covering or Skin to Wing				
W48	Fabricate Wing Struts/Wires				
W49	Fabricate Fuel Tank				
W50	Assemble Fuel Tank to Wing				
W51	Calibrate Fuel System Components				
	Add item:				
	Add item:				
	Add item:				
	Add item:				
Total # of Wings Tasks	**Wings Subtotal**	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	Wings Total Points ►				

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #	**Empennage — 57 Listed Tasks**				
E1	Fabricate Horizontal Stabilizer Spars				
E2	Assemble Horizontal Stabilizer Spars to Stabilizer				
E3	Fabricate Ribs or Cores				
E4	Assemble Horizontal Stabilizer Ribs or Cores to Stabilizer				
E5	Fabricate Horizontal Stabilizer Leading and Trailing Edge				
E6	Assemble Horizontal Stabilizer Leading and Trailing Edges to Stabilizer				
E7	Fabricate Horizontal Stabilizer Brackets & Fittings				
E8	Assemble Horizontal Stabilizer Brackets and Fittings to Stabilizer				
E9	Assemble Horizontal Stabilizer Structure				
E10	Fabricate Horizontal Stabilizer Lead/Trailing Edges				
E11	Assemble Horizontal Stabilizer Lead/Trailing Edges to Stabilizer				
E12	Fabricate Horizontal Stabilizer Cables, Wires and Lines				
E13	Assemble Horizontal Stabilizer Cables, Wires and Lines to stabilizer				
E14	Fabricate Horizontal Stabilizer Empennage Covering or Skin				
E15	Assemble Horizontal Stabilizer Empennage Covering or Skin to Stabilizer				
E16	Assemble Horizontal Stabilizer Structure to Fuselage				
E17	Fabricate Elevator Spars				
E18	Assemble Elevator Spars to Elevator				
E19	Fabricate Elevator Ribs or Cores				
E20	Assemble Elevator Ribs or Cores to Elevator				
E21	Assemble Elevator Structure				
E22	Fabricate Elevator Leading and Trailing Edge				
E23	Assemble Elevator Leading and Trailing Edges to Elevator				
E24	Fabricate Elevator Brackets and Fittings				
E25	Assemble Elevator Brackets and fittings to Elevator				
E26	Fabricate Elevator Covering or Skins				
E27	Assemble Elevator Covering or Skins to Elevator				
E28	Fabricate Elevator Trim Tab				
E29	Assemble Elevator Trim Tab to Elevator				
E30	Fabricate Special Tools or Fixtures				

E31	Fabricate Vertical Stabilizer Spars				
E32	Assemble Vertical Stabilizer Spar to the Vertical Stabilizer				
E33	Fabricate Vertical Stabilizer Ribs or Cores				
E34	Assemble Ribs or Cores to Vertical Stabilizer				
E35	Fabricate Vertical Stabilizer Leading/Trailing Edges				
E36	Assemble Leading and Trailing Edges to Vertical Stabilizer				
E37	Fabricate Vertical Stabilizer Brackets and Fittings				
E38	Assemble brackets and Fittings to Vertical Stabilizer				
E39	Fabricate Vertical Stabilizer Cables, Wires, Lines				
E40	Assemble Cables, Wires, Lines to Vertical Stabilizer				
E41	Fabricate Vertical stabilizer Empennage Covering or Skin				
E42	Assemble Vertical stabilizer Empennage Covering or Skin to Vertical Stabilizer				
E43	Assemble Vertical Stabilizer Structure to Fuselage				
E44	Fabricate Rudder Spar				
E45	Assemble Rudder Spar to Rudder				
E46	Fabricate Rudder Ribs or Cores				
E47	Assemble Rudder Ribs or Cores to Rudder				
E48	Assemble Rudder Structure				
E49	Fabricate Rudder Leading and Trailing Edge				
E50	Assemble Rudder Leading and Trailing Edge to Rudder				
E51	Fabricate Rudder Brackets and Fittings				
E52	Assemble Rudder Brackets and Fittings to Rudder				
E53	Fabricate Rudder Covering or Skin				
E54	Assemble Rudder Covering or Skin to Rudder				
E55	Fabricate Rudder Trim Tab				
E56	Assemble Rudder Trim Tab to Rudder				
E57	Assemble Rudder to Vertical Stabilizer				
	Add item:				
	Add item:				
	Add item:				
	Add item:				
Total # of Empennage Tasks	**Empennage Subtotal**	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	Empennage Total Points ►				

FABRICATION AND ASSEMBLY TASKS Task #	Landing Gear — 12 Listed Tasks	A Mfr Kit/Part/ Component	B Commercial Assistance	C Am-Builder Assembly	D Am-Builder Fabrication
LG1	Fabricate Struts				
LG2	Fabricate Brake System Components				
LG3	Fabricate Landing Gear Actuation System Components				
LG4	Fabricate Landing Gear System Cables, Wires and Lines				
LG5	Assemble Wheels				
LG6	Assemble Brakes, Tires				
LG7	Assemble Landing Gear				
LG8	Assemble Landing Gear System Components Next Level Structure				
LG9	Align Landing Gear				
LG10	Fabricate Landing Gear Fairings/Gear Doors				
LG11	Assemble Landing Gear Fairings/Gear Doors to Next Level Structure				
LG12	Perform Landing Gear Operational Check (Normal, Emergency Systems)				
	Add item:				
	Add item:				
	Add item:				
	Add item:				
Total # of Land Gear Tasks	**Landing Gear Subtotal**	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	Landing Gear Total Points ►				

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #	**Propulsion — 27 Listed Tasks**				
P1	Fabricate Engine Mounts(s)				
P2	Assemble Engine Mount(s) to Next Level Structure				
P3	Fabricate Engine Cooling System/Baffles				
P4	Assemble Engine Cooling System Baffles to Engine				
P5	Fabricate Engine Compartment Overheat/Fire Detection System				
P6	Assemble Engine Compartment Overheat/Fire Detection System to Engine Compartment				
P7	Fabricate Induction System				
P8	Assemble Induction System to Engine				
P9	Fabricate Exhaust System				
P10	Assemble Exhaust System to Engine				
P11	Fabricate Engine Control Installation Brackets				
P12	Assemble Engine Controls to Next Level Structure				
P13	Rig and Adjust Engine Controls				
P14	Fabricate Brackets and Fittings				
P15	Assemble Brackets and Fittings to Next Level Structure				
P16	Fabricate Cables, Wires and Lines				
P17	Assemble Cables, Wires and Lines to next Level Structure				
P18	Assemble Engine (Likely N/A)				
P19	Assemble Engine to Engine Mount				
P20	Fabricate Engine Propeller (Likely N/A)				
P21	Fabricate Propeller Spinner Components				
P22	Assemble Propeller to Engine				
P23	Rig and Track Propeller				
P24	Fabricate Engine Cowling				
P25	Assemble Engine Cowling to Airframe				
P26	Fabricate Engine Fuel System Components				
P27	Assemble Engine Fuel System Components to Next Level Structure				
	Add item:				
	Add item:				
	Add item:				
	Add item:				
Total # of Propulsion Tasks	**Propulsion Subtotal**	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	Propulsion Total Points ►				

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #	**Cockpit Interior — 11 Listed Tasks**				
C1	Fabricate Instrument Panel				
C2	Fabricate Instrument Panel Bracket and Fittings				
C3	Assemble Instrument Panel with Fittings and Brackets				
C4	Assemble Avionics to Instrument Panel				
C5	Fabricate Seats				
C6	Fabricate Seat Brackets and Fittings				
C7	Assemble Seats to Cockpit				
C8	Fabricate Seat Belts Fittings and Shoulder Harness Fittings				
C9	Assemble Seat Belts and Shoulder Harness to Structure				
C10	Fabricate Electrical Wiring, Controls and Switches				
C11	Assemble Electrical Systems Controls and Switches to Next Level Structure				
	Add item:				
	Add item:				
	Add item:				
	Add item:				
Total # of Cockpit Interior Tasks	**Cockpit Interior Subtotal**	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	Cockpit Interior Total Points ►				
Total # of Aircraft Tasks	◄ **SUM #1**				

▶ TOTAL TASKS AND LINE ITEMS ↓ ↓ ↓ ↓

FABRICATION AND ASSEMBLY SUMMARY	A	B	C	D
	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
1. Total Points for Each Category				
2. Total Points for Complete Aircraft Construction (SUM # 2 should equal SUM # 1 above.)	**(SUM #2) ►**			
3. Percentage of Each Category as Part of Total Aircraft Construction				
4. Total Percentages for Complete Aircraft Construction – Add all percentages in row 3. (Total should equal 100% (± .5%).)				
5. Total Builder Points – Add together points in row 1, columns C and D only.				
6. Total Builder Percentage – Add together percentages in row 3, columns C and D only.				

Instructions for Completing the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009)

1. Total Points for Each Category (columns A, B, C and D). Each column's total points are tallied by adding the sum of the points awarded to the tasks in each section (for example, Fuselage, Wings, Empennage). Include points assigned to additional items in each section. Boxes with a N/A (not applicable) have zero points.

2. Total Points for Complete Aircraft Construction.

SUM #1. To find total points, add up the six "Total # of Tasks" blocks at the bottom left of each fabrication and assembly tasks section.

SUM #2. In the FABRICATION AND ASSEMBLY SUMMARY section, add the four blocks from each column's category total (columns A+B+C+D).

Compare SUM #1 to SUM #2. SUM #1 should be equal to SUM #2. (Verify the two sums are equal within a deviation of ±0.5). Total points will vary from aircraft to aircraft depending on number of N/As (not applicable), and additional items applied (123 listed task points + additional items - N/As).

3. Percentage of Each Category. To compute percentages, divide each of the point totals in each column (row 1) individually by the number derived in row 2. For example, if the total points of Mfr Kit/Part/Component category (column A) equals 60 and the number in row 2 equals 170, then divide 60 by 170 to equal 35.3 percent. Do this for each category column. Percentages may be rounded to the nearest tenth (for example, 22.86 percent is rounded up to 22.9 percent).

4. Total Percentages for Complete Aircraft Construction as Part of Total Aircraft Construction. Add the percentages of each of the four categories together (columns A+B+C+D). Total must be equal to 100 percent with a deviation limited to ± 0.5 percent. For example, a derived percentage between 99.5 percent and 100.5 percent is acceptable. If this computation falls outside the accepted deviation, then an error has occurred in row 1, 2, or 3.

5. Total Builder Points. Add the two point tallies from column C and column D derived in row 1. Total will vary from aircraft to aircraft depending on number of N/As applied.

6. Total Builder Percentage. Add the two percentage tallies from column C and column D derived in row 3. Total must exceed 50 percent to be eligible for amateur-built status and to meet the major portion requirement under 14 CFR § 21.191(g).

Explanations and Examples

►A point (each task equals 1 point) can be divided over multiple categories (Manufacturer, Commercial Assistance, Amateur-Builder Assembly, and Amateur-Builder Fabrication) into 1/10 fractions. A manufacturer may be a kit manufacturer, a component manufacturer, or a part(s) manufacturer. Commercial assistance (for hire or compensation) may include assistance provided by kit manufacturers, commercial assistance centers, individuals (for example, A&P mechanics or avionics technicians).

►For example, 0.5 point can be assigned to the manufacturer, 0.3 point as commercial assistance, and 0.2 point to the amateur builder as fabrication, for a total of 1 point.

►All points are added at the end of the form in the FABRICATION AND ASSEMBLY SUMMARY section under their respective categories. The point total is comprised of all the credits awarded for primary delineated tasks plus any credits given for additional items.

►Additional items may be assigned points the same as primary listed tasks if work or parts not reflected in the main entries need to be credited.

►The applicants' completion of tasks can be documented in a number of ways and may include the following:

- Comprehensive builder's logs, to include photographs of all the steps included in each of the listed tasks in the Amateur-Builder Aircraft Fabrication and Assembly Checklist (2009), materials and techniques used in construction, as well as dates, locations, and detailed descriptions,
- Photographs/video/DVD,
- Drawings and engineering specifications,
- Kit manufacturer data when necessary,
- Relevant documentation (for example, plans) and references (for example, handbooks) used,
- Documentation concerning any commercial assistance used,
- Documentation concerning any non-commercial assistance used,
- Part inventories and histories,
- Receipts and Catalogs, and
- Logbook entries.

In addition to using this checklist, the builder should document the entire fabrication and assembly process. To issue an airworthiness certificate, the FAA must make a major portion determination (the major portion of an aircraft was fabricated and assembled by an amateur builder(s)). Making this finding requires sufficient, credible, and adequate documentation.

APPENDIX 9. SAMPLE AERONAUTICAL CENTER FORM 8050-88, AFFIDAVIT OF OWNERSHIP FOR AMATEUR-BUILT AIRCRAFT

Paperwork Reduction Act Statement: The information collected on this form is necessary to ensure applicant eligibility. The information is used to determine that the applicant meets the necessary qualifications as owner of an amateur built aircraft. We estimate that it will take approximately 30 minutes to complete the form. The information collection is required to obtain a benefit. The information collected becomes part of the aircraft registration system. Please note that an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. **OMB 2120-0042.**

Comments covering the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at 800 Independence Avenue SW, Washington, DC 20591. ATTN: Information Collection Clearance Officer, ABA-20.

AFFIDAVIT OF OWNERSHIP FOR EXPERIMENTAL AIRCRAFT INCLUDING AMATEUR-BUILT AIRCRAFT AND OTHER NON-TYPE CERTIFICATED AIRCRAFT
(does not include light-sport)

U. S. Identification N130EA

Name of Amateur built builder OR
Name of Non TC'd manufacturer Early A. Builder

Model VAN'S RV-6 Serial Number 1001

Class (airplane, rotorcraft, glider, weight shift control, powered-parachute, etc.) Airplane

Type of Engine Installed (reciprocating, turbopropeller,2 or 4 cycle, etc.) reciprocating

Number of Engines Installed 1

Manufacturer, Model and Serial Number of each Engine Installed LY-CON, O-320 EXP., L023-48X

Built for Land or Sea Operation Land Number of Seats 2

MUST CHECK ONE

☐ More than 50% of the above-described aircraft was built from miscellaneous parts and I am the owner. (This option is for amateur-built aircraft.)

☑ More than 50% of the above-described aircraft was built from a kit (prefabricated parts) and I am the owner. The bill of sale from the kit manufacturer is attached. (This option is for amateur-built aircraft.)

☐ I certify that the above-described aircraft is a newly manufactured non-type certificated aircraft and is not currently registered in another country. (This option is for manufacturers only.)

☐ I certify that the above-described aircraft is a previously manufactured (used) non-type certificated aircraft and is not currently registered in another country.
(This option is for owners of previously manufactured aircraft only.)
☐ Evidence of ownership from the aircraft manufacturer through any intervening owners is attached (chain of ownership).
☐ Unable to obtain complete chain of ownership. Statement as to ownership history and whereabouts of aircraft is attached.

Name of Owner: Early A. Builder

Signature of Owner: Early A. Builder Title of Signer (If Appropriate):

Address 1240 Boi d'Arc Road

City: Savoy State: TX Zip: 75479

Telephone: 903-555-1212

Notary Public:

State of: County of:

Subscribed and sworn to before me this day of ,

My Commission Expires:

(Signature of Notary Public)

AC FORM 8050-88 (01/07)

APPENDIX 10. SAMPLE AERONAUTICAL CENTER FORM 8050-2, AIRCRAFT BILL OF SALE

FORM APPROVED
OMB NO. 2120-0042

UNITED STATES OF AMERICA
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

KIT ~~AIRCRAFT~~ BILL OF SALE

FOR AND IN CONSIDERATION OF $ THE UNDERSIGNED OWNER(S) OF THE FULL LEGAL AND BENEFICIAL TITLE OF THE AIRCRAFT DESCRIBED AS FOLLOWS:

UNITED STATES REGISTRATION NUMBER N 130EA

AIRCRAFT MANUFACTURER & MODEL VAN'S RV-6

AIRCRAFT SERIAL No. 1001

DOES THIS DAY OF 20 HEREBY SELL, GRANT, TRANSFER AND DELIVER ALL RIGHTS, TITLE, AND INTERESTS IN AND TO SUCH AIRCRAFT UNTO:

Do Not Write In This Block
FOR FAA USE ONLY

PURCHASER

NAME AND ADDRESS
(IF INDIVIDUAL(S), GIVE LAST NAME, FIRST NAME, AND MIDDLE INITIAL.)

BUILDER, Early A.
1240 Bois d' Arc Road
Savoy, TX 75479

DEALER CERTIFICATE NUMBER

AND TO EXECUTORS, ADMINISTRATORS, AND ASSIGNS TO HAVE AND TO HOLD SINGULARLY THE SAID AIRCRAFT FOREVER, AND WARRANTS THE TITLE THEREOF.

IN TESTIMONY WHEREOF HAVE SET HAND AND SEAL THIS DAY OF 20

SELLER

NAME (S) OF SELLER (TYPED OR PRINTED)	SIGNATURE (S) (IN INK) (IF EXECUTED FOR CO-OWNERSHIP, ALL MUST SIGN.)	TITLE (TYPED OR PRINTED)
VAN'S		

ACKNOWLEDGMENT (NOT REQUIRED FOR PURPOSES OF FAA RECORDING: HOWEVER, MAY BE REQUIRED BY LOCAL LAW FOR VALIDITY OF THE INSTRUMENT.)

ORIGINAL: TO FAA

AC Form 8050-2 (9/92) (NSN 0052-00-629-0003) Supersedes Previous Edition

APPENDIX 11. SAMPLE LETTER FOR REQUESTING AN AIRCRAFT REGISTRATION NUMBER UNDER 14 CFR § 47.15

[Insert Date]

Federal Aviation Administration
Aircraft Registration Branch, AFS-750
P.O. Box 25504
Oklahoma City, OK 73125-0504

Sir/Madam:

This is a request for a U.S. identification number assignment for my amateur-built aircraft.

Aircraft Description:
Make/Builder: Early A. Builder
Type (airplane, rotorcraft, glider, or balloon): Airplane
Model: VAN'S RV-6
Serial Number: 1001

This aircraft has not previously been registered anywhere (reference 14 CFR § 47.15(a)(1)).

X	Normal Request ($5); fee attached (check or money order)
X	Special Registration Number Request ($10); fee attached (check or money order)

Choices
1st 130EA
2nd 130JR
3rd 130FE
4th 130JJ
5th 130TX

Sincerely,

Early A. Builder

Early A. Builder
Owner

APPENDIX 12. SAMPLE FAA FORM 8130-12, ELIGIBILITY STATEMENT, AMATEUR-BUILT AIRCRAFT

Form Approved
OMB NO. 2120-0018

US Department of Transportation Federal Aviation Administration

ELIGIBILITY STATEMENT AMATEUR-BUILT AIRCRAFT

Instructions: Print or type all information except signature. Submit original to an authorized FAA representative. Applicant completes Section I thru III. Notary Public Completes Section IV.

I. REGISTERED OWNER INFORMATION

Name(s) Early A. Builder

Address(es) 1240 Bois d'Arc Road (No. & Street) Savoy (City) TX (State) 75479 (Zip)

Telephone No.(s) (999)555-1212 (Residence) (214) 555-1212 (Business)

II. AIRCRAFT INFORMATION

Model VAN'S RV 6

Assigned Serial No. 1001

Registration No. N130EA

Aircraft Fabricated: Plan ☐ Kit X

Engine(s) Make LY-CON O-360 EXP

Engine(s) Serial No. L 023-48X

Prop./Rotor(s) Make Sensenich

Prop./Rotor(s) Serial No.(s) C2YK-1BF/F7661B4

III. MAJOR PORTION ELIGIBILITY STATEMENT OF APPLICANT

I certify that the major portion of this aircraft (identified in Section II above) was fabricated and assembled by

Early A. Builder, Son O. Builder
Names of all builders (Please Print)

solely for my (our) education or recreation, in accordance with 14 CFR part 21, Certification Procedures for Products and Parts, § 21.191(g), Operating amateur-built aircraft. I have records to support this statement and will make them available to the FAA upon request.

During the fabrication and assembly of this project, I/ we used the following commercial assistance (mark N/A if no commercial assistance was used):

Name of company or individual(s)	City & State	Phone
N/A		
N/A		

-NOTICE-

Whoever in any matter within the jurisdiction of the executive, legislative, or judicial branch of the Government of the United States, knowingly and willfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or who makes any materially false, fictitious or fraudulent statement or representation, or makes or uses any false writing or document knowing the same to contain any materially false, fictitious or fraudulent statement or entry, shall be fined under this title, imprisoned not more than 5 years or, if the offense involves international or domestic terrorism, imprisoned not more than 8 years, or both.
(U.S. Code, Title 18, Sec. 1001)

APPLICANT'S DECLARATION

I hereby certify that all statements and answers provided by me in this statement form are complete and true to the best of my knowledge, and I agree that they are to be considered part of the basis for issuance of any FAA certificate to me. I have also read and understand the Privacy Act statement that accompanies this form.

Signature of Applicant *(In Ink)* Early A. Builder — Date 8/1/2009

IV. NOTARIZATION STATEMENT

FAA Form 8130-12 (08-2009) Supersedes Previous Edition NSN: 0052-00-889-9002

APPENDIX 13. SAMPLE PROGRAM LETTER TO ACCOMPANY APPLICATION FOR AIRWORTHINESS CERTIFICATE

TO: [Insert local FAA office or DAR] Date: [Insert date]

In accordance with 14 CFR § 21.193, I request a Special Airworthiness Certificate for my aircraft for the purpose of operating amateur-built aircraft. The aircraft description is as follows:

Builder:	Early A. Builder	*Registration No.*:	N130EA
Model:	VAN'S RV-6	*Serial No.*:	1001
No. of Engines:	1	*No. of Seats*:	2

Design Criteria: my own design ____ built from plans ____ built from a kit X

The aircraft is complete and the following items have been accomplished:

Yes	**No**	I enclose FAA Form 8130-6 with Sections I, II, and III complete.
Yes	**No**	I enclose FAA Form 8130-12 with Sections I, II, and III complete and notarized in Section IV.
Yes	**No**	I possess Aeronautical Center Form 8050-3.
Yes	**No**	I enclose a three-view drawing or photographs of the aircraft.
Yes	**No**	I have weighed the aircraft to determine that the most forward and aft center of gravity positions are within established limits. The weight and balance report is available at the aircraft, and a copy is submitted with this application.
Yes	**No**	I have maintained a construction log for the project, including photographs showing methods of construction and workmanship during the construction. Log entries describe all inspections conducted during construction.
Yes	**No**	The marking requirements of part 45 have been complied with, including permanent attachment of a fireproof identification (data) plate, permanent application of appropriate registration marks, and the word "experimental" displayed near each entrance to the cabin or cockpit.
		The following placard is displayed in the cockpit in full view of all occupants (not required for single-place aircraft).
Yes	**No**	**"PASSENGER WARNING—THIS AIRCRAFT IS AMATEUR-BUILT AND DOES NOT COMPLY WITH FEDERAL SAFETY REGULATIONS FOR STANDARD AIRCRAFT."**

APPENDIX 13. SAMPLE PROGRAM LETTER TO ACCOMPANY APPLICATION FOR AIRWORTHINESS CERTIFICATE (CONTINUED)

The aircraft will be available for inspection at this location, and directions are as follows:

Grayson County Airport

Hangar No. 3

4701 Airport Dr.

Sherman, TX 75020

I request airworthiness certification and operation limitations be issued permitting me to operate the aircraft within the following geographical area for flight testing. Initial flights will determine engine reliability and flight control characteristics. A flight test plan has been developed using the guidance in AC 90-89 and is available for review. After Phase I flight test completion, I plan to operate the aircraft under VFR conditions only.

25-statute mile radius of Grayson County Airport

Latitude, 33-43 N; Longitude, 096-40W

Dallas-Ft. Worth Sectional (L13)

My residential telephone number is (903) 555-1212.

My daytime business number is (214) 555-1212.

Early A. Builder

Early A. Builder

Owner/Builder

APPENDIX 14. SAMPLE FAA FORM 8610-2, AIRMAN CERTIFICATE AND/OR RATING APPLICATION

TYPE OR PRINT ALL ENTRIES IN INK

Form Approved OMB No. 2120-0022

U.S. Department of Transportation
Federal Aviation Administration

AIRMAN CERTIFICATE AND/OR RATING APPLICATION

☐ MECHANIC ☐ AIRFRAME ☐ POWERPLANT
☒ REPAIRMAN — EXPERIMENTAL AIRCRAFT BUILDER (Specify Rating)
☐ PARACHUTE RIGGER ☐ SENIOR ☐ MASTER ☐ SEAT ☐ CHEST ☐ BACK ☐ LAP

APPLICATION FOR: ☒ ORIGINAL ISSUANCE ☐ ADDED RATING

I. APPLICANT INFORMATION

A. NAME (First, Middle, Last): Early A. INITIAL ONLY Builder

B. SOCIAL SECURITY NO.: 123-45-6789
C. DOB (Mo., Day, Yr.): 12-12-1943
D. HEIGHT: 76 IN.
E. WEIGHT: 235
F. HAIR: brown
G. EYES: brown
H. SEX: M
I. NATIONALITY (Citizenship): USA
J. PLACE OF BIRTH: Bug Tussle, TX

K. PERMANENT MAILING ADDRESS
NUMBER AND STREET, P.O. BOX, ETC.: 1240 Bois d' Arc Road
CITY: Savoy
STATE: TX
ZIP CODE: 75479

L. HAVE YOU EVER HAD AN AIRMAN CERTIFICATE SUSPENDED OR REVOKED?
☒ NO ☐ YES (If "Yes," explain on an attached sheet keying to appropriate item number)

M. DO YOU NOW OR HAVE YOU EVER HELD AN FAA AIRMAN CERTIFICATE? ☐ NO ☒ YES
SPECIFY TYPE: Private Pilot

N. HAVE YOU EVER BEEN CONVICTED FOR VIOLATION OF ANY FEDERAL OR STATE STATUTES PERTAINING TO NARCOTIC DRUGS, MARIJUANA, AND DEPRESSANT OR STIMULANT DRUGS OR SUBSTANCES? ☒ NO ☐ YES → DATE OF FINAL CONVICTION

II. CERTIFICATE OR RATING APPLIED FOR ON BASIS OF —

☐ A. CIVIL EXPERIENCE ☐ B. MILITARY EXPERIENCE ☐ C. LETTER OF RECOMMENDATION FOR REPAIRMAN (Attach copy)

☐ D. GRADUATE OF APPROVED COURSE — (1) NAME AND LOCATION OF SCHOOL; (2) SCHOOL NO.; (3) CURRICULUM FROM WHICH GRADUATED; (4) DATE

☐ E. STUDENT HAS MADE SATISFACTORY PROGRESS AND IS RECOMMENDED TO TAKE THE ORAL/PRACTICAL TEST (FAR 65.80) — (1) SCHOOL NAME; NO.; (2) SCHOOL OFFICIAL'S SIGNATURE

☐ F. SPECIAL AUTHORIZATION TO TAKE MECHANIC'S ORAL/PRACTICAL TEST (FAR 65.80) — (1) DATE AUTH.; (2) DATE AUTH. EXPIRES; (3) FAA INSPECTOR SIGNATURE; (4) FAA DIST. OFC.

III. RECORD OF EXPERIENCE

A. MILITARY COMPETENCE OBTAINED IN → (1) SERVICE; (2) RANK OR PAY LEVEL; (3) MILITARY SPECIALTY CODE

B. APPLICANTS OTHER THAN FAA CERTIFICATED SCHOOL GRADUATES, LIST EXPERIENCE RELATING TO CERTIFICATE AND RATING APPLIED FOR. (Continue on separate sheet, if more space is needed)

DATES—MONTH AND YEAR FROM	TO	EMPLOYER AND LOCATION	TYPE WORK PERFORMED
			MAKE - Builder
			MODEL - Van's RV-6
			SERIAL No. - 1001
			CERTIFICATION DATE
			OF AIRCRAFT

C. PARACHUTE RIGGER APPLICANTS: INDICATE BY TYPE HOW MANY PARACHUTES PACKED → SEAT | CHEST | BACK | LAP
FOR MASTER RATING ONLY
PACKED AS A — ☐ SENIOR RIGGER ☐ MILITARY RIGGER

IV. APPLICANT'S CERTIFICATION

I CERTIFY THAT THE STATEMENTS BY ME ON THIS APPLICATION ARE TRUE
A. SIGNATURE: Early A. Builder
B. DATE: XXXX-XXXX

V.

I FIND THIS APPLICANT MEETS THE EXPERIENCE REQUIREMENTS OF FAR 65 AND IS ELIGIBLE TO TAKE THE REQUIRED TESTS.
DATE | INSPECTOR'S SIGNATURE | FAA DISTRICT OFFICE

FOR FAA USE ONLY

Emp.	reg.	D.O.	seal	con	iss	Act	lev	TR	s.h.	Srch	#rte	RATING (1)	RATING (2)	RATING (3)	RATING (4)

LIMITATIONS

FAA Form 8610-2 (2-85) SUPERSEDES PREVIOUS EDITION

☆U.S.G.P.O.: 1993-769-012/80055