CHANGE **U.S. DEPARTMENT OF TRANSPORTATION**

ORDER 8130.2F
CHG 4

9/30/2009

National Policy

SUBJ: Airworthiness Certification of Aircraft and Related Products

1. Purpose. This change 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.

2. Who This Change Affects. This order is distributed to the Washington headquarters branch levels of the Aircraft Certification Service, Flight Standards Service, and the Regulatory Support Division; to the Aviation System Standards office; to the branch level in the Aircraft Certification Service directorates and regional Flight Standards Service divisions; to all aircraft certification offices; to all manufacturing inspection district offices and manufacturing inspection satellite offices; to flight standards district offices; to the Aircraft Certification Branch and Flight Standards Branch at the Federal Aviation Administration (FAA) Academy; to applicable representatives of the Administrator; and to all international field offices.

3. Disposition of Transmittal Paragraph. Retain this transmittal sheet until the directive is canceled by a new directive.

PAGE CHANGE CONTROL CHART

Remove Pages	Dated	Insert Pages	Dated
vii	7/10/2006	vii	7/10/2006
viii	4/18/2007	viii	9/30/2009
ix	7/10/2006	ix	7/10/2006
x	7/10/2006	x	9/30/2009
149 thru 165	4/18/2007	149 thru 165-4	9/30/2009
166	11/5/2004	166	11/5/2004
221	11/5/2004	221	11/5/2004
222	11/5/2004	222	9/30/2009
227	11/5/2004	227	11/5/2004
228 thru 229	11/5/2004	228 thru 229	9/30/2009
230	11/5/2004	230	11/5/2004
244-3	7/10/2006	244-3	7/10/2006

Remove Pages	Dated	Insert Pages	Dated
244-4	7/10/2006	244-4	9/30/2009
257 thru 258	11/5/2004	257 thru 258	9/30/2009
311	7/10/2006	311	7/10/2006
312 thru 313	7/10/2006	312 thru 313	9/30/2009
314	7/10/2006	314	7/10/2006

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

Paragraph *Page*

Paragraph *Page*

SECTION 9. EXPERIMENTAL AMATEUR-BUILT AIRWORTHINESS CERTIFICATIONS

146. GENERAL. Under the provisions of § 21.191(g), an amateur-built aircraft is defined as an aircraft of 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.

a. Amateur-built aircraft may be constructed from—

(1) An amateur builder's original design, or

(2) Purchased plans.

b. Some kits have been evaluated by the FAA; some have not. These evaluations are not required by the regulations, nor is a manufacturer required to have a kit evaluated by the FAA before selling it. Kit evaluations determine whether aircraft fabricated and assembled by an amateur builder from an evaluated kit may meet the major portion requirement of § 21.191(g) and be eligible for an experimental amateur-built airworthiness certificate.

c. Amateur builders who contact their local FAA managing office should be advised of the availability of forms and AC 20-27, Certification and Operation of Amateur-Built Aircraft, to assist them in planning their project. Refer to paragraph 151b for a complete list of available guidance.

147. ELIGIBILITY.

a. Basic Guidelines. Amateur-built aircraft are eligible for a special airworthiness certificate in the experimental category, for the purpose of operating amateur-built aircraft when—

(1) The FAA finds that the aircraft complies with acceptable aeronautical standards and practices,

(2) The aircraft is in condition for safe operation, and

(3) The applicant (individual or group) presents satisfactory evidence that the major portion of the aircraft was fabricated and assembled solely for their own educational or recreational purposes.

> **NOTE: Fabrication is defined as 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.**

b. Statement of Eligibility. The applicant must submit a notarized Form 8130-12, Eligibility Statement, Amateur-Built Aircraft (refer to figure 4-14), certifying the major portion was fabricated and assembled for educational or recreational purposes.

(1) The form specifies that an amateur builder identify if commercial assistance was used in the construction of the aircraft and identify the source of the assistance.

(2) Evidence and records must be available to support these statements and provided to the FAA upon request.

(3) Records that are typically requested are listed in paragraph 151e.

c. Additional Information and Demonstrating Level of Knowledge. To determine level of knowledge, the FAA may ask the applicant to provide information during the airworthiness inspection. For example, the FAA could ask the applicant to describe a particular construction task or technique used to fabricate the aircraft or provide information as to the type of materials. These discussions enable the FAA to evaluate the involvement of the applicant in the construction of the aircraft.

d. Prototype Aircraft Produced by an Amateur-Built Aircraft Kit Manufacturer. In some cases, prototype aircraft originally certificated under market survey/crew training were used to prove their design for amateur-built purposes. However, such aircraft are considered to be produced as a furtherance of a business, in that their design is intended to be sold as plans and/or kits, and therefore are not eligible for amateur-built aircraft status.

(1) These prototype aircraft are not produced by persons "solely for their own education or recreation," and therefore are not eligible for an experimental airworthiness certificate under § 21.191(g).

(2) Following termination of their use in the business development activity, such prototype aircraft may be eligible for an experimental certificate for another purpose(s).

(3) In those instances where an aircraft is constructed at a manufacturing facility by employees or principals of that company, the applicant must demonstrate to the FAA that the aircraft was not produced to be used in the furtherance of the business activities of that company.

(4) Kit aircraft manufactured and assembled by a business, as either a prototype or for sale to other persons, are not considered amateur-built and do not meet the education or recreation requirements of § 21.191(g). Applications for such aircraft will not be accepted.

e. Records. If records are not available to support the eligibility statement, Form 8130-12, the FAA will not be able to find compliance to the education, recreation, and major portion requirements of § 21.191(g).

148. DETERMINATION OF MAJOR PORTION. The determination of major portion is 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. 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." An aircraft is not eligible for an experimental amateur-built certificate under § 21.191(g) if the major portion of the aircraft fabrication and assembly tasks are not completed by an amateur builder(s).

a. FAA Use of the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009). The Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) is to be used by the FAA as an aid in determining compliance with the major portion requirement of § 21.191(g). A specific checklists has been developed for fixed-wing aircraft. Checklists for other types of aircraft will be developed. Instructions for completion are included on the form. Refer to FAA Order 8130.35, Amateur-Built Aircraft National Kit Evaluation Team (NKET), for a copy and instructions of the checklist. The Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) must be used when—

(1) Performing FAA kit evaluations by the NKET to determine if an aircraft fabricated and assembled from a kit may meet the major portion requirement of § 21.191(g).

(2) Commercial assistance was used by the amateur builder(s) during construction.

(3) The amateur builder made modifications to an aircraft kit included on the FAA List of Amateur-Built Aircraft Kits that potentially affects the major portion determination.

(4) The aircraft was built from prefabricated major components that are readily available from aircraft parts suppliers, other than those components listed in paragraph 149a(2).

(5) The aircraft was built using any salvaged components or used parts from aircraft that have been type certificated. For additional details and limitations affecting this practice, refer to paragraph 149b through d below.

(6) The aircraft was built from a kit that has not been evaluated or found eligible by the FAA.

(7) Providing guidance to a kit manufacturer to determine if a proposed amateur-built kit may meet the major portion requirement of § 21.191(g).

(8) There are questions that arise as to the determination of major portion.

NOTE. Copies of the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) for each kit on the FAA List of Amateur-Built Aircraft Kits are available on the FAA Web site, under the "General Aviation & Recreational Aircraft-Ultralights & Amateur-Built Aircraft" section, under the "Aircraft" topic tab on the FAA Web site at http://www.faa.gov.

b. Providing Commercial and/or Educational Assistance. Amateur builders may contract for commercial assistance, but should notify the FAA if they intend to use commercial assistance. Amateur builders may also receive commercial educational assistance in the fabrication or assembly of specific parts, and the completion of tasks or processes involved in the construction of an aircraft. In some cases, this commercial assistance may be provided by kit manufacturers. The FAA may credit commercial assistance provided for educational purposes toward the major portion determination. However, this educational assistance cannot exceed a demonstration on how to perform the task.

(1) The amateur builder needs to submit a notarized FAA Form 8130-12, Eligibility Statement, Amateur-Built Aircraft, certifying the major portion was fabricated and assembled for educational or recreational purposes. The form specifies that an amateur builder identify if commercial assistance was used in the construction of the aircraft, and identify the source of the assistance. In addition, the amount of commercial assistance needs to be annotated on the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) for the specific make and model of aircraft. Evidence and records should be available to support these statements and provided to the FAA upon request.

(2) 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, must not prevent the amateur builder(s) from meeting the major portion requirement. Fabrication knowledge is necessary for the FAA to issue the amateur builder a repairman certificate as the primary builder of the aircraft, to which the privileges of the certificate are applicable, as provided under 14 CFR § 65.104.

(3) The FAA may request to observe fabrication and assembly activities at any commercial assistance facility to determine whether the project can meet the major portion requirement of § 21.191(g).

149. DESIGN AND CONSTRUCTION. The FAA should be reasonable in its requests for design data from amateur builders, keeping in mind that in most instances only one aircraft is involved. Accordingly, the amateur builder(s) are not required to have the detailed design data, quality systems, and procedures that holders of type and production certificates are required to have for the serial production of duplicate aircraft. Often, the amateur builder will only have the information provided with the kit. However, the amateur builder should be strongly encouraged to maintain the documentation listed in paragraph 151d of this order to substantiate the fabrication and assembly process and show compliance with § 21.191(g).

a. Use of Commercially Produced Components and Materials. To meet the intent of § 21.191(g) and to be eligible for an experimental airworthiness certificate, satisfactory evidence must be presented to show that the aircraft was not assembled from completely prefabricated parts or kits.

(1) The FAA recognizes that amateur builders cannot be expected to have fabricated every part that makes up the aircraft and that some parts will be acquired from commercial sources.

(2) Items such as engines, engine accessories, propellers, rotor blades, rotor hubs, tires, wheel and brake assemblies, instruments, and standard aircraft hardware, including pulleys, bell cranks, rod ends, bearings, bolts, rivets, hot air balloon burners, and fuel tanks, are acceptable and may be procured on the open market. The use of these items is not counted against the amateur builder or kit manufacturer when the FAA determines whether the amateur-built aircraft has met the major portion requirement.

b. 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) When a project involves a major assembly, such as wings, fuselage, or tail assembly, all situations to the validity of an application for experimental amateur-built status with regard to the use of type-certified assemblies and subassemblies, contact AIR-200 for determination of eligibility to §21.191(g). AIR-200 will coordinate with AFS-300 personnel to resolve such issues.

(2) No credit will be given to the amateur builder(s) for any work on these salvaged assemblies when determining whether the amateur-built aircraft has met the major portion requirement. This would include any "rebuilding" or "restoring" activities to return these components to an airworthy condition.

(3) All fabrication, installation, and assembly tasks accomplished with used or salvaged assemblies will be credited to the "Mfr Kit/Part/Component" column on the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009). However, assembly credit may given in those cases where used or salvaged parts and assemblies are mated to portions of the aircraft fabricated and assembled by the amateur builder.

(4) Amateur builders should be made aware that excessive use of prefabricated or salvaged assemblies when building their aircraft may render the aircraft ineligible for amateur-built status as defined in § 21.191(g). The use of a significantly complete airframe or combination of major subassemblies such as wings and fuselage, tail plane assembly from a type-certificated aircraft, or a compilation of aircraft, would most likely render the aircraft ineligible for amateur-built status as defined in § 21.191(g).

(5) As soon as it is known that a project involves the use of a complete airframe or combination of major subassemblies such as wings, fuselage, or tail assembly, contact AIR-200 for additional guidance. AIR-200 will coordinate with AFS-300 personnel to resolve such issues.

c. Type-Certificated Aircraft. Alterations, rebuilding, and repairs to a type-certificated part, component, or aircraft will be categorized as falling under part 43. The amateur builder will receive no credit for these actions toward fabrication or assembly.

> **NOTE: The practice of performing alterations, repairs, and rebuilding on 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 part 43. Applications for airworthiness inspections on such aircraft will not be accepted. (Refer to paragraphs 149b through d of this order.)**

(1) This policy has been in effect since 1952 under section 1.74-3 of the 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) Use the normal STC process for modifications to these aircraft. They need to be kept under their existing maintenance programs to ensure continued airworthiness.

d. Use of Military Surplus, Spare Parts, Components, and Assemblies. The amateur builder will receive no credit toward fabrication or assembly for amateur-built aircraft projects where military surplus, spare parts, components, and assemblies are used. Their use may compromise the builder's ability to meet § 21.191(g) major portion requirements. As soon as it is known that a project involves the use of a complete airframe or combination of major subassemblies from a military aircraft such as wings, fuselage, or tail assembly, contact AIR-200 for additional guidance. AIR-200 will coordinate with AFS-300 personnel to resolve such issues.

e. Use of Amateur-Built Kits.

(1) An aircraft fabricated and assembled from a kit may be eligible for amateur-built certification, provided the major portion of the aircraft has been fabricated and assembled by the amateur builder(s) solely for their own education or recreation. The applicant must have satisfactory evidence to support the major portion (greater than 50 percent) requirement and the education/recreation statement on Form 8130-12. This evidence is typically in the form of a builder's log or equivalent, and includes photographs that document the multitude of steps included in each of the listed tasks in the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009). In addition, such documentation needs to include materials and techniques used, construction dates, locations, and detailed descriptions (refer to paragraph 151d for a complete list). If the builder's log or equivalent does not provide sufficient detail, the FAA may not be able to find compliance with § 21.191(g).

(2) All fabrication or assembly tasks contracted to another party (that is, for compensation or hire) or provided by a commercial assistance center, when added to the manufacturer's total credits, must be less than the major portion of the construction project. An aircraft assembled from a kit composed entirely of completely finished prefabricated components and parts is not eligible for an experimental amateur-built airworthiness certificate.

(3) The major portion of a kit should be composed of raw stock, such as lengths of wood, tubing, and extrusions, which may have been cut to an approximate length. A certain quantity of prefabricated parts, such as heat-treated ribs, bulkheads, or complex parts made from sheet metal, fiberglass, composites, or polystyrene would also be acceptable, however—

(a) The kit must still allow an amateur builder to meet the major portion requirement, and the applicant must show to the satisfaction of the FAA that the completion of the aircraft was not simply an assembly operation.

(b) Caution is recommended for kits that provide large components, such as complete fuselages and wing structures requiring minimal supplemental fabrication and assembly.

(4) Some kits may include aircraft-specific jigs, assembly tools and fixtures, templates, raw stock, or other means to simplify the fabrication and assembly process. If an amateur builder uses such items, the FAA will determine whether the amateur builder will still fabricate and assemble the major portion of the aircraft and advise the amateur builder accordingly.

(5) Amateur builders should obtain a copy of the completed FAA kit evaluation from their respective kit manufacturer if available. A list of FAA-evaluated kits is available on the FAA's Web site at http://www.faa.gov. The completed evaluation will enable the amateur builder to determine how much fabrication and assembly remains to be completed by the amateur builder, and if any percentage of that work could be performed using commercial assistance.

150. FAA EVALUATION OF AMATEUR-BUILT AIRCRAFT KITS.

a. General. The FAA performs kit evaluations to determine if an aircraft constructed from a prefabricated kit, following the manufacturer's instructions, may meet the major portion requirement of § 21.191(g). The FAA does not certify amateur-built aircraft kits or approve kit manufacturers. The outcome of these evaluations must not be construed as meaning the kit is FAA "certified," "certificated," or "approved," and kit manufacturers shall not represent their kits as such.

(1) The placing of a kit on the FAA List of Amateur-Built Aircraft Kits is not a prerequisite for issuance of an amateur-built airworthiness certification.

(2) If an aircraft is fabricated and assembled from a kit that does not appear on the List of Amateur-Built Aircraft Kits, the FAA must make a major portion determination at the time of airworthiness certification.

b. Determination of Credit. The FAA has adopted a task-based approach when evaluating amateur-built kits. Other variables, like time needed to complete a task, are not to be used. For simple repetitive fabrication tasks (that is, riveting, measuring, cutting, trimming, sanding, drilling, gluing, and layup) there should be enough work for the amateur builder to learn proficiency in each of those tasks. However, this does not mean that all the credit for the tasks may then be given on the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) to the amateur builder. Rather, an incremental percentage, resulting in partial credit, may be accounted for on the checklist.

c. NKET. Kit evaluations are performed at the manufacturer's facility or its distributor, by the FAA's NKET. The team is composed of FAA personnel with experience in the evaluation and certification of amateur-built aircraft. For additional information on the NKET, refer to Order 8130.35.

d. Manufacturers Requesting a Kit Evaluation. Kit manufacturers desiring an FAA kit evaluation are directed to AC 20-27 for further information.

e. Use of Prior Policy. If an aircraft kit was evaluated and placed on the FAA List of Amateur-Built Aircraft Kits or if a non-evaluated aircraft kit was purchased from the manufacturer before September 30, 2009, the prior policy may be used. However, other factors, such as a major change to the kit by the manufacturer or a builder's use of commercial assistance, will preclude the use of prior policy. Figure 4-31 depicts the use of the prior policy.

151. ADVISING APPLICANTS. Many individuals who want to build their own aircraft have little or no experience with respect to aeronautical practices, workmanship, or design. An excellent source for advice in such matters is the Experiment Aircraft Association (EAA), located in Oshkosh, Wisconsin. Information on EAA programs and benefits may be obtained via the EAA Web site at http://www.eaa.org.

a. Contacting the FAA. Amateur builders who contact the FAA should be provided the information and guidance needed to ensure a thorough understanding of amateur-built regulations and requirements. The FAA should also explain the various points in the process when FAA involvement may be necessary before construction proceeds.

b. Providing FAA Forms for Registration and Certification. FAA MIDOs and FSDOs may furnish amateur builders with the following forms and ACs, or indicate their availability on the Internet:

(1) Form 8050-1, Aircraft Registration Application;

(2) Form 8130-6, Application for Airworthiness Certificate;

(3) Form 8130-12, Eligibility Statement, Amateur-Built Aircraft;

(4) Aeronautical Center Form 8050-88, Affidavit of Ownership for Amateur-Built Aircraft; and

(5) AC 20-27, Certification and Operation of Amateur-Built Aircraft.

c. In-Process Inspections. The FAA usually will not perform in-process inspections for determining airworthiness during the fabrication and assembly process. However, the FAA has to make a determination that the aircraft is in a condition for safe operation. Therefore, the amateur builder's documentation needs to indicate all 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.

d. FAA Pre-Cover Inspections. 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 they are certificating.

e. Proper Documentation. Amateur builder(s) need to be able to provide adequate and sufficient documentation to detail the construction and inspections of their aircraft.

(1) These records need to clearly indicate what was fabricated, assembled, or inspected, by whom, and the date the activity was performed.

(2) Documentation should clearly show who performed the task(s), describe when and where the tasks were performed, depict the methods of acceptable aeronautical construction and practices, and document the use of commercial and noncommercial assistance.

(3) The FAA must be provided with sufficient information to make a major portion determination. This documentation may include the following:

(a) The Amateur-Built Aircraft Fabrication and Assembly Checklist (2009).

(b) 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.

(c) Photographs/video/DVD.

(d) Drawings and engineering specifications.

(e) Kit manufacturer's data, when necessary.

(f) Relevant documentation (for example, plans) and references (for example, handbooks) used.

(g) Documentation concerning any commercial assistance used, including receipts.

(h) Documentation concerning any non-commercial assistance used.

(i) Part inventories and histories.

(j) Receipts and catalogs.

(k) Logbook entries.

f. Showing Compliance to § 91.319(b). The applicant should be advised that after the experimental amateur-built airworthiness certificate has been issued, they must show compliance to § 91.319(b). This is done by developing a flight test program that addresses the requirements, goals, and objectives of each test flight. The flight test program should be developed in accordance with AC 90-89, Amateur-Built Aircraft and Ultralight Flight Testing Handbook, or its equivalent in scope and detail. Flight test programs serve two purposes:

(1) They ensure the aircraft has been adequately tested and determined to be safe to fly within the aircraft's flight envelope.

(2) The flight test data is used to develop an accurate and complete aircraft flight manual and to establish emergency procedures.

NOTE: The EAA Flight Advisor program has been established to assist applicants in developing flight test programs.

152. CERTIFICATION PROCEDURES. The procedures in these paragraphs provide guidance concerning amateur-built airworthiness certification and the issuance of Form 8130-7, Special Airworthiness Certificate. FAA inspection of an amateur-built aircraft will be limited to a general airworthiness inspection when the aircraft is submitted for airworthiness certification. During this inspection, the FAA may not request extensive disassembly of the aircraft if the amateur builder can provide documented evidence of fabrication, assembly, and in-process inspections. The only time disassembly should be requested is when there is a lack of adequate documentation as described above, or if there is a suspected safety issue that would endanger the public.

a. Documentation in Support of Eligibility. It is necessary for the applicant to show and the FAA to find that the aircraft complies with the requirements of § 21.191(g). Common documentation in support of eligibility is typically in the form of a builder's log and substantiating photographs (refer to paragraph 151d for a complete list).

b. Major Portion Determination. The FAA must always make a major portion determination when an amateur-built aircraft has been presented for certification.

c. Deviating from Kits and/or Using Commercial Assistance. When the FAA identifies an aircraft as meeting the major portion requirement, at the time of certification, the FAA will review the applicant's documentation. Deviations from the FAA-identified kit configuration or changes that would result in an increase in the amount of commercial assistance will require the FAA to determine (before fabrication and assembly, and using Amateur-Built Aircraft Fabrication and Assembly Checklist (2009)) that the kit still meets the major portion requirement.

d. FAA Responsibilities at the Time of Certification. At the time of airworthiness certification, the FAA must—

(1) Ensure the aircraft is complete and all documentation is sufficient, credible, and adequate. If the applicant cannot, or will not, provide a statement of eligibility (Form 8130-12), or the documentation is inadequate to make a major portion determination, the applicant should be advised that the aircraft cannot be certificated as an amateur-built aircraft and a denial letter will be issued.

(2) Examine records that the aircraft has been weighed in accordance with established weight and balance procedures to determine the aircraft's empty, gross, and most forward and aft CG location, including the weight and balance for the initial flight tests in order to help reduce stall, spin, and other control-related accidents.

(a) If the aircraft is self-designed, these limits would be determined by the amateur builder's calculations.

(b) If the aircraft is constructed from a kit or built from purchased plans, relevant existing documentation is used.

(c) If the amateur builder has made changes to a manufacturer's kit that affect the CG, the predetermined data must be recalculated based on the change(s).

(d) The completed weight and balance report, including load limits for flightcrew, oil, fuel, and baggage, should be available in the aircraft, along with the other applicable placards, listings, and markings required by § 91.9.

e. Certification Documentation. The FAA needs to obtain from the applicant the following FAA forms and documentation, and ensure they are properly executed:

(1) AC Form 8050-3, Certificate of Aircraft Registration (a copy or online verification of registration).

(2) FAA Form 8130-6, Application for Airworthiness Certificate.

(3) A notarized Form 8130-12 certifying that the major portion of the aircraft was fabricated and assembled by the applicant(s) for their own education or recreation purposes and that evidence exists to support this statement (refer to paragraph 151d).

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

(5) As described in paragraph 151d(1), sufficient, credible, and adequate documentation to show and the FAA to find compliance with the major portion requirement of § 21.191(g).

(6) As described in paragraph 151c and d, documentation indicating all in-process and precover inspections.

(7) A program letter identifying the aircraft, the purpose of the certificate, the area over which the operations are to be conducted, and the duration of the program. The program letter is based on the requirements of § 21.193(d).

(8) In addition, the applicant may be asked to submit additional information during the airworthiness inspection to assist the FAA in determining if the applicant is eligible for a repairman certificate under § 65.104.

f. FAA Records Review. Completion of Form 8130-12 must not be used as the sole evidence of the applicant's compliance with the education, recreation, and major portion requirements of § 21.191(g). All relevant documentation must be reviewed. The FAA must—

(1) Review the documentation provided by the applicant to determine that the registration requirements of part 47 have been met, and ensure the aircraft is marked in accordance with part 45.

(2) Check with AFS-750, Aircraft Registration Branch, to determine if a denial letter exists for the particular aircraft. This may assist the FAA in determining aircraft eligibility.

(3) Review the aircraft records to determine whether any required maintenance or inspections have been accomplished.

(4) Ensure there is a signed and dated statement from the owner in the aircraft records, that the aircraft has had an inspection performed in accordance with appendix D to part 43, or other approved programs, and was found to be in a condition for safe operation. The inspection will help reduce errors made during construction of the aircraft. This statement will support the owner's inspection and airworthiness statement on block III of Form 8130-6. Appendix 1 to AC 90-89, Amateur-Built Aircraft and Ultralight Flight Testing Handbook, as revised, may be used.

NOTE: There is no requirement for airframe and powerplant mechanics to sign off on amateur-built airworthiness inspections. The aircraft builder's signature on Form 8130-6, block III, attests to the airworthiness of the amateur-built aircraft.

(5) Verify the entries on the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009) to ensure the applicant has fabricated and assembled the major portion.

g. Aircraft Inspection. The FAA must arrange with the applicant to make the aircraft available for inspection to determine, at a minimum, the following:

(1) The ID plate meets the requirements of § 45.11(a), as applicable.

(2) The information on the ID plate matches the information on Form 8130-6 and Form AC Form 8050-3. The pink copy of Form AC 8050-1 cannot be used for original certification).

(3) The aircraft nationality and registration marks are in accordance with part 45, subpart C.

(4) The flight control system, engine(s), propeller(s), pitot static system, and associated instruments operate properly.

(5) The cockpit instruments are appropriately marked, and needed placards are installed and placed for easy reference.

(6) System controls (for example, fuel selector(s) and electrical switches/breakers) are appropriately placed, clearly marked, provide easy access and operation, and function as intended by the amateur builder/owner.

(7) An ELT is installed, if required (§ 91.207).

(8) All explosive devices used in ballistic parachutes are clearly marked and identified.

NOTE: The only time extensive disassembly should be requested is if there is a safety concern. Safety concerns may be mitigated through detailed photographs or other documentation (refer to paragraph 151d).

h. Certificate Issuance. Upon satisfactory completion of the airworthiness inspection and documentation review, the FAA will issue the special airworthiness certificate and the operating limitations for that aircraft. The operating limitations (refer to paragraph 154) will be attached to Form 8130-7. The FAA must review the operating limitations with the applicant to ensure a clear understanding of the limitations. The FAA will issue phase I and phase II operating limitations for an unlimited duration during the initial airworthiness certification. The FAA may elect to issue phase I and phase II limitations separately only when a documented safety issue exists. The operating limitations should be prescribed in two phases in the same document as follows:

(1) For the phase I limitations, the FAA must prescribe all operating limitations appropriate for the applicant to demonstrate compliance with § 91.319(b) in the assigned flight test area. This includes a limitation requiring the owner/operator to endorse the aircraft logbook and maintenance records with a statement certifying that the prescribed flight hours have been completed, and the aircraft has been shown to comply with § 91.319(b). The owner/operator may then operate in accordance with phase II.

(2) For the phase II limitations, the FAA must prescribe operating limitations, as appropriate, for the operation of an amateur-built aircraft for an unlimited duration.

(3) Under § 91.319(e), the FAA may prescribe any additional limitations in phase I or phase II deemed necessary in the interest of safety.

(4) If the aircraft meets the requirements for the certification requested, the FAA must—

(a) Make an aircraft logbook and maintenance records entry.

(b) Issue Form 8130-7.

(c) Complete sections V and VIII of Form 8130-6, in accordance with the instructions contained in chapter 8 of this order.

(d) Examine, review, and route the certification file, in accordance with the instructions contained in chapter 8 of this order.

(5) If the aircraft does not meet the requirements for the certification requested and the airworthiness certificate is denied, the FAA must—

(a) Write a letter to the applicant stating the reason(s) for denying the airworthiness certificate.

(b) Attach a copy of the denial letter to the original Forms 8130-6 and 8130-12 and forward to AFS-750 to be made part of the aircraft record.

(c) Return to the applicant the documentation (photographs and three-view drawings) submitted for airworthiness certification.

(d) Advise the applicant that all documentation indicated in paragraph 152e needs to be resubmitted at the time of reapplication.

i. Transfer of Airworthiness Certificates. An airworthiness certificate is transferred with the aircraft (§ 21.179), for example, if there is a change of ownership or transfer of registration. There is no FAA inspection required after transfer of an aircraft with its airworthiness certificate, unless it is determined that revised operating limitations are necessary. In this case, a new Form 8130-7 must be issued to reflect the new date of the revised operating limitations. Form 8130-6 will be required to be submitted by the applicant.

j. Expired or Foreign Airworthiness Certificates. In some cases, amateur-built aircraft are sold with an expired airworthiness certificate or foreign airworthiness certificate. In such cases, an applicant may request and receive a special airworthiness certificate for the purpose of operating amateur-built aircraft, only if the aircraft previously was certificated under, and continues to meet § 21.191(g). In this case, a new Form 8130-7 would be issued along with new operating limitations, but without the eligibility to obtain a repairman certificate for that aircraft. The new certificate should be issued only after the FAA has verified airworthiness by following the appropriate procedures in paragraph 88 (Certification Procedures) of this order.

k. Special Considerations. In addition to the above certification requirements, if an applicant's aircraft is an unevaluated foreign amateur-built kit, the FAA must perform a major portion determination using the Amateur-Built Aircraft Fabrication and Assembly Checklist (2009). If compliance to the major portion requirement of § 21.191(g) cannot be ascertained, a special airworthiness certificate for the purpose of operating amateur-built aircraft must not be issued.

l. Canadian Applicants. A Canadian applicant with a design for an amateur-built aircraft kit may make an application to Transport Canada Civil Aviation (TCCA) for evaluation of the kit design. Upon receipt of the application, TCCA will review the design for compliance with the U.S. major portion requirements of § 21.191(g), and forward it to the FAA's AIR-230 Airworthiness Certification Branch. The process for FAA approval is contained in the Implementation Procedures for Airworthiness with Transport Canada.

m. Operation of Canadian-Registered Amateur-Built Aircraft in the United States. Canadian-registered amateur-built aircraft are issued a special certificate of airworthiness with operating limitations set by TCCA. Operation of Canadian-registered amateur-built aircraft certified under the provisions of Canadian air regulations in the United States is permitted by the issuance of a SFA under § 91.715. This authorization must be obtained before operation in the United States is permitted. The authorization may be requested electronically via the FAA Web site at http://www.faa.gov. Additional guidance on the issuance of SFAs for Canadian-registered amateur-built aircraft may be found in paragraph 261 of this order.

n. Canadian Amateur-Built Aircraft. There are differences between Canadian and U.S. regulations and policies governing the issuance of airworthiness certificates concerning amateur-built aircraft. Aircraft built in Canada as amateur-built aircraft and brought into the United States are not eligible to receive an FAA-issued experimental airworthiness certificate as an amateur-built aircraft. However, applicants may be considered for eligibility if—

(1) They provide the FAA an official TCCA document stating that the applicant did in fact fabricate and assemble the major portion of the aircraft within the meaning of, and in compliance with, § 21.191(g), or

(2) They must show evidence of meeting § 21.191(g).

153. FLIGHT TEST AREAS.

a. General. Section 91.319(b) requires that an unproven aircraft be assigned to a flight test area. The assigned test area is prescribed in accordance with § 91.305. The FAA, when requested, should assist applicants in selecting areas that comply with § 91.305. The FAA is required to evaluate each application to determine that the flight test area does not exceed that which is reasonably required to accomplish the program. Actions pertaining to flight test areas must be coordinated with the nearest office of the Air Traffic Service.

b. Assigned Flight Test Area. Under §§ 91.319(b) and 91.305, all initial flight operations of experimental aircraft must be limited to the assigned flight test area until the aircraft is shown to be controllable throughout its normal range of speeds and all maneuvers to be executed, and has not displayed any hazardous operating characteristics or design features.

(1) In the case of the first flight of an aircraft from an airport surrounded by a densely populated area, but with at least one acceptable approach/departure route of flight, the FAA must ensure that a route of flight is selected which subjects the fewest persons and least property to possible hazards. In addition, upon leaving such an airport, the aircraft should be required to operate from an outlying airport until its controllability and safety are established, after which the aircraft may return to its base and use the established corridor for subsequent operations. The description of the area selected by the applicant and agreed to by the FAA must be made a part of the operating limitations; or

(2) In the case of an aircraft located at any airport surrounded by a densely populated area and lacking any acceptable approach/departure route of flight, the FAA must deny the airworthiness certificate and process the denial in accordance with paragraph 88 of this order. The applicant must be advised to relocate the aircraft by other means to a suitable airport.

c. Assigned Flight Test Area. The procedures outlined under section 7, paragraph 135 of this order are applicable to amateur-built aircraft. Although the period of assignment is not established by regulation, the following times are suggested as guidelines when issuing original airworthiness certificates for amateur-built aircraft:

(1) Amateur-built aircraft issued original airworthiness certificates should be limited to operation within an assigned flight test area for a minimum of 25 hours when a type-certificated engine/propeller combination is installed. A minimum of 40 hours is required when a non-type-certificated engine, propeller, or engine/propeller combination is installed.

(2) Amateur-built gliders, balloons, dirigibles, and ultralight vehicles that meet the requirements of § 21.191(g), and for which original airworthiness certification is sought, should be limited to operation within an assigned flight test area for at least 10 hours of operation, including at least five takeoffs and landings.

(3) Following any major change, an amateur-built aircraft must be assigned to a flight test area for a minimum of 5 hours.

d. Operation Outside Flight Test Area. The procedures outlined under section 7, paragraph 136 of this order are applicable for amateur-built aircraft. During operation outside the flight test area, the following placard must be displayed in the aircraft in full view of all occupants: "NOTE: PASSENGER WARNING—THIS AIRCRAFT IS AMATEUR-BUILT AND DOES NOT COMPLY WITH FEDERAL SAFETY REGULATIONS FOR STANDARD AIRCRAFT."

NOTE: This placard is not necessary for single-place aircraft.

154. ISSUANCE OF EXPERIMENTAL AMATEUR-BUILT OPERATING LIMITATIONS.

a. Operating limitations must be designed to fit the specific situation encountered. The ASI may impose any additional limitations deemed necessary in the interest of safety. The ASI and/or designee must review each imposed operating limitation with the applicant to ensure that the operating limitations are understood by the applicant.

b. The following operating limitations shall be prescribed to experimental amateur-built aircraft:

(1) No person may operate this aircraft for other than the purpose of meeting the requirements of § 91.319(b) during phase I flight testing, and for recreation and education after meeting these requirements as stated in the program letter (required by § 21.193) for this aircraft. In addition, this aircraft must be operated in accordance with applicable air traffic and general operating rules of part 91 and all additional limitations herein prescribed under the provisions of § 91.319(i). These operating limitations are a part of Form 8130-7, and are to be carried in the aircraft at all times and be available to the pilot in command of the aircraft.

(2) During phase I flight testing to meet the requirements of § 91.319(b), all flights must be conducted within the geographical area described as follows:

(a) The area must be described by radius, coordinates, and/or landmarks.

(b) The designated area must be over open water or sparsely populated areas having light air traffic.

(c) The size of the area must be that required to safely conduct anticipated maneuvers and tests, as appropriate.

NOTE: In the case of an airport surrounded by a densely populated area, refer to section 7, paragraph 135b(1) of this order.

(3) This aircraft must be operated for at least _____ hours in the assigned geographic area.

NOTE: The FAA requires a minimum of 25 hours of flight testing for an aircraft with a type-certificated engine and propeller combination installed. A minimum of 40 hours is required when a non-type-certificated engine, propeller, or engine/propeller combination is installed. ASIs may assign longer test hours when it is necessary to determine compliance with § 91.319(b).

(4) All test flights, at a minimum, must be conducted under day VFR only. Guidance concerning the scope and detail of test flights can be found in AC 90-89. Following satisfactory completion of the required number of flight hours in the flight test area, the pilot must certify in the records that the aircraft has been shown to comply with § 91.319(b). Compliance with § 91.319(b) must be recorded in the aircraft records with the following, or a similarly worded, statement: **"I certify that the prescribed flight test hours have been completed and the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous operating characteristics or design features, and is safe for operation. The following aircraft operating data has been demonstrated during the flight testing: speeds Vso _____, Vx _____, and Vy _____, and the weight _____ and CG location _____ at which they were obtained."**

(5) Except for takeoffs and landings, this aircraft may not be operated over densely populated areas or in congested airways.

> **NOTE: This limitation is applicable for phases I and II and should be issued in accordance with paragraphs 135b(1) and (2) of this order.**

(6) This aircraft is prohibited from operating in congested airways or over densely populated areas unless directed by air traffic control, or unless sufficient altitude is maintained to effect a safe emergency landing in the event of a power unit failure, without hazard to persons or property on the ground.

> **NOTE: This limitation is applicable to the aircraft after it has satisfactorily completed all requirements for phase I flight testing, has the appropriate endorsement in the aircraft logbook and maintenance records, and is operating in phase II.**

(7) This aircraft is to be operated under VFR, day only.

(8) After completion of phase I flight testing, unless appropriately equipped for night and/or instrument flight in accordance with § 91.205, this aircraft is to be operated under VFR, day only.

(9) Aircraft instruments and equipment installed and used under § 91.205 must be inspected and maintained in accordance with the requirements of part 91. Any maintenance or inspection of this equipment must be recorded in the aircraft logbook and maintenance records.

(10) During the flight testing phase, no person may be carried in this aircraft during flight unless that person is essential to the purpose of the flight.

(11) No person may operate this aircraft for carrying persons or property for compensation or hire.

(12) The pilot in command of this aircraft must advise each passenger of the experimental nature of this aircraft, and explain that it does not meet the certification requirements of a standard certificated aircraft.

(13) This aircraft must contain the placards or markings, as required by § 91.9. In addition, the placards and markings must be inspected for legibility and clarity, and the associated systems inspected for easy access and operation, to ensure they function as intended by the amateur builder/owner during each condition inspection.

(14) This aircraft must display the word "EXPERIMENTAL" in accordance with § 45.23(b).

(15) This aircraft is prohibited from aerobatic flight, that is, an intentional maneuver involving an abrupt change in the aircraft's attitude, an abnormal attitude, or abnormal acceleration not necessary for normal flight.

> **NOTE: If the amateur builder states that the aircraft is capable of aerobatic flight, limitation 16 will be used in lieu of limitation 15.**

(16) This aircraft may conduct aerobatic flight in accordance with the provisions of § 91.303. Aerobatics must not be attempted until sufficient flight experience has been gained to establish that the aircraft is satisfactorily controllable and in compliance with § 91.319(b). The aircraft may only conduct those aerobatic flight maneuvers that have been satisfactorily accomplished during flight testing and recorded in the aircraft logbook and maintenance records by use of the following, or a similarly worded, statement*:* **"I certify that the following aerobatic maneuvers have been test flown and that the aircraft is controllable throughout the maneuvers' normal range of speeds, and is safe for operation. The flight-tested aerobatic maneuvers are _____, _____, _____, and _____."**

> **NOTE: Aerobatic flights may be permitted in the assigned test area. The applicant should be advised that aerobatics or violent maneuvers should not be attempted until sufficient flight experience has been gained to establish that the aircraft is satisfactorily controllable. These operating limitations may be modified to include only those aerobatics/maneuvers that have been satisfactorily accomplished and recorded in the aircraft records during the flight test period. These aerobatic maneuvers should be permitted upon leaving the assigned test area. Appropriate limitations identifying the aerobatics/maneuvers and conditions under which they may be performed should be prescribed. The FAA may witness aerobatic maneuvers, if deemed necessary.**

(17) The pilot in command of this aircraft must hold an appropriate category/class rating. If required, the pilot in command also must hold a type rating in accordance with part 61, or a letter of authorization issued by an FAA Flight Standards Operations Inspector.

> **NOTE: This limitation applies to any turbojet/turbofan-powered aircraft, any aircraft with a maximum takeoff weight exceeding 12,500 pounds, and any other aircraft when deemed necessary. The Flight Standards Service inspectors should refer to FAA Order 8700.1, General Aviation Inspector's Handbook, for further guidance.**

(18) The pilot in command of this aircraft must hold a pilot certificate or an authorized instructor's logbook endorsement. The pilot in command also must meet the requirements of § 61.31(e), (f), (g), (h), (i), and (j), as appropriate.

> **NOTE: This operating limitation applies to most amateur-built aircraft as a standard operating limitation (reference § 61.31(k)).**

(19) After incorporating a major change as described in § 21.93, the aircraft owner is required to reestablish compliance with § 91.319(b) **and notify the geographically responsible FSDO of the location of the proposed test area. The aircraft owner must obtain concurrence from the FSDO as to the suitability of the proposed test area.** If the major change includes installing a different type of engine (reciprocating to turbine) or a change of a fixed-pitch from or to a controllable propeller, the aircraft owner must fill out a revised Form 8130-6 to update the aircraft's file in the FAA Aircraft Registration Branch. All operations must be conducted under day VFR conditions in a sparsely populated area. The aircraft must remain in flight test for a minimum of 5 hours. The FSDO may require additional time (more than 5 hours) depending on the extent of the modification. Persons nonessential to the flight must not be carried. The aircraft owner must make a detailed aircraft logbook and maintenance records entry describing the change before the test flight. Following satisfactory completion of the required number of flight hours in the flight test area, the pilot must certify in the records that the aircraft has been shown to comply with § 91.319(b). Compliance with § 91.319(b) must be recorded in the aircraft records with the following, or a similarly worded, statement: **"I certify that the prescribed flight test hours have been completed and the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous characteristics or design features, and is safe for operation. The following aircraft operating data has been demonstrated during the flight testing: speeds Vso _____, Vx _____, and Vy _____, and the weight _____, and CG location _____ at which they were obtained."**

(20) This aircraft must not be used for glider towing, banner towing, or intentional parachute jumping.

(21) This aircraft does not meet the requirements of the applicable, comprehensive, and detailed airworthiness code, as provided by Annex 8 to the Convention on International Civil Aviation. The owner/operator of this aircraft must obtain written permission from another CAA before operating this aircraft in or over that country. That written permission must be carried aboard the aircraft together with the U.S. airworthiness certificate and, upon request, be made available to an FAA inspector or the CAA in the country of operation.

(22) No person must operate this aircraft unless within the preceding 12 calendar months it has had a condition inspection performed in accordance with the scope and detail of appendix D to part 43, or other FAA-approved programs, and was found to be in a condition for safe operation. As part of the condition inspection, cockpit instruments must be appropriately marked and needed placards installed in accordance with § 91.9. In addition, system-essential controls must be in good condition, securely mounted, clearly marked, and provide for ease of operation. This inspection will be recorded in the aircraft logbook and maintenance records.

(23) Condition inspections must be recorded in the aircraft logbook and maintenance records showing the following, or a similarly worded, statement: **"I certify that this aircraft has been inspected on [insert date] in accordance with the scope and detail of appendix D to part 43, and was found to be in a condition for safe operation."** The entry will include the aircraft's total time-in-service (cycles if appropriate), and the name, signature, certificate number, and type of certificate held by the person performing the inspection.

NOTE: Limitations 24 and 25 will be issued in lieu of limitations 22 and 23 for turbine-powered amateur-built aircraft.

(24) This aircraft must not be operated unless it is inspected and maintained in accordance with an inspection program selected, established, identified, and used as set forth in § 91.409(e) through (h). This inspection must be recorded in the aircraft logbook and maintenance records.

(25) Inspections must be recorded in the aircraft logbook and maintenance records showing the following, or a similarly worded, statement: "I certify that this aircraft has been inspected on [insert date] in accordance with the scope and detail of the [identify program, title] FSDO-approved program dated _____, and found to be in a condition for safe operation." The entry will include the aircraft's total time-in-service (cycles if appropriate), and the name, signature, certificate number, and type of certificate held by the person performing the inspection.

(26) An experimental aircraft builder certificated as a repairman for this aircraft under § 65.104 or an appropriately rated FAA-certificated mechanic may perform the condition inspection required by these operating limitations.

(27) Application must be made to the geographically responsible FSDO or MIDO for any revision to these operating limitations.

(28) The pilot in command of this aircraft must notify air traffic control of the experimental nature of this aircraft when operating into or out of airports with an operational control tower. When filing IFR, the experimental nature of this aircraft must be listed in the remarks section of the flight plan.

INTENTIONALLY LEFT BLANK

SECTION 10. CERTIFICATION AND OPERATION OF AIRCRAFT UNDER THE EXPERIMENTAL PURPOSE(S) OF EXHIBITION AND AIR RACING

155. GENERAL. Under the provisions of § 21.191(d), exhibition aircraft are defined as aircraft that exhibit the aircraft's flight capabilities, performance, or unusual characteristics at airshows, for motion picture, television, and similar productions, and for the maintenance of exhibition flight proficiency, including (for persons exhibiting aircraft) flying to and from such airshows and productions. Under the provisions of § 21.191(e), air racing aircraft are defined as aircraft that participate in air races, including (for such participants) practicing for such air races and flying to and from racing events.

a. Exhibition. Operating an aircraft to demonstrate its flight characteristics or capabilities in connection with sales promotions for the aircraft is not considered to be an eligible operational purpose under the exhibition category. A certificate for experimental exhibition must only be issued when an aircraft is to be used for valid exhibition purposes. Included in those purposes are organized airshows, organized air races, organized fly-in activities, organized exhibitions, youth education events, shopping mall/school/similar static displays, organized aerobatic competition, sail plane fly-ins or competitive races or meets, and movie or television productions. The duration of an airworthiness certificate for exhibition is unlimited.

b. Air Racing. Operating an aircraft to demonstrate its flight characteristics or capabilities in connection with sales promotions for the aircraft is not considered to be an eligible operational purpose under the air racing category. A certificate for experimental air racing must only be issued when an aircraft is to be used for valid air racing purposes. The duration of an airworthiness certificate for air racing is unlimited.

c. Base of Operation. When an aircraft's base of operation is changed or there is a transfer of ownership, the owner/operator must notify the local FSDO having jurisdiction over the area in which the aircraft will be based. The owner/operator will provide the local FSDO with a copy of the inspection program identifying the person responsible for scheduling and performing the inspections as well as the requested proficiency areas.

d. Experimental Airworthiness Certification Moratorium. On July 9, 1993, a moratorium was established because of a dramatic increase in applications for special airworthiness certificates and SFAs for non-U.S.-manufactured aircraft that did not hold TCs issued under § 21.29. The moratorium was lifted on August 18, 1993, with interim guidance provided to certificate these aircraft. Although the moratorium was established for non-U.S.-manufactured aircraft, this policy will be used when issuing a special airworthiness certificate for the experimental purpose(s) of exhibition or air racing, regardless of the country of manufacture.

e. Effectivity. Aircraft that received original airworthiness certification before July 9, 1993, are NOT affected by this order unless the original airworthiness certification purpose changes, for example, from R&D to exhibition. Those aircraft, except for purpose changes, will not be affected until the FAA works with the public to determine the best strategy to certificate all experimental exhibition and/or air racing aircraft in accordance with the new policy. The policy established in this order will not be used in these cases unless specifically requested by the applicant.

FIGURE 4-13. SAMPLE PROGRAM LETTER, RESEARCH AND DEVELOPMENT/SHOWING COMPLIANCE APPLICANT PROGRAM LETTER SPECIAL AIRWORTHINESS CERTIFICATE

1. Registered Owner (as shown on Certificate of Aircraft Registration)		
NAME	ADDRESS	
2. Aircraft Description		
1. Registration Mark	2. Aircraft Builder	3. Yr. Mfg.
4. Aircraft Serial No.	5. Aircraft Model Designation	
3. Describe Program Purpose for which the aircraft is to be used (FAR 21.193(d)(1).		
4. List estimated flight hours required for program.		Hrs.:
List estimated number of flights required for program.		No. Flts:
List estimated duration for programs (FAR 21.193(d)(2)).		No. Days:
5. Describe the areas over which the flights are to be conducted, and address of base operation (FAR 21.193(d)(3)).		
6. Describe the aircraft configuration (attach three-view drawings or three-view dimensioned photographs of the aircraft) (FAR 21.193(b)(4)).		
7. Date	Name and Title (Print or Type)	Signature

FIGURE 4-14. SAMPLE 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) _____

Address(es) _____
No. & Street City State Zip

Telephone No.(s) (___) _____ (___) _____
Residence Business

II. AIRCRAFT INFORMATION

Model _____ Engine(s) Make _____

Assigned Serial No. _____ Engine(s) Serial No. _____

Registration No. _____ Prop./Rotor(s) Make _____

Aircraft Fabricated: Plan ☐ Kit ☐ Prop./Rotor(s) Serial No.(s) _____

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

_____
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

-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*)	Date

IV. NOTARIZATION STATEMENT

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

FIGURE 4-15. SAMPLE FORM 8000-38, FABRICATION/ASSEMBLY OPERATION CHECKLIST (CONTINUED)

FABRICATION/ASSEMBLY OPERATION CHECKLIST (Continued)		
	Accomplished By	
	Kit Manufacturer	Amateur
COCKPIT/INTERIOR		
1. Fabricate Instrument Panel		
2. Install Instrument Panel and Instruments		
3. Fabricate Seats		
4. Install Seats		
5. Fabricate Electrical Wiring, Controls/Switches		
6. Install Electrical System Controls/Switches		
TOTAL		
Comments		
Printed Name	Signature	Date

FAA Form 8000-38 (12-91)

FIGURE 4-16. RESERVED.

FIGURE 4-17. RESERVED.

FIGURE 4-18. SAMPLE UNLIMITED FORM 8130-7

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

SPECIAL AIRWORTHINESS CERTIFICATE

A	CATEGORY/DESIGNATION RESTRICTED		
	PURPOSE AGRICULTURAL		
B	MANU-FACTURER	NAME N/A	
		ADDRESS N/A	
C	FLIGHT	FROM SEE ATTACHED OPERATING LIMITATIONS N/A	
		TO SEE ITEM D, REVERSE SIDE OF THIS CERTIFICATE N/A	
D	N- 32104		SERIAL NO. 2245
	BUILDER BELL		MODEL 47G-4
E	DATE OF ISSUANCE 01/31/2001		EXPIRY Unlimited
	OPERATING LIMITATIONS DATED 01/31/2001		ARE PART OF THIS CERTIFICATE
	SIGNATURE OF FAA REPRESENTATIVE Bart J. Johnson *Bart J. Johnson*		DESIGNATION OR OFFICE NO. NW-XX

Any alteration, reproduction or misuse of this certificate may be punishable by a fine not exceeding $1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE TITLE 14, CODE OF FEDERAL REGULATIONS (CFR).

FAA Form 8130-7 (07/04) *SEE REVERSE SIDE*

A	This airworthiness certificate is issued under the authority of Public Law 104-6, 49 United States Code (USC) 44704 and Title 14, Code of Federal Regulations (CFR).
B	The airworthiness certificate authorizes the manufacturer named on the reverse side to conduct production fight tests, and only production flight tests, of aircraft registered in his name. No person may conduct production flight tests under this certificate: (1) Carrying persons or property for compensation or hire: and/or (2) Carrying persons not essential to the purpose of the flight.
C	This airworthiness certificate authorizes the flight specified on the reverse side for the purpose shown in Block A.
D	This airworthiness certificate certifies that as of the date of issuance, the aircraft to which issued has been inspected and found to meet the requirements of the applicable CFR. The aircraft does not meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention On International Civil Aviation. No person may operate the aircraft described on the reverse side: (1) except in accordance with the applicable CFR and in accordance with conditions and limitations which may be prescribed by the Administrator as part of this certificate; (2) over any foreign country without the special permission of that country.
E	Unless sooner surrendered, suspended, or revoked, this airworthiness certificate is effective for the duration and under the conditions prescribed in 14 CFR Part 21, Section 21.181 or 21.217.

FIGURE 4-30. SAMPLE FORM 8130-15, LIGHT-SPORT KIT-BUILT AIRCRAFT STATEMENT OF COMPLIANCE

Form Approved
O.M.B. No. 2120-0690

U.S. Department of Transportation
Federal Aviation Administration

Light-Sport Aircraft Statement of Compliance

INSTRUCTIONS - Print or type. Present original to an authorized FAA Representative. If additional space is required, use an attachment.

I. Aircraft Identification

1. Manufacturer Name	2. Manufacturer Address (*street, city, zip*)		
Express Aircraft	1876 N. Parkview Drive, Chandler, OK 65432		
3. Aircraft Serial No.	4. Date of Manufacture (*MM dd, yyyy*)	5. Aircraft Make	6. Aircraft Model
K-00014	Kit – 03/07/2006	Express Flyer	Silver One
7. Maximum Take-off Weight	8. Maximum Number Occupants	9. V_H	10. V_{S1}
1,320 lb	2	120 KCAS	45 KCAS

Class of light-sport aircraft: *(Check all applicable items)* Operation on Water

X Airplane ☐ Powered Parachute ☐ Weight-Shift-Control ☐ Glider ☐ Lighter-Than-Air

II. Applicable User Manuals

Consensus Standard(s) *(list below or use attachment)*	Revision	Valid Until
Silver One Assembly Instructions, KFSO-1A	Rev A	N/A
ASTM Standard F2245-04 (design and performance)	N/A	N/A
ASTM Standard F1234-06 (assembly instructions)	N/A	N/A
Aircraft Operating Instructions (*list applicable items*)	Revision	Date issued
Silver One Operating Instructions, SO-OI-1	None	12/11/2005
ASTM Standard F2245-04	Revision N/A	Date N/A
Aircraft Maintenance and Inspection Procedures (*list applicable items*)	Revision	Date issued
Silver One Maintenance Manual, SO-MM-1	Rev A	11/30/2005
ASTM Standard F2483-05	Revision N/A	Date N/A
Aircraft Flight Training Supplement (*list applicable items*)	Revision	Date issued
Silver One Flight Training, SO-FT-1	None	12/11/2005
ASTM Standard F2245-04	Revision N/A	Date N/A

III. Manufacturer's Process Documents

Comments (*any additional statements may be stated here or attached*)
Express Aircraft manufactured and assembled Express Flyer Silver One, serial number F-0002, N456EF, which was issued a special airworthiness certificate in the light-sport category on 12/01/2005.

Manufacturer's Quality Assurance System (*list applicable items*)	Revision	Date 01/18/2006
Express Aircraft QA Manual	Rev C	
ASTM Standard F2279-03	Revision N/A	
Manufacturer's Continued Airworthiness System (*list applicable items*)	Revision	Date
N/A	Revision	

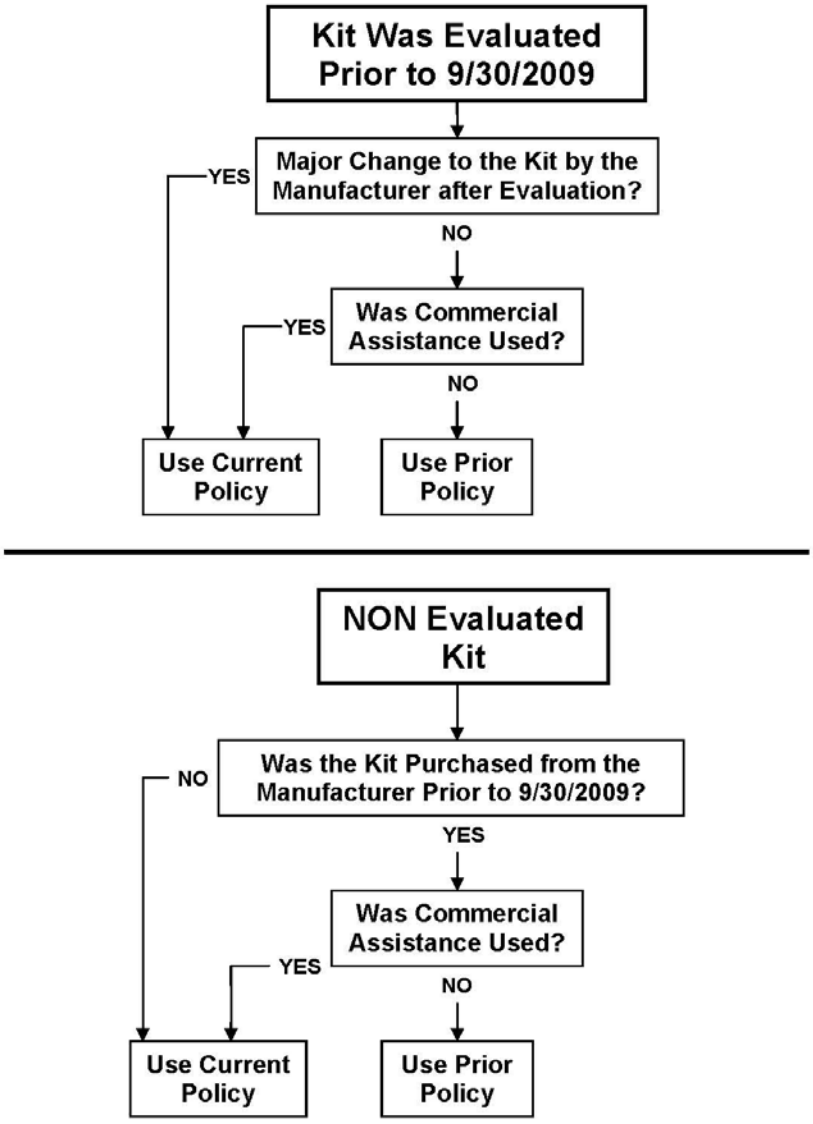
IV. Manufacturer's Certification

CERTIFICATION: I hereby certify that ~~aircraft~~ kit serial number K-00014 complies with the Consensus Standard(s) identified on this statement of compliance ~~and that the Manufacturer's Continued Airworthiness System will be adhered to support the aircraft throughout its life~~. This aircraft (1) was manufactured following the consensus standard(s) procedures and ~~Manufacturer's Quality Assurance System identified on this statement,~~ (2) conforms to the manufacturer's design data, ~~(3) was ground and flight tested successfully, and (4) is in a condition for safe operation~~. Additionally, at the request of the FAA, the manufacturer will provide unrestricted access to its facilities.

Name: Jacob Small	Signature: Jake Small
Title: General Manager	Date 03/07/2006
Name:	
Title:	Date

FAA Form 8130-15 (09-04) *

FIGURE 4-31. USE OF PRIOR POLICY



NOTES for figure 4-31:

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 (e.g. ,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.

FIGURE 5-2. SAMPLE FORM 8130-1, APPLICATION FOR EXPORT AIRWORTHINESS APPROVAL (FACE SIDE)

Form Approval OMB No. 2120-0018 (9-07)

U.S. Department of Transportation Federal Aviation Administration	**Application for Export Certificate of Airworthiness**	Export Certificate No.

INSTRUCTIONS – This application is to be submitted to an authorized FAA representative (one copy) when the product(s) to be exported is (are) presented for inspection. Use Part I for Class I products and Part II for Class II. For complete aircraft execute items 1 through 11, as applicable. For engines and propellers, omit item 5A. Part III is for FAA use only.

Part I – Application for Export Certificate of Airworthiness (Complete items 1-11)

1. Application is made for an export certificate of airworthiness to cover the product(s) described below which (are):

☐ *NEW* ☐ *USED (Aircraft)* ☐ *NEWLY OVERHAULED*

2. Name and address of exporter	3. Name and address of foreign purchaser	4. Country of destination

5. Description of product(s)

Type (a)	Make and Model (b)	Identification No.	Serial Nos. (c)	FAA T.C. or Spec. No. (d)	Operating time (Hours) (e)	
					Since Overhaul	Total
A. AIRCRAFT						
B. ENGINES						
C. PROPELLERS						

6. Does the product comply with all applicable Federal Aviation Regulations, Airworthiness Directives, and other FAA requirements?

☐ **YES** ☐ **NO *(Explain in "Remarks")***

7. Have applicable special requirements of the importing country been complied with?

☐ **YES** ☐ **NO *(Explain in "Remarks")***

8. Date title passed or is expected to pass to foreign purchaser:

9. For overseas shipment, preservation and packaging methods used to protect product(s) against corrosion and damage *(List Spec. No. or Title)*:

Effective duration of above methods:

10. Remarks

11. EXPORTER'S CERTIFICATION – The undersigned certifies that the above statements are true and that the product(s) described herein is (are) airworthy and in a condition for safe operation except as may be noted under item 10 "Remarks" above.

Signature of applicant or authorized representative	Title	Date

FAA Form 8130-1 (07-08) Supersedes Previous Edition NSN: 0052-00-024-9005

FIGURE 5-2. SAMPLE FORM 8130-1, APPLICATION FOR EXPORT AIRWORTHINESS APPROVAL (REVERSE SIDE)

Part II – Application for Approval of Aeronautical Parts (Complete Items 12-20)

12. Name and address of exporter	13. Name and address of foreign purchaser	14. Country of destination

15. Parts are eligible for installation on _____	Make and model Class I product	FAA Spec. No. or T.C.

16. The parts are *(Check One)* → ☐ ***NEW*** ☐ ***NEWLY OVERHAULED***

17. The parts are described *(Check One)*

☐ Below by name, part number and quantity ☐ On the attached invoice or packing sheet by name, part number and quantity

Invoicing/packing sheet No.

Name (a)	Part number (b)	Quantity (c)

18. Have applicable special requirements of the importing country been complied with? ☐ ***YES*** ☐ ***NO (Explain in item 10 "Remarks")***

19. Preservation and packaging methods used to protect parts against corrosion and damage *(List Spec. No. or Title)*:

Effective duration of above methods:

20. Exporters Certification – I certify that the foregoing statements are true and that the parts described herein are airworthy, conform to FAA approved design data, are in a condition for safe operation except as may be noted in item 10 "Remarks".

Signature of applicant or authorized representative	Title	Date

Part III – Approval *(FOR FAA USE ONLY)*

21. It is considered that the product(s) described in Part I or Part II is (are) airworthy and conform(s) to pertinent requirements except as noted in Item 10. *(Check One)* → ☐ Part I ☐ Part II

Signature	Number	Date

(Check one) → ☐ ODA ☐ DMIR ☐ DAR ☐ FAA Inspector

22. Give quantity of approval tags, FAA Form 8130-3, issued for the parts described in Part II. →	Quantity

23. EXPORT FILE SPOT-CHECKED BY:

FAA Supervising Inspector	D.O. No.	Date

FAA Form 8130-1 (07-08) Supersedes Previous Edition *U.S. Government Printing Office: 1996 – 405-552/45303 NSN: 0052-00-024-9005

a. Export Certificate No. This block is left blank by the applicant. The FAA must enter the serial number from Form 8050-72.

b. Part I (For Class I Products).

(1) Item Nos. 1-4. Self-explanatory.

(2) Item No. 5. Description of Product(s). Self-explanatory, except as follows:

(a) For an aircraft not under U.S. registry, insert in the Identification No. block the nationality and registration marks supplied by the country of registry or intended registry that are displayed on the aircraft. For U.S.-registered aircraft, insert the ID marks as assigned under part 47. Any questions concerning the marking requirements of the importing country must be resolved between the exporter/importer and the CAA of that country.

(b) Under FAA Spec. No., enter the pertinent specification number or the TCDS number, as applicable.

(c) For new and used aircraft, enter in the Operating Time (Hours) block the number of operating hours since the annual type inspection required by § 21.329, and the total time-in-service. Because aircraft engines and propellers must have been newly overhauled under § 21.329(e), the operating time since overhaul would reflect only run-in time as required to complete the overhaul process.

(d) For aircraft, the blocks for engine(s) and propeller(s) must be completed to reflect the required information, as applicable.

(3) Item Nos. 6 and 7. These items are self-explanatory; however, if the No box is checked, explain the deviations in item No. 10 and attach the original or true copy of documents stating that the product will be acceptable with the deviations listed, as received from the CAA of the importing country.

(4) Item No. 8. This item provides a means of establishing the date the ownership of the stated Class I product is expected to pass to the purchaser.

(5) Item No. 9. This item provides a means of documenting the preservation and packaging methods used to protect against corrosion and damage. It is recommended that all products be appropriately treated for corrosion and damage prevention.

(6) Item No. 10. This space may be used to convey the information required under item Nos. 6 and 7. This space also may be used by the exporter to convey any other information pertinent to the issuance of the export airworthiness approval. Additional sheets may be attached, as necessary, and appropriately cross-referenced. In addition, list the documents that the regulation requires to be submitted with the application under the provisions of § 21.327. After review by the FAA, the documents required to be furnished to the importing country under § 21.335 will be supplied to the applicant.

(7) Item No. 11. The authorized representative of the exporter must sign this certificate in ink and ensure it is dated. The typed name, title, and signature must be legible.

c. Part II (For Class II Products).

(1) Item Nos. 12-14. Self-explanatory.

(2) Item No. 15. Use the instructions for entering eligibility information from Order 8130.21.

NOTE: No entry is required in the FAA Spec No. box.

(3) Item No. 16. Self-explanatory.

(4) Item No. 17. This item provides for the description and listing of the Class II products (parts) being exported. Select the first check box and list the parts in the space provided. If the entire list of parts cannot fit in the space provided, select the second check box and, on the line provided, specifically identify the exporter's shipping document covering the parts concerned. Attach a copy of this document to the form. In either case, if more than one type of Class II product is involved, they are to be listed according to the Class I product for which they are eligible. List the name, part number (or equivalent means of identifying each physical product), and quantity of each part.

(5) Item No. 18. This item is self-explanatory. If the No box is checked, explain the noncompliance in item No. 10 and attach the original, or a true copy, of the documents stating that the product will be acceptable with the deviation(s) listed, as received from the CAA of the importing country.

(6) Item No. 19. This item provides a means of documenting the preservation and packaging methods used to protect against corrosion and damage. It is recommended that all products be appropriately treated for corrosion and damage prevention.

(7) Item No. 20. The authorized representative of the exporter must date and sign this certification in ink above the typed or printed name and title.

d. Part III. Approval (For FAA Use Only).

(1) Item No. 21. The typed name and signature of the ASI and designee must be legible and in permanent ink. The number should be the office identifier or designee designation number. ODA manufacturers must use their authorization number as assigned by the FAA.

(2) Item No. 22. The ASI or authorized designee must enter the quantity of Forms 8130-3 issued for the parts described in part II of the form.

(3) Item No. 23. A completed spot check of the file is indicated by the signature of the supervising ASI in permanent ink above the typed name. The district or regional office number and date must be entered in the boxes. If the file is not spot checked, omit the name and signature, but enter the district or regional office number and date.

273. EXAMINATION, REVIEW, AND ROUTING OF CERTIFICATION FILES.

a. It is the responsibility of all ASIs and designees to examine in detail each certification file processed to ensure accuracy, completeness, legibility, and compliance with applicable requirements, including all necessary attachments. The following list represents the primary data that must be retained in the permanent files. These documents must be submitted to AFS-750 no later than 30 days after the field offices receives them. Do not include any documentation that is not required in support of the certification action.

(1) Airworthiness Certificates.

(a) The original Form 8130-6.

(b) Applications for special flight permits for operation of overweight aircraft only in accordance with § 21.197(b).

(c) Applications for an experimental airworthiness certificate must include the data required by § 21.193, as applicable.

(d) The original Form 8130-9.

(e) A copy of Form 8130-2 or any other data, drawings, photographs, etc., as applicable.

(f) A copy of Form 337, as applicable. Do not include referenced data forming the basis for approval of the repair or alteration.

(g) A copy of Form 8100-2, or Form 8130-7, as applicable. When Form 8130-7 is issued as a special flight permit, submit only those copies which permit operation of overweight aircraft in accordance with § 21.197(b). Superseded, terminated, or canceled airworthiness certificates must be included if a recurrent certificate is issued.

(h) A copy of operating limitations, if issued.

(i) A copy of the checklist and inspection record for aircraft built from spare and surplus parts.

(j) The foreign airworthiness certificate for imported aircraft, as applicable.

(k) Form 8130-15, statement of compliance for light-sport category and kit-built experimental light-sport aircraft.

(l) Form 8130-12, Eligibility Statement, Amateur-Built Aircraft.

(2) Export for Class I Product.

(a) The original Form 8130-1.

(b) The statement of acceptance from an importing country listing the specific noncompliance(s), as applicable.

(c) A copy of Form 8130-4.

(d) The original Form 8050-72.

(3) Export of Class II and III Products. Retain the following in the district or regional office. DMIRs, ODARs, and DOAs may retain the records at their facility as long as their authorization is valid.

(a) The original application for an Export C of A, as applicable, along with any data showing acceptance of deviations from the CAA of the country of import (for Class II only).

(b) A copy of Form 8130-3.

(c) The original Form 8100-1.

(4) Import of a Class I Product Manufactured in a Bilateral Country. Retain the following in the district or regional office:

(a) Aircraft. The certificate of airworthiness issued by the country the aircraft was manufactured in that states the aircraft conforms to its type design and is in a condition for safe operation.

(b) Aircraft Engine and Propeller. The certification from the country of manufacture for engines and propellers that was submitted when deemed they were a part of, or were to be installed on, an aircraft.

> **NOTE: A certification may be accepted from a third party country when the acceptance is permitted by the BAA or BASA IPA.**

(c) The applicable documents listed in paragraph 273a(1) of this order.

b. In addition to the above-mentioned data, the district or regional offices must maintain copies of any other data they deem appropriate to substantiate the certification of the product. This includes Form 8100-1, eligibility statements, program letters, etc.

c. The appropriate district or regional office must ensure that all airworthiness actions processed by FAA designees are submitted to the district or regional office for review and transmittal to AFS-750.

274.-280. RESERVED FOR FUTURE CHANGES.