

2/15/00

SUBJ: AIRWORTHINESS CERTIFICATION OF AIRCRAFT AND RELATED PRODUCTS

1. PURPOSE. This change is issued to incorporate revised operating limitations.
2. DISTRIBUTION. This change 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 Directorates and Regional Flight Standards Divisions; to all Aircraft Certification Offices; to all Manufacturing Inspection District and Satellite Offices; to all Flight Standards District Offices; to the Aircraft Certification Branch and Flight Standards Branch at the FAA Academy; to the Brussels Aircraft Certification Staff and Flight Standards Staff; to applicable Representatives of the Administrator; and to all International Field Offices.
3. DISPOSITION OF TRANSMITTAL. After filing the attached pages, this change transmittal shall be retained.

## PAGE CONTROL CHART

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REMOVE PAGES	DATED	INSERT PAGES	DATED
111 thru 115 (and 116)	9/30/99	111 thru 115 (and 116)	2/15/00
127	9/30/99	127	2/15/00
128	9/30/99	128	9/30/99

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/s/

Frank P. Paskiewicz  
Manager, Production and Airworthiness  
Certification Division

**d. Operation Outside Flight Test Area.** The procedures outlined under section 6, paragraph 126 of this order are applicable for amateur-built aircraft. During operation outside the flight test area, the following placard shall 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.**

#### **134. ISSUANCE OF EXPERIMENTAL AMATEUR-BUILT OPERATING LIMITATIONS.**

**a. OPERATING LIMITATIONS SHALL BE DESIGNED TO FIT THE SPECIFIC SITUATION ENCOUNTERED. THE FAA INSPECTOR MAY IMPOSE ANY ADDITIONAL LIMITATIONS DEEMED NECESSARY IN THE INTEREST OF SAFETY.** The FAA inspector and/or designee shall review each operating limitation imposed 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 14 CFR, part 21.193) for this aircraft. In addition, this aircraft shall 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 part 91.319(e). These operating limitations are a part of the FAA Form 8130-7, special airworthiness certificate, and are to be carried in the aircraft at all times for availability to the pilot in command of the aircraft.

**(2)** During phase I flight testing to meet the requirements of § 91.319(b) all flights shall be conducted within the geographical area described as follows: (The area shall be described by radius, or coordinates and/or landmarks). The designated area must be over open water or sparsely populated areas having light air traffic. The size of the area shall be that required to safely conduct the type of anticipated maneuvers and tests, as appropriate.

**NOTE: In the case of an airport surrounded by a densely populated area, refer to section 6, paragraph 125b(1) of this order.**

**(3)** This aircraft shall 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 installed or a minimum of 40 hours for a non-type certificated engine and propeller. Inspectors may assign longer test hours when it is determined necessary to determine compliance with § 91.319(b).**

(4) All test flights as a minimum shall be conducted under Visual Flight Rules (VFR), day only.

Guidance concerning the scope and detail of test flights can be found in Advisory Circular 90-89, Amateur-built Aircraft and Ultralight Flight Testing Handbook. Following satisfactory completion of the required number of flight hours in the flight test area, the pilot shall certify in the records that the aircraft has been shown to comply with § 91.319(b). Compliance with § 91.319(b) shall 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 V<sub>so</sub>\_\_\_\_\_, V<sub>x</sub>\_\_\_\_\_, and V<sub>y</sub>\_\_\_\_\_, 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.

(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 surface.

**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 is operating in phase II.**

(7) This aircraft is to be operated under Visual Flight Rules (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 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 shall advise each person carried 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 shall contain the placards, markings, etc. as required by § 91.9.

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

(15) This aircraft is prohibited from aerobatic flight; i.e., 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 builder states 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 shall 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 maintenance records by use of the following or a similarly worded statement: **"I certify that the following aerobatic maneuvers have been test flown and the aircraft is controllable throughout the maneuver's normal range of speeds and is safe for operation. The flight tested aerobatics 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 that assigned test area. Appropriate limitations identifying the aerobatics/maneuvers and conditions under which they may be performed should be prescribed. The certificating inspector may witness aerobatic maneuvers if deemed necessary.**

(17) The pilot in command of this aircraft shall hold an appropriate category/class rating. If required, the pilot in command must also hold a type rating per 14 CFR, part 61, or a "Letter of Authorization" issued by an FAA Flight Standards Operations Inspector.

**NOTE: This limitation is applicable to any turbojet/turbofan powered aircraft or an aircraft with a maximum takeoff weight exceeding 12,500 pounds, or any other aircraft when deemed necessary. Flight Standards inspectors should refer to Order 8700.1 for further guidance.**

(18) The pilot in command of this aircraft shall hold a category/class rating, or an authorized instructor's logbook endorsement. The pilot in command 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 14 CFR § 61.31(k)).**

(19) After incorporating a major change as described in § 21.93, the aircraft owner is required to re-establish compliance with § 91.319(b). All operations will be conducted VFR, day only, in a sparsely populated area. The aircraft must remain in flight test for a minimum of 5 hours. Persons non-essential to the flight shall not be carried. The aircraft owner shall make a detailed log book entry describing the change prior to the test flight. Following satisfactory completion of the required number of flight hours in the flight test area, the pilot shall certify in the records that the aircraft has been shown to comply with § 91.319(b). Compliance with § 91.319(b) shall 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  $V_{so}$ \_\_\_\_\_,  $V_x$ \_\_\_\_\_, and  $V_y$ \_\_\_\_\_, and the weight\_\_\_\_\_, and CG location\_\_\_\_\_ at which they were obtained."**

(20) This aircraft shall 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 of the International Civil Aviation Organization (ICAO). The owner/operator of this aircraft must obtain written permission from another country's Civil Aviation Authority (CAA) prior to 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 shall 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 found to be in a condition for safe operation. This inspection will be recorded in the aircraft maintenance records.

(23) Condition inspections shall be recorded in the aircraft 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 found to be in a condition for safe operation."** The entry will include the aircraft total time in service, 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 shall not be operated unless it is inspected and maintained per an inspection program selected, established, identified, and used as set forth in § 91.409(e), (f), (g), and (h). This inspection shall be recorded in the aircraft maintenance records.

(25) Inspections shall be recorded in the aircraft 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 (insert date) and found to be in a condition for safe operation."** The entry will include the aircraft 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 shall 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 shall be listed in the remarks section of the flight plan.

**135. RESERVED.**

(18) Only FAA-certificated mechanics with appropriate ratings as authorized by § 43.3 may perform inspections required by these operating limitations.

**(Applicability: All)**

(19) The cognizant FSDO must be notified, and its response received in writing, prior to flying this aircraft after incorporation of a major change as defined by § 21.93.

**(Applicability: All)**

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

**(Applicability: All)**

(21) This aircraft shall contain the placards, markings, etc., required by § 91.9.

**(Applicability: All)**

(22) The pilot in command of this aircraft must hold an appropriate category/class rating. If required for the type of aircraft to be flown, the pilot in command must also hold either an appropriate type rating or a letter of authorization issued by an FAA Flight Standards Operations Inspector.

**(Applicability: Group II, Group III 800 hp and 250 knots, Vne and above, or more than 12,500 pounds, Group IV turbojet, or more than 12,500 pounds)**

**NOTE: A letter of authorization is issued in accordance with the procedures described in Order 8700.1, volume 2, chapter 32, section 1 for all training and eligibility requirements. This operating limitation is not applicable to glider aircraft.**

(23) The pilot in command of this aircraft shall notify the air traffic control of the experimental nature of this aircraft when operating into or out of airports with operating control towers. The pilot in command shall plan routing that will avoid densely populated areas and congested airways when operating VFR.

**(Applicability: All)**

(24) The pilot in command of this aircraft should be knowledgeable of and utilize the procedures described in the Experimental Aircraft Association's "Jet Operations Manual" or other procedures acceptable to the Administrator.

**(Applicability: Group II, Group IV)**

(25) The ejection seat system must be maintained in accordance with the manufacturer's procedures and inspected in accordance with the FSDO-approved inspection program applicable to this aircraft. Additionally, the ejection seat system must be mechanically secured to prevent inadvertent operation of the system whenever the aircraft is parked or out of service.

**(As Applicable)**

(26) This aircraft is prohibited from flight with any externally mounted equipment unless the equipment is permanently mounted in a manner that will prevent in-flight jettison, and there is an entry in the aircraft records indicating flight testing has been accomplished with this equipment installed.

**(As Applicable)**

(27) Following satisfactory completion of the required number of flight hours in the flight test area, the pilot shall certify in the records that the aircraft has been shown to comply with § 91.319(b). Compliance with § 91.319(b) shall 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."** (Applicability: All)

(28) No person may operate this aircraft for other than the purpose(s) of (identify purpose(s)), to exhibit the aircraft, or participate in events outlined in (identify applicant) program letter (or any amendments) describing compliance with § 21.193(d). Additionally, this aircraft shall 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(e). These operating limitations are a part of the FAA Form 8130-7, Special Airworthiness Certificate, and are to be carried in the aircraft at all times for availability to the pilot.

**(Applicability: All)**

(29) All proficiency/practice flights shall be conducted within the geographical area described in the applicant's program letter and any amendments to that letter, but that area will not exceed 300 nautical miles of the aircraft's home base airport. An exception is permitted for proficiency flying outside of the area stated above for organized formation flying, training, or checkout in conjunction with a specific event listed in the applicant's program letter (or amendments). The program letter should indicate the location and dates for this proficiency flying.

**(Applicability: Group I, Group III under 800 hp)**

(30) All proficiency flights will be conducted in airspace with an operational radius of 600 nautical miles from the airport where the aircraft is based. (This radius can be reduced if requested by the operator.) Proficiency flights are limited to a non-stop flight that begins and ends at the airport where the aircraft is based. One alternate airport may be selected for each flight, within the operational radius of the airport where the aircraft is based. Other operations for organized formation flying, proficiency flying, or pilot checkout in conjunction with specific events will have to be listed in the applicant's program letter or notification will be sent to the cognizant FSDO, 48 hours PRIOR to the date of the actual event.

**(Applicability: Group II)**