



U.S. Department
of Transportation

**Federal Aviation
Administration**

Advisory Circular

**Subject: INSTALLATION OF USED
AIRCRAFT ENGINES IN NEW
PRODUCTION AIRCRAFT**

**Date: July 2, 2003
Initiated by: AIR-200**

**AC No. 21-19A
Change:**

1. PURPOSE. This advisory circular (AC) informs about the conditions in which used aircraft engines may be installed in new production aircraft. This AC provides an acceptable means, but not the only means, for compliance with Title 14 Code of Federal Regulations (14 CFR) part 21, Certification Procedures for Products and Parts (part 21).

2. CANCELLATION. AC 21-19, Installation of Used Engines in New Production Aircraft, dated April 26, 1982, is canceled.

3. RELATED DOCUMENTS.

- a. 14 CFR part 43, Maintenance, Preventive Maintenance, Rebuilding, and Alteration.
- b. 14 CFR part 91, General Operating and Flight Rules.
- c. AC 43-9, Maintenance Records.

4. DEFINITIONS.

a. Aircraft engine: an engine that is used or intended to be used for propelling aircraft. It includes turbo superchargers, appurtenances, and accessories necessary for its functioning, but does not include propellers. Refer to 14 CFR part 1, Definitions.

b. New production aircraft: a new aircraft manufactured under a production certificate or a type certificate only.

c. Newly overhauled: an engine that has not been operated or placed in service, except for functional testing, since having been overhauled, inspected, and approved for return to service in accordance with the applicable CFR. Refer to 14 CFR section 21.321.

d. Newly rebuilt: an engine that has not been operated or placed in service, except for functional testing, since having been rebuilt.

e. Rebuilt engine: a used engine that has been completely disassembled, inspected, repaired as necessary, reassembled, tested, and approved in the same manner and to the same tolerances and limits as a new engine with either new or used parts. However, all parts used in it must conform to the production drawing tolerances and limits for new parts or be of approved oversized or undersized dimensions for a new engine. Refer to 14 CFR section 91.421, Rebuilt engine maintenance records.

f. Used aircraft engine: an aircraft engine that has accumulated time in service, including a rebuilt engine.

5. FOCUS. This AC is directed to manufacturers producing aircraft under a production certificate or type certificate only.

6. DISCUSSION. As a manufacturer of new production aircraft, what should I do if:

a. I want to install a used aircraft engine?

(1) Include procedures on the installation of used aircraft engines in your quality control or inspection system established in accordance with 14 CFR sections 21.125 or 21.143.

(2) Verify the configuration of the used aircraft engine being installed, and that the engine is listed on the Type Certificate Data Sheet for the aircraft.

(3) Make sure that all ancillary installations that relate to the operation of the engine, and that are not part of the engine, conform to the type design for the aircraft and are in condition for safe operation. Such installations, if used, must have been maintained in accordance with 14 CFR part 43, Maintenance, Preventive Maintenance, Rebuilding, and Alteration.

(4) Verify that the aircraft with a used aircraft engine installed meets all of the production flight test parameters established in the type design and the approved production flight test procedures. If any of the production flight test parameters cannot be met because of the condition of a used aircraft engine, the aircraft is not eligible for a standard airworthiness certificate. The engine should be repaired or replaced with one that enables the aircraft to meet all flight test requirements applicable to a new production aircraft.

(5) Make sure that the maintenance records for the used aircraft engine, and, if applicable, the ancillary installations are in accordance with 14 CFR section 91.417 or 14 CFR parts 121 or 135 and satisfy the requirements of the applicable Instructions for Continued Airworthiness. Provide these records to the buyer of the aircraft, unless the buyer has furnished the engine for that aircraft. Information concerning maintenance records, including procedures to be used when records have been lost or destroyed, are in AC 43-9, Maintenance Records.

(6) Make sure that all applicable AD and service bulletin information are incorporated in the maintenance records. Also, verify the incorporation of all applicable airworthiness directives affecting the used aircraft engine in accordance with 14 CFR part 39, Airworthiness Directives.

b. The type design of the aircraft calls out an aircraft engine that is no longer in production?

You may purchase a used aircraft engine to meet production needs. This engine should be either newly overhauled or newly rebuilt. You should also follow the guidance provided in paragraph 6a above.

c. I am furnished with a used aircraft engine by the buyer of a new production aircraft for use in that aircraft? You may install that engine and you should also follow the guidance provided in paragraph 6a above.

d. I have an agreement with the buyer to furnish a new aircraft with a used aircraft engine until a new engine becomes available? You may install that engine and you should also follow the guidance provided in paragraph 6a above.

/S/

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