

Subpart A—General

§ 21.1 Applicability and definitions.

(a) Except for aircraft subject to the provisions of part 107 of this chapter, this part prescribes—

(1) Procedural requirements for issuing and changing—

- (i) Design approvals;
- (ii) Production approvals;
- (iii) Airworthiness certificates; and
- (iv) Airworthiness approvals;

(2) Rules governing applicants for, and holders of, any approval or certificate specified in paragraph (a)(1) of this section; and

(3) Procedural requirements for the approval of articles.

(b) For the purposes of this part—

(1) *Airworthiness approval* means a document, issued by the FAA for an aircraft, aircraft engine, propeller, or article, which certifies that the aircraft, aircraft engine, propeller, or article conforms to its approved design and is in a condition for safe operation, unless otherwise specified;

(2) *Article* means a material, part, component, process, or appliance;

(3) *Commercial part* means an article that is listed on an FAA-approved Commercial Parts List included in a design approval holder's Instructions for Continued Airworthiness required by § 21.50;

(4) *Design approval* means a type certificate (including amended and supplemental type certificates) or the approved design under a PMA, TSO authorization, letter of TSO design approval, or other approved design;

(5) *Interface component* means an article that serves as a functional interface between an aircraft and an aircraft engine, an aircraft engine and a propeller, or an aircraft and a propeller. An interface component is designated by the holder of the type certificate or the supplemental type certificate who controls the approved design data for that article;

(6) *Product* means an aircraft, aircraft engine, or propeller;

(7) *Production approval* means a document issued by the FAA to a person that allows the production of a product or article in accordance with its approved design and approved quality system, and can take the form of a pro-

duction certificate, a PMA, or a TSO authorization;

(8) *State of Design* means the country or jurisdiction having regulatory authority over the organization responsible for the design and continued airworthiness of a civil aeronautical product or article;

(9) *State of Manufacture* means the country or jurisdiction having regulatory authority over the organization responsible for the production and airworthiness of a civil aeronautical product or article.

(10) *Supplier* means a person at any tier in the supply chain who provides a product, article, or service that is used or consumed in the design or manufacture of, or installed on, a product or article.

[Doc. No. FAA–2006–25877, Amdt. 21–92, 74 FR 53384, Oct. 16, 2009; Doc. No. FAA–2013–0933, Amdt. 21–98, 80 FR 59031, Oct. 1, 2015; Amdt. 21–98A, 80 FR 59031, Dec. 17, 2015; Docket FAA–2015–0150, Amdt. 21–99, 81 FR 42207, June 28, 2016]

§ 21.2 Falsification of applications, reports, or records.

(a) A person may not make or cause to be made—

(1) Any fraudulent, intentionally false, or misleading statement on any application for a certificate or approval under this part;

(2) Any fraudulent, intentionally false, or misleading statement in any record or report that is kept, made, or used to show compliance with any requirement of this part;

(3) Any reproduction for a fraudulent purpose of any certificate or approval issued under this part.

(4) Any alteration of any certificate or approval issued under this part.

(b) The commission by any person of an act prohibited under paragraph (a) of this section is a basis for—

(1) Denying issuance of any certificate or approval under this part; and

(2) Suspending or revoking any certificate or approval issued under this part and held by that person.

[Doc. No. 23345, 57 FR 41367, Sept. 9, 1992, as amended by Amdt. 21–92, 74 FR 53384, Oct. 16, 2009; Amdt. 21–92A, 75 FR 9095, Mar. 1, 2010]

§ 21.3 Reporting of failures, malfunctions, and defects.

(a) The holder of a type certificate (including amended or supplemental type certificates), a PMA, or a TSO authorization, or the licensee of a type certificate must report any failure, malfunction, or defect in any product or article manufactured by it that it determines has resulted in any of the occurrences listed in paragraph (c) of this section.

(b) The holder of a type certificate (including amended or supplemental type certificates), a PMA, or a TSO authorization, or the licensee of a type certificate must report any defect in any product or article manufactured by it that has left its quality system and that it determines could result in any of the occurrences listed in paragraph (c) of this section.

(c) The following occurrences must be reported as provided in paragraphs (a) and (b) of this section:

(1) Fires caused by a system or equipment failure, malfunction, or defect.

(2) An engine exhaust system failure, malfunction, or defect which causes damage to the engine, adjacent aircraft structure, equipment, or components.

(3) The accumulation or circulation of toxic or noxious gases in the crew compartment or passenger cabin.

(4) A malfunction, failure, or defect of a propeller control system.

(5) A propeller or rotorcraft hub or blade structural failure.

(6) Flammable fluid leakage in areas where an ignition source normally exists.

(7) A brake system failure caused by structural or material failure during operation.

(8) A significant aircraft primary structural defect or failure caused by any autogenous condition (fatigue, understrength, corrosion, etc.).

(9) Any abnormal vibration or buffeting caused by a structural or system malfunction, defect, or failure.

(10) An engine failure.

(11) Any structural or flight control system malfunction, defect, or failure which causes an interference with normal control of the aircraft for which derogates the flying qualities.

(12) A complete loss of more than one electrical power generating system or

hydraulic power system during a given operation of the aircraft.

(13) A failure or malfunction of more than one attitude, airspeed, or altitude instrument during a given operation of the aircraft.

(d) The requirements of paragraph (a) of this section do not apply to—

(1) Failures, malfunctions, or defects that the holder of a type certificate (including amended or supplemental type certificates), PMA, TSO authorization, or the licensee of a type certificate determines—

(i) Were caused by improper maintenance or use;

(ii) Were reported to the FAA by another person under this chapter; or

(iii) Were reported under the accident reporting provisions of 49 CFR part 830 of the regulations of the National Transportation Safety Board.

(2) Failures, malfunctions, or defects in products or articles—

(i) Manufactured by a foreign manufacturer under a U.S. type certificate issued under § 21.29 or under an approval issued under § 21.621; or

(ii) Exported to the United States under § 21.502.

(e) Each report required by this section—

(1) Must be made to the Aircraft Certification Office in the region in which the person required to make the report is located within 24 hours after it has determined that the failure, malfunction, or defect required to be reported has occurred. However, a report that is due on a Saturday or a Sunday may be delivered on the following Monday and one that is due on a holiday may be delivered on the next workday;

(2) Must be transmitted in a manner and form acceptable to the FAA and by the most expeditious method available; and

(3) Must include as much of the following information as is available and applicable:

(i) The applicable product and article identification information required by part 45 of this chapter;

(ii) Identification of the system involved; and

(iii) Nature of the failure, malfunction, or defect.

(f) If an accident investigation or service difficulty report shows that a

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product or article manufactured under this part is unsafe because of a manufacturing or design data defect, the holder of the production approval for that product or article must, upon request of the FAA, report to the FAA the results of its investigation and any action taken or proposed by the holder of that production approval to correct that defect. If action is required to correct the defect in an existing product or article, the holder of that production approval must send the data necessary for issuing an appropriate airworthiness directive to the appropriate aircraft certification office.

[Amdt. 21-36, 35 FR 18187, Nov. 28, 1970, as amended by Amdt. 21-37, 35 FR 18450, Dec. 4, 1970; Amdt. 21-50, 45 FR 38346, June 9, 1980; Amdt. 21-67, 54 FR 39291, Sept. 25, 1989; Amdt. 21-92, 74 FR 53385, Oct. 16, 2009]

§21.4 ETOPS reporting requirements.

(a) *Early ETOPS: reporting, tracking, and resolving problems.* The holder of a type certificate for an airplane-engine combination approved using the Early ETOPS method specified in part 25, Appendix K, of this chapter must use a system for reporting, tracking, and resolving each problem resulting in one of the occurrences specified in paragraph (a)(6) of this section.

(1) The system must identify how the type certificate holder will promptly identify problems, report them to the

responsible FAA aircraft certification office, and propose a solution to the FAA to resolve each problem. A proposed solution must consist of—

- (i) A change in the airplane or engine type design;
- (ii) A change in a manufacturing process;
- (iii) A change in an operating or maintenance procedure; or
- (iv) Any other solution acceptable to the FAA.

(2) For an airplane with more than two engines, the system must be in place for the first 250,000 world fleet engine-hours for the approved airplane-engine combination.

(3) For two-engine airplanes, the system must be in place for the first 250,000 world fleet engine-hours for the approved airplane-engine combination and after that until—

- (i) The world fleet 12-month rolling average IFSD rate is at or below the rate required by paragraph (b)(2) of this section; and
- (ii) The FAA determines that the rate is stable.

(4) For an airplane-engine combination that is a derivative of an airplane-engine combination previously approved for ETOPS, the system need only address those problems specified in the following table, provided the type certificate holder obtains prior authorization from the FAA:

If the change does not require a new airplane type certificate and . . .	Then the Problem Tracking and Resolution System must address . . .
(i) Requires a new engine type certificate	All problems applicable to the new engine installation, and for the remainder of the airplane, problems in changed systems only.
(ii) Does not require a new engine type certificate	Problems in changed systems only.

(5) The type certificate holder must identify the sources and content of data that it will use for its system. The data must be adequate to evaluate the specific cause of any in-service problem reportable under this section or §21.3(c) that could affect the safety of ETOPS.

(6) In implementing this system, the type certificate holder must report the following occurrences:

- (i) IFSDs, except planned IFSDs performed for flight training.
- (ii) For two-engine airplanes, IFSD rates.

(iii) Inability to control an engine or obtain desired thrust or power.

(iv) Precautionary thrust or power reductions.

(v) Degraded ability to start an engine in flight.

(vi) Inadvertent fuel loss or unavailability, or uncorrectable fuel imbalance in flight.

(vii) Turn backs or diversions for failures, malfunctions, or defects associated with an ETOPS group 1 significant system.

(viii) Loss of any power source for an ETOPS group 1 significant system, including any power source designed to provide backup power for that system.

(ix) Any event that would jeopardize the safe flight and landing of the airplane on an ETOPS flight.

(x) Any unscheduled engine removal for a condition that could result in one of the reportable occurrences listed in this paragraph.

(b) *Reliability of two-engine airplanes—*
 (1) *Reporting of two-engine airplane in-service reliability.* The holder of a type certificate for an airplane approved for ETOPS and the holder of a type certificate for an engine installed on an airplane approved for ETOPS must report monthly to their respective FAA type certificate holding office on the reliability of the world fleet of those airplanes and engines. The report provided by both the airplane and engine type certificate holders must address each airplane-engine combination approved for ETOPS. The FAA may approve quarterly reporting if the airplane-engine combination demonstrates an IFSD rate at or below those specified in paragraph (b)(2) of this section for a period acceptable to the FAA. This reporting may be combined with the reporting required by § 21.3. The responsible type certificate holder must investigate any cause of an IFSD resulting from an occurrence attributable to the design of its product and report the results of that investigation to its FAA office responsible for administering its type certificate. Reporting must include:

(i) Engine IFSDs, except planned IFSDs performed for flight training.

(ii) The world fleet 12-month rolling average IFSD rates for all causes, except planned IFSDs performed for flight training.

(iii) ETOPS fleet utilization, including a list of operators, their ETOPS diversion time authority, flight hours, and cycles.

(2) *World fleet IFSD rate for two-engine airplanes.* The holder of a type certificate for an airplane approved for ETOPS and the holder of a type certificate for an engine installed on an airplane approved for ETOPS must issue service information to the operators of those airplanes and engines, as appro-

priate, to maintain the world fleet 12-month rolling average IFSD rate at or below the following levels:

(i) A rate of 0.05 per 1,000 world-fleet engine-hours for an airplane-engine combination approved for up to and including 120-minute ETOPS. When all ETOPS operators have complied with the corrective actions required in the configuration, maintenance and procedures (CMP) document as a condition for ETOPS approval, the rate to be maintained is at or below 0.02 per 1,000 world-fleet engine-hours.

(ii) A rate of 0.02 per 1,000 world-fleet engine-hours for an airplane-engine combination approved for up to and including 180-minute ETOPS, including airplane-engine combinations approved for 207-minute ETOPS in the North Pacific operating area under appendix P, section I, paragraph (h), of part 121 of this chapter.

(iii) A rate of 0.01 per 1,000 world-fleet engine-hours for an airplane-engine combination approved for ETOPS beyond 180 minutes, excluding airplane-engine combinations approved for 207-minute ETOPS in the North Pacific operating area under appendix P, section I, paragraph (h), of part 121 of this chapter.

[Doc. No. FAA-2002-6717, 72 FR 1872, Jan. 16, 2007]

§ 21.5 Airplane or Rotorcraft Flight Manual.

(a) With each airplane or rotorcraft not type certificated with an Airplane or Rotorcraft Flight Manual and having no flight time before March 1, 1979, the holder of a type certificate (including amended or supplemental type certificates) or the licensee of a type certificate must make available to the owner at the time of delivery of the aircraft a current approved Airplane or Rotorcraft Flight Manual.

(b) The Airplane or Rotorcraft Flight Manual required by paragraph (a) of this section must contain the following information:

(1) The operating limitations and information required to be furnished in an Airplane or Rotorcraft Flight Manual or in manual material, markings, and placards, by the applicable regulations under which the airplane or rotorcraft was type certificated.

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(2) The maximum ambient atmospheric temperature for which engine cooling was demonstrated must be stated in the performance information section of the Flight Manual, if the applicable regulations under which the aircraft was type certificated do not require ambient temperature on engine cooling operating limitations in the Flight Manual.

[Amdt. 21-46, 43 FR 2316, Jan. 16, 1978, as amended by Amdt. 21-92, 74 FR 53385, Oct. 16, 2009]

§ 21.6 Manufacture of new aircraft, aircraft engines, and propellers.

(a) Except as specified in paragraphs (b) and (c) of this section, no person may manufacture a new aircraft, aircraft engine, or propeller based on a type certificate unless the person—

(1) Is the holder of the type certificate or has a licensing agreement from the holder of the type certificate to manufacture the product; and

(2) Meets the requirements of subpart F or G of this part.

(b) A person may manufacture one new aircraft based on a type certificate without meeting the requirements of paragraph (a) of this section if that person can provide evidence acceptable to the FAA that the manufacture of the aircraft by that person began before August 5, 2004.

(c) The requirements of this section do not apply to—

(1) New aircraft imported under the provisions of §§ 21.183(c), 21.184(b), or 21.185(c); and

(2) New aircraft engines or propellers imported under the provisions of § 21.500.

[Doc. No. FAA-2003-14825, 71 FR 52258, Sept. 1, 2006]

§ 21.7 Continued airworthiness and safety improvements for transport category airplanes.

(a) On or after December 10, 2007, the holder of a design approval and an applicant for a design approval must comply with the applicable continued airworthiness and safety improvement requirements of part 26 of this subchapter.

(b) For new transport category airplanes manufactured under the authority of the FAA, the holder or licensee

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of a type certificate must meet the applicable continued airworthiness and safety improvement requirements specified in part 26 of this subchapter for new production airplanes. Those requirements only apply if the FAA has jurisdiction over the organization responsible for final assembly of the airplane.

[Doc. No. FAA-2004-18379, Amdt. 21-90, 72 FR 63404, Nov. 8, 2007]

§ 21.8 Approval of articles.

If an article is required to be approved under this chapter, it may be approved—

(a) Under a PMA;

(b) Under a TSO;

(c) In conjunction with type certification procedures for a product; or

(d) In any other manner approved by the FAA.

[Doc. No. FAA-2006-5877, Amdt. 21-92, 74 FR 53385, Oct. 16, 2009]

§ 21.9 Replacement and modification articles.

(a) If a person knows, or should know, that a replacement or modification article is reasonably likely to be installed on a type-certificated product, the person may not produce that article unless it is—

(1) Produced under a type certificate;

(2) Produced under an FAA production approval;

(3) A standard part (such as a nut or bolt) manufactured in compliance with a government or established industry specification;

(4) A commercial part as defined in § 21.1 of this part;

(5) Produced by an owner or operator for maintaining or altering that owner or operator's product; or

(6) Fabricated by an appropriately rated certificate holder with a quality system, and consumed in the repair or alteration of a product or article in accordance with part 43 of this chapter.

(b) Except as provided in paragraphs (a)(1) through (a)(2) of this section, a person who produces a replacement or modification article for sale may not represent that part as suitable for installation on a type-certificated product.

(c) Except as provided in paragraphs (a)(1) through (a)(2) of this section, a

person may not sell or represent an article as suitable for installation on an aircraft type-certificated under §§21.25(a)(2) or 21.27 unless that article—

(1) Was declared surplus by the U.S. Armed Forces, and

(2) Was intended for use on that aircraft model by the U.S. Armed Forces.

[Doc. No. FAA-2006-25877, Amdt. 21-92, 74 FR 53385, Oct. 16, 2009; Amdt. 21-92A, 75 FR 9095, Mar. 1, 2010]

EFFECTIVE DATE NOTE: At 81 FR 96688, Dec. 30, 2016, §21.9 was amended by revising paragraphs (a)(5), (a)(6), and adding paragraph (a)(7), effective Aug. 30, 2017. For the convenience of the user, the added and revised text is set forth as follows:

§21.9 Replacement and modification articles.

(a) * * *

(5) Produced by an owner or operator for maintaining or altering that owner or operator's product;

(6) Fabricated by an appropriately rated certificate holder with a quality system, and consumed in the repair or alteration of a product or article in accordance with part 43 of this chapter; or

(7) Produced in any other manner approved by the FAA.

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Subpart B—Type Certificates

SOURCE: Docket No. 5085, 29 FR 14564, Oct. 24, 1964, unless otherwise noted.

§21.11 Applicability.

This subpart prescribes—

(a) Procedural requirements for the issue of type certificates for aircraft, aircraft engines, and propellers; and

(b) Rules governing the holders of those certificates.

§21.13 Eligibility.

Any interested person may apply for a type certificate.

[Amdt. 21-25, 34 FR 14068, Sept. 5, 1969]

§21.15 Application for type certificate.

(a) An application for a type certificate is made on a form and in a manner prescribed by the FAA and is submitted to the appropriate aircraft certification office.

(b) An application for an aircraft type certificate must be accompanied by a three-view drawing of that aircraft and available preliminary basic data.

(c) An application for an aircraft engine type certificate must be accompanied by a description of the engine design features, the engine operating characteristics, and the proposed engine operating limitations.

[Doc. No. 5085, 29 FR 14564, Oct. 24, 1964, as amended by Amdt. 21-40, 39 FR 35459, Oct. 1, 1974; Amdt. 21-67, 54 FR 39291, Sept. 25, 1989; Amdt. 21-92, 74 FR 53385, Oct. 16, 2009]

§21.16 Special conditions.

If the FAA finds that the airworthiness regulations of this subchapter do not contain adequate or appropriate safety standards for an aircraft, aircraft engine, or propeller because of a novel or unusual design feature of the aircraft, aircraft engine or propeller, he prescribes special conditions and amendments thereto for the product. The special conditions are issued in accordance with Part 11 of this chapter and contain such safety standards for the aircraft, aircraft engine or propeller as the FAA finds necessary to establish a level of safety equivalent to that established in the regulations.

[Amdt. 21-19, 32 FR 17851, Dec. 13, 1967, as amended by Amdt. 21-51, 45 FR 60170, Sept. 11, 1980]

§21.17 Designation of applicable regulations.

(a) Except as provided in §§23.2, 25.2, 27.2, 29.2, and in parts 26, 34 and 36 of this subchapter, an applicant for a type certificate must show that the aircraft, aircraft engine, or propeller concerned meets—

(1) The applicable requirements of this subchapter that are effective on the date of application for that certificate unless—

(i) Otherwise specified by the FAA; or

(ii) Compliance with later effective amendments is elected or required under this section; and

(2) Any special conditions prescribed by the FAA.

(b) For special classes of aircraft, including the engines and propellers installed thereon (e.g., gliders, airships, and other nonconventional aircraft),