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Standard Practice for Application of Federal Aviation Administration (FAA) Federal Aviation Regulations Part 21 Requirements to Unmanned Aircraft Systems (UAS)[1]

This standard is issued under the fixed designation F 2505; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

INTRODUCTION

STRUCTURE AND ASSUMPTIONS

Introduction—This standard practice (SP) document uses 14 CFR Part 21 as a template, retaining all sections of Part 21, many of which will not be altered by the incorporation of certification procedures for Unmanned Aircraft Systems (UAS). The UAS certification procedures that have been inserted into the Part 21 template may, therefore, be seen in the context of procedures prescribed for other civil air vehicles that undergo airworthiness certification. The resulting document is perhaps misnamed as a "standard practice" since it is, in fact, a prototype for a future version of Part 21 that will accommodate UAS airworthiness certification. Anticipating this future version of Part 21, the SP provides a framework for other ASTM standards development and standard-practice initiatives related to UAS certification.

Scope of Changes to Part 21 Text—This version of the SP provides certification procedures for unmanned aircraft systems in the light UAS class and in the Remotely Operated Aircraft (ROA/UAS) Class. Unmanned aircraft systems in the mini UAS and micro UAS Classes are not considered in this SP.

Certification Pathways—The SP anticipates that light UAS and the larger ROA/UAS will follow distinctly different certification procedural pathways:

• Light UAS will be certified to consensus standards, in a process similar to that established for light sport aircraft in the current Part 21 (section 21.190). This process will lead to issue of a special certificate of airworthiness for the light UAS; and

• ROA/UAS will follow a conventional certification pathway described in Part 21, section 21.17(a), leading to issue of a type certificate as described in Part 21, section 21.21, and issue of a standard certificate of airworthiness under Part 21, section 21.183.

Applicable Requirements—The SP anticipates that the core requirements for the basis of certification for the light UAS and ROA/UAS classes will be based on published design/airworthiness standards that do not yet exist, specifically:

• Industry consensus standards for light UAS, prescribing airworthiness requirements for the issue of a Special Certificate of Airworthiness for the smaller UAS; and

• Regulator-approved Airworthiness Standards prescribing airworthiness requirements for the issue of type certificates and changes to type certificates for ROA/UAS UAS.

Special-Classes Certification Pathway—The SP retains the Part 21 concept of special classes aircraft, that is, "non-conventional aircraft for which airworthiness standards have not been issued under this Subchapter (14 CFR Subchapter C)." UAS fit well within this definition of the special classes, quoted here from Part 21, section 21.17(b); furthermore, the means for defining the "applicable requirements" for a UAS basis of certification are clearly stated in section 21.17(b). Use of this pathway for the early UAS certification candidates should be considered.

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1. Scope

1.1 In this practice, certification procedures are provided for Unmanned Aircraft Systems (UAS) in the Light UAS Class and in the Remotely Operated Aircraft (ROA) UAS Classes. Unmanned Aircraft Systems in the Mini UAS and Micro UAS Classes are not considered in this practice, since they do not undergo airworthiness certification.

1.2 *Citations of Federal Aviation Regulations*—When citing U.S. Federal Aviation Regulations in this practice, the citation references are based on the following Federal Aviation Regulation structure:

1.2.1 The Code of Federal Regulations, Title 14 (14 CFR) comprises Aeronautics and Space Regulations. Chapter 1 of 14 CFR contains the regulations of the Federal Aviation Administration and is subdivided into subchapters and parts:

Subchapter A: Definitions	Part 1
Subchapter B: Procedural Rules	Parts 11–17
Subchapter C: Aircraft	Parts 21–49
Subchapter D: Airmen	Parts 60–67
Subchapter E: Airspace	Parts 71–77
Subchapter F: Air Traffic and General Operating Rules	Parts 91–105
Subchapter G: Air Carriers and Operators	Parts 119–139

1.2.1.1 The Parts are further subdivided into Subparts and sections.

1.2.2 This practice uses Part 21 as a template. Within the text of the practice:

1.2.2.1 14 CFR Chapter 1 means the whole of Chapter 1 of 14 CFR; and

1.2.2.2 Subchapter C means all of the Parts of Subchapter C of 14 CFR.

1.2.3 In compact notation, citation of section 1309 of Part 23, for example, may be designated as "section 23.1309."

1.3 *Unmanned Aircraft Systems*—An Unmanned Aircraft System (UAS) comprises an unmanned air vehicle, the remote control ground station that provides for the mission management and piloting of the air vehicle, data-links for the exchange of control and sensor payload data and all related interfaces. Any part of the overall system that could affect the airworthiness and safety of the aircraft is subject to the requirements of Part 21.

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Significance and Use

2.1 This practice is intended for guidance and instruction of the aircraft and unmanned aircraft systems industries when addressing the requirements of Part 21.

3. Subpart A—General

3.1 *Scope*—This practice prescribes *(21.1(a))*[2]:

3.1.1 Procedural requirements for the issue of type certificates and changes to those certificates, the issue of production certificates, the issue of airworthiness certificates, and the issue of export airworthiness approvals *(21.1(a)(1))*;

3.1.2 Rules governing the holders of any certificate specified in 3.1.1 *(21.1(a)(2))*; and

3.1.3 Procedural requirements for the approval of certain materials, parts, processes, and appliances *(21.1(a)(3))*.

3.2 *Products*—For the purposes of this practice, the word "product" means an aircraft, an unmanned aircraft system, an aircraft engine, or propeller. In addition, for the purposes of Subpart L only, it includes components and parts of aircraft, of unmanned aircraft systems, of aircraft engines, and of propellers and also parts, materials, and appliances approved under the Technical Standard Order system *(21.1(b))*.

3.3 *Airplanes or Rotorcraft Flight Manual*—With each airplane or rotorcraft that was not type certificated with an airplane or rotorcraft flight manual and that has had no flight time before March 1, 1979, the holder of a type certificate (including a supplemental type certificate) or the licensee of a type certificate shall make available to the owner at the time of delivery of the aircraft a current approved airplane or rotorcraft flight manual *(21.5(a))*.

3.4 The airplane or rotorcraft flight manual required by 3.3 must contain the following information *(21.5(b))*:

3.4.1 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 *(21.5(b)(1))*.

3.4.2 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 *(21.5(b)(2))*.

4. Subpart B—Type Certificates

4.1 *Applicability*—This Subpart prescribes *(21.11)*:

4.1.1 Procedural requirements for the issue of type certificates for aircraft, unmanned aircraft systems, aircraft engines, and propellers *(21.11(a))*, and

4.1.2 Rules governing the holders of those certificates *(21.11(b))*.

4.2 *Eligibility*—Any interested person may apply for a type certificate *(21.13)*.

4.3 *Application for Type Certificate (21.15)*:

4.3.1 An application for a type certificate is made on a form and in a manner prescribed by the FAA Administrator and is submitted to the appropriate Aircraft Certification Office *(21.15(a))*.

4.3.2 An application for an aircraft or an unmanned aircraft system type certificate must be accompanied by a three-view

[1] This practice is under the jurisdiction of ASTM Committee F38 on Unmanned Aircraft Systems and is the direct responsibility of Subcommittee F38.01 on Airworthiness.

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[2] Items at the end of each section enclosed in parentheses are identifying the applicable FAR Part 21 paragraph.

drawing of that aircraft or unmanned aircraft system and available preliminary basic data *(21.15(b))*.

4.3.3 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 *(21.15(c))*.

4.4 *Special Conditions*—If the Administrator finds that the airworthiness regulations of Subchapter C do not contain adequate or appropriate safety standards for an aircraft, unmanned aircraft system, aircraft engine, or propeller because of a novel or unusual design feature of the aircraft, unmanned aircraft system, aircraft engine, or propeller, he/she prescribes special conditions and amendments for the product. The special conditions are issued in accordance with Part 11 and contain such safety standards for the aircraft, unmanned aircraft system, aircraft engine, or propeller as the Administrator finds necessary to establish a level of safety equivalent to that established in the regulations *(21.16)*.

4.5 *Designation of Applicable Regulations (21.17)*:

4.5.1 Except as provided in Sections 23.2, 25.2, 27.2, 29.2 and in Parts 34 and 36, an applicant for a type certificate must show that the aircraft, unmanned aircraft system, aircraft engine, or propeller concerned meets *(21.17(a))*:

4.5.1.1 The applicable requirements of Subchapter C that are effective on the date of application for that certificate unless *(21.17(a)(1))*:

(1) Otherwise specified by the FAA Administrator *(21.17(a)(1)(i))*, or

(2) Compliance with later effective amendments is elected or required under 4.5 *(21.17(a)(1)(ii))*, and

(3) Any special conditions prescribed by the FAA Administrator *(21.17(a)(2))*.

4.5.2 For special classes of aircraft, including the engines and propellers installed (for example, gliders, airships, and other no conventional aircraft) for which airworthiness standards have not been issued under Subchapter C, the applicable requirements will be the portions of those other airworthiness requirements contained in Parts 23, 25, 27, 29, 31, 33, and 35 found by the FAA Administrator to be appropriate for the aircraft and applicable to a specific type design or such airworthiness criteria as the Administrator may find provides an equivalent level of safety to those parts *(21.17(b))*.

4.5.3 An application for type certification of a transport category aircraft is effective for five years and an application for any other type certificate is effective for 3 years unless an applicant shows at the time of application that his product requires a longer period of time for design, development, and testing and the FAA Administrator approves a longer period *(21.17(c))*.

4.5.4 In a case in which a type certificate has not been issued, or it is clear that a type certificate will not be issued within the time limit established under 4.5.3, the applicant may *(21.17(d))*:

4.5.4.1 File a new application for a type certificate and comply with all the provisions of 4.5.1 applicable to an original application *(21.17(d)(1)*, or

4.5.4.2 File for an extension of the original application and comply with the applicable airworthiness requirements of Subchapter C that were effective on a date to be selected by the applicant not earlier than the date that precedes the date of issue of the type certificate by the time limit established under 4.5.3 for the original application *(21.17(d)(2))*.

4.5.5 If an applicant elects to comply with an amendment to Subchapter C that is effective after the filing of the application for a type certificate, he must also comply with any other amendment that the Administrator finds is directly related *(21.17(e))*.

4.5.6 For primary category aircraft, the requirements are *(21.17(f))*:

4.5.6.1 The applicable airworthiness requirements contained in Parts 23, 27, 31, 33 and 35, or such other airworthiness criteria as the FAA Administrator may find appropriate and applicable to the specific design and intended use and provide a level of safety acceptable to the Administrator *(21.17(f)(1))*.

4.5.6.2 The noise standards of Part 36 applicable to primary category aircraft *(21.17(f)(2))*.

4.6 *Changes Requiring a New Type Certificate*—Each person who proposes to change a product must apply for a new type certificate if the Administrator finds that the proposed change in design, power, thrust, or weight is so extensive that a substantially complete investigation of compliance with the applicable regulations is required *(21.19)*.

4.7 *Issue of Type Certificate: Normal, Utility, Acrobatic, Commuter, and Transport Category aircraft; Unmanned Aircraft Systems; Manned Free Balloons; Special Classes of Aircraft; Aircraft Engines; and Propellers*—An applicant is entitled to a type certificate for an aircraft in the normal, utility, acrobatic, commuter, transport or unmanned aircraft system category, a manned free balloon, special classes of aircraft, or an aircraft engine or propeller, if *(21.21)*:

4.7.1 The product qualifies under 4.11 *(21.21(a))*, or

4.7.2 The applicant submits the type design, test reports, and computations necessary to show that the product to be certificated meets the applicable airworthiness, aircraft noise, fuel venting, and exhaust emission requirements of the Federal Aviation Regulations and any special conditions prescribed by the FAA Administrator, and the Administrator finds *(21.21(b))*:

(1) Upon examination of the type design, and after completing all tests and inspections that the type design and the product meet the applicable noise, fuel venting, and emissions requirements of the Federal Aviation Regulations, and further finds that they meet the applicable airworthiness requirements of the Federal Aviation Regulations or that any airworthiness provisions not complied with are compensated for by factors that provide an equivalent level of safety *(21.21(b)(1))*, and

(2) For an aircraft or an unmanned aircraft system, that no feature or characteristic makes it unsafe for the category or class in which certification is requested *(21.21(b)(2))*.

4.8 *Reserved*—Intentionally left as reserved to correlate to the FAR Structure *(21.23)*.

4.9 *Issuance of Type Certificate: Primary Category Aircraft (21.24)*:

4.9.1 The applicant is entitled to a type certificate for an aircraft in the primary category if *(21.24(a))*:

4.9.1.1 The aircraft *(21.24(a)(1))*:

(1) Is unpowered; is an airplane powered by a single, naturally aspirated engine with a 61-knot (3 m/s) or less V_{so} stall speed as defined in section 23.49; or is a rotorcraft with a 6-lbf/ft^2 (287-Pa) main rotor disk loading limitation, under sea level standard day conditions *(21.24(a)(1)(i))*;

(2) Weighs not more than 2700 lb (1225 kg) or for seaplanes, not more than 3375 lb (1531 kg) *(21.24(a)(1)(ii))*;

(3) Has a maximum seating capacity of not more than four persons, including the pilot *(21.24(a)(1)(iii))*; and

(4) Has an unpressurized cabin *(21.24(a)(1)(iv))*.

4.9.1.2 The applicant has submitted *(21.24(a)(2)*:

(1) Except as provided by 4.9.3, a statement in a form and manner acceptable to the FAA Administrator certifying that the applicant has completed the engineering analysis necessary to demonstrate compliance with the applicable airworthiness requirements; the applicant has conducted appropriate flight, structural, propulsion, and systems tests necessary to show that the aircraft, its components, and its equipment are reliable and function properly; the type design complies with the airworthiness standards and noise requirements established for the aircraft under 4.5.6 and no feature or characteristic makes it unsafe for its intended use *(21.24(a)(2)(i))*;

(2) The flight manual required by 3.1.2, including any information required to be furnished by the applicable airworthiness standards *(21.24(a)(2)(ii))*;

(3) Instructions for continued airworthiness in accordance with 4.23.2 *(21.24(a)(2)(iii))*; and

(4) A report that summarizes how compliance with each provision of the type certification basis was determined; lists the specific documents in which the type certification data information is provided; lists all necessary drawings and documents used to define the type design; and lists all the engineering reports on tests and computations that the applicant must retain and make available under 4.22 to substantiate compliance with the applicable airworthiness standards *(21.24(a)(2)(iv))*.

4.9.1.3 The FAA Administrator finds that *(21.24(a)(3))*:

(1) The aircraft complies with those applicable airworthiness requirements approved under 4.5.6 *(21.24(a)(3)(i))*, and

(2) The aircraft has no feature or characteristic that makes it unsafe for its intended use *(21.24(a)(3)(ii))*.

4.9.2 An applicant may include a special inspection and preventive maintenance program as part of the aircraft's type design or supplemental type design *(21.24(b))*.

4.9.3 For aircraft manufactured outside of the United States in a country with which the United States has a bilateral airworthiness agreement for the acceptance of these aircraft, and from which the aircraft is to be imported into the United States *(21.24(c))*:

4.9.3.1 The statement required by 4.9.1.2*(1)* must be made by the civil airworthiness authority of the exporting country *(21.24(c)(1))*, and

4.9.3.2 The required manuals, placards, listings, instrument markings, and documents required by 4.9.1 and 4.9.2 must be submitted in English *(21.24(c)(2))*.

4.10 *Issue of Type Certificate: Restricted Category Aircraft (21.25)*:

4.10.1 An applicant is entitled to a type certificate for an aircraft or unmanned aircraft system in the restricted category for special purpose operations if he shows compliance with the applicable noise requirements of Part 36 and if he shows that no feature or characteristic of the aircraft or unmanned aircraft system makes it unsafe when it is operated under the limitations prescribed for its intended use, and that the aircraft or unmanned aircraft system *(21.25(a))*:

4.10.1.1 Meets the airworthiness requirements of an aircraft or unmanned aircraft category except those requirements that the FAA Administrator finds inappropriate for the special purpose for which the aircraft or unmanned aircraft system is to be used *(21.25)(a)(1))*, or

4.10.1.2 Is of a type that has been manufactured in accordance with the requirements of and accepted for use by an Armed Force of the United States and has been later modified for a special purpose *(21.25(a)(2))*.

4.10.2 For the purposes of 4.10, "special purpose operations" includes *(21.25(b))*:

4.10.2.1 Agricultural (spraying, dusting, and seeding and livestock and predatory animal control) *(21.25(b)(1))*;

4.10.2.2 Forest and wildlife conservation *(21.25(b)(2))*;

4.10.2.3 Aerial surveying (photography, mapping, and oil and mineral exploration) *(21.25(b)(3))*;

4.10.2.4 Patrolling (pipelines, power lines, and canals) *(21.25(b)(4))*;

4.10.2.5 Weather control (cloud seeding) *(21.25(b)(5))*;

4.10.2.6 Aerial advertising (skywriting, banner towing, airborne signs and public address systems) *(21.25(b)(6))*; and

4.10.2.7 Any other operation specified by the FAA Administrator *(21.25(b)(7))*.

4.11 *Issue of Type Certificate: Surplus Aircraft of the Armed Forces (21.27)*:

4.11.1 Except as provided in 4.11.2, an applicant is entitled to a type certificate for an aircraft in the normal, utility, acrobatic, commuter, transport, or unmanned aircraft system category that was designed and constructed in the United States, accepted for operational use, and declared surplus by an Armed Force of the United States, and that is shown to comply with the applicable certification requirements in 4.11.6 *(21.27(a))*.

4.11.2 An applicant is entitled to a type certificate for a surplus aircraft or unmanned aircraft system of the Armed Forces of the United States that is a counterpart of a previously type certificated civil aircraft, if he shows compliance with the regulations governing the original civil aircraft or unmanned aircraft system type certificate *(21.27(b))*.

4.11.3 Aircraft engines, propellers, and their related accessories installed in surplus Armed Forces aircraft or unmanned aircraft system for which a type certificate is sought under 4.11, will be approved for use on those aircraft if the applicant shows that on the basis of the previous military qualifications, acceptance, and service record, the product provides substantially the same level of airworthiness as would be provided if the engines or propellers were type certificated under Parts 33 or 35 *(21.27(c))*.

4.11.4 The FAA Administrator may relieve an applicant from strict compliance with a specific provision of the applicable requirements in 4.11.6 if the Administrator finds that the method of compliance proposed by the applicant provides substantially the same level of airworthiness and that strict compliance with those regulations would impose a severe burden on the applicant. The Administrator may use experience that was satisfactory to an Armed Force of the United States in making such a determination *(21.27(d))*.

4.11.5 The FAA Administrator may require an applicant to comply with special conditions and later requirements than those in 4.11.3 and 4.11.6 if the Administrator finds that compliance with the listed regulations would not ensure an adequate level of airworthiness for the aircraft or unmanned aircraft system *(21.27(e))*.

4.11.6 Except as provided in 4.11.2-4.11.5, an applicant for a type certificate under 4.11 must comply with the appropriate regulations listed in Table 1 (see Table at Part 21, section 21.27(f)) *(21.27(f))*.

4.12 *Issue of Type Certificate–Import Products (21.29)*:

4.12.1 A type certificate may be issued for a product that is manufactured in a foreign country with which the United States has an agreement for the acceptance of these products for export and import and that is to be imported into the United States if *(21.29(a))*:

4.12.1.1 The country in which the product was manufactured certifies that the product has been examined, tested, and found to meet *(21.29(a)(1))*:

(1) The applicable aircraft or unmanned aircraft system noise, fuel venting, and exhaust emissions requirements of Subchapter C as designated in 4.5, or the applicable noise, fuel venting, and exhaust emissions requirements of the country in which the product was manufactured, and any other requirements the FAA Administrator may prescribe to provide noise, fuel venting, and exhaust emission levels no greater than those provided by the applicable noise, fuel venting, and exhaust emission requirements of Subchapter C as designated in 4.5 *(21.29(a)(1)(i))*; and

(2) The applicable airworthiness requirements of Subchapter C as designated in 4.5, or the applicable airworthiness requirements of the country in which the product was manufactured and any other requirements the FAA Administrator may prescribe to provide a level of safety equivalent to that provided by the applicable airworthiness requirements of Subchapter C as designated in 4.5 *(21.29(a)(1)(ii))* *(21.29(a)(1)(ii))*.

4.12.1.2 The applicant has submitted the technical data concerning aircraft or unmanned aircraft system noise and airworthiness, respecting the product required by the FAA Administrator *(21.29(a)(2))*; and

4.12.1.3 The manuals, placards, listings, and instrument markings required by the applicable airworthiness (and noise, where applicable) requirements are presented in the English language *(21.29(a)(3))*.

4.12.2 A product type certificated under 4.12 is considered to be type certificated under the noise standards of Part 36 and the fuel venting and exhaust emission standards of Part 34, where compliance therewith is certified under 4.12.1.1*(1)*, and under the airworthiness standards of that part of the Federal Aviation Regulations with which compliance is certified under 4.12.1.1*(2)*, or to which an equivalent level of safety is certified under 4.12.1.1*(2)* *(21.29(b))*.

4.13 *Type Design*—The type design consists of *(21.31)*:

4.13.1 The drawings and specifications and a listing of those drawings and specifications necessary to define the configuration and the design features of the product shown to comply with the requirements of that Part of Subchapter C applicable to the product *(21.31(a))*.

4.13.2 Information on dimensions, materials, and processes necessary to define the structural strength of the product *(21.31(b))*.

4.13.3 The Airworthiness Limitations section of the Instructions for Continued Airworthiness as required by Parts 23, 25, 27, 29, 31, 33, and 35 or as otherwise required by the FAA Administrator, and as specified in the applicable airworthiness criteria for unmanned aircraft systems and special classes of aircraft defined in 4.5.2 *(21.31(c))*.

4.13.4 If desired, for primary category aircraft, a special inspection and preventive maintenance program designed to be accomplished by an appropriately rated and trained pilot-owner *(21.31(d))*.

4.13.5 Any other data necessary to allow, by comparison, the determination of the airworthiness, noise characteristics, fuel venting, and exhaust emissions (where applicable) of later products of the same type *(21.31(e))*.

4.14 *Inspection and Tests (21.33)*:

4.14.1 Each applicant must allow the FAA Administrator to make any inspection and any flight and ground test necessary to determine compliance with the applicable requirements of the Federal Aviation Regulations. However, unless otherwise authorized by the FAA Administrator *(21.33(a))*:

4.14.1.1 No aircraft, unmanned aircraft system, aircraft engine, propeller, or part thereof may be presented to the Administrator for test unless compliance with 4.14.2.2-4.14.2.4 has been shown for that aircraft, unmanned aircraft system, aircraft engine, propeller, or part thereof *(21.33(a)(1))*; and

4.14.1.2 No change may be made to an aircraft, unmanned aircraft system, aircraft engine, propeller, or part thereof between the time that compliance with 4.14.2.2-4.14.2.4 is shown for that aircraft, unmanned aircraft system, aircraft engine, propeller, or part thereof and the time that it is presented to the FAA Administrator for test *(21.33(a)(2))*.

4.14.2 Each applicant must make all inspections and tests necessary to determine *(21.33(b))*:

4.14.2.1 Compliance with the applicable airworthiness, aircraft noise, fuel venting, and exhaust emission requirements *(21.33(b)(1))*;

4.14.2.2 That materials and products conform to the specifications in the type design *(21.33(b)(2))*;

4.14.2.3 That parts of the products conform to the drawings in the type design *(21.33(b)(3))*; and

4.14.2.4 That the manufacturing processes, construction, and assembly conform to those specified in the type design *(21.33(b)(4))*.

4.15 *Flight Tests (21.35)*:

4.15.1 Each applicant for an aircraft or unmanned aircraft system type certificate (other than under 4.9-4.12) must make the tests listed in 4.15.2. Before making the tests the applicant must show *(21.35(a))*:

4.15.1.1 Compliance with the applicable structural requirements of Subchapter C *(21.35(a)(1))*;

4.15.1.2 Completion of necessary ground inspections and tests *(21.35(a)(2))*;

4.15.1.3 That the aircraft or unmanned aircraft system conforms with the type design *(21.35(a)(3)*; and

4.15.1.4 That the FAA Administrator received a flight test report from the applicant (signed, in the case of aircraft to be certificated under Part 25, by the applicant's test pilot) containing the results of his tests *(21.35(a)(4))*.

4.15.2 Upon showing compliance with 4.15.1, the applicant must make all flight tests that the Administrator finds necessary *(21.35(b))*:

4.15.2.1 To determine compliance with the applicable requirements Subchapter C *(21.35(b)(1))*; and

4.15.2.2 For aircraft or unmanned aircraft systems to be certificated under Subchapter C, except gliders and airplanes of 6000 lb (2722 kg) or less maximum certificated weight that are to be certificated under Part 23, to determine whether there is reasonable assurance that the aircraft or unmanned aircraft system, its components, and its equipment are reliable and function properly *(21.35(b)(2))*.

4.15.3 Each applicant must, if practicable, make the tests prescribed in 4.15.2.2 upon the aircraft or unmanned aircraft system that was used to show compliance with *(21.35(c))*:

4.15.3.1 Section 4.15.2.1 *(21.35(c)(1))*; and

4.15.3.2 For rotorcraft or unmanned rotorcraft systems, the rotor drive endurance tests prescribed in sections 27.923, 29.923 or, equivalent rotor drive endurance tests prescribed by the unmanned rotorcraft system design standard, as applicable *(21.35(c)(2))*.

4.15.4 Each applicant must show for each flight test (except in a glider, a manned free balloon, or unmanned aircraft systems) that adequate provision is made for the flight test crew for emergency egress and the use of parachutes *(21.35(d))*.

4.15.5 Except in gliders and manned free balloons, an applicant must discontinue flight tests under this section until he shows that corrective action has been taken, whenever *(21.35(e))*:

4.15.5.1 The applicant's test pilot or for unmanned aircraft system, the remote control pilot, is unable or unwilling to make any of the required flight tests *(21.35(e)(1))*, or

4.15.5.2 Items of noncompliance with requirements are found that may make additional test data meaningless or that would make further testing unduly hazardous *(21.35(e)(2))*.

4.15.6 The flight tests prescribed in 4.15.2.2 must include *(21.35(f))*:

4.15.6.1 For aircraft or unmanned aircraft system incorporating turbine engines of a type not previously used in a type-certificated aircraft or unmanned aircraft system, at least 300 h of operation with a full complement of engines that conform to a type certificate *(21.35(f)(1))*, and

4.15.6.2 For all other aircraft and unmanned aircraft system, at least 150 h of operation *(21.35(f)(2))*.

4.16 *Flight Test Pilot/Remote Control Pilot*—Each applicant for a normal, utility, acrobatic, commuter, transport or unmanned aircraft system category type certificate must provide a person holding an appropriate pilot certificate to make the flight tests required by this practice. For unmanned aircraft systems, the applicant must provide a person holding an appropriate UAS Pilot Certification *(21.37)*.

4.17 *Flight Test Instrument Calibration and Correction Report (21.39)*:

4.17.1 Each applicant for a type certificate for a normal, utility, acrobatic, commuter, or transport category aircraft, or an unmanned aircraft system must submit a report to the FAA Administrator showing the computations and tests required in connection with the calibration of instruments used for test purposes and in the correction of test results to standard atmospheric conditions *(21.39(a))*.

4.17.2 Each applicant must allow the FAA Administrator to conduct any flight tests that he finds necessary to check the accuracy of the report submitted under 4.17.1 *(21.39(b))*.

4.18 *Type Certificate*—Each type certificate is considered to include the type design, the operating limitations, the certificate data sheet, and the applicable regulations of Subchapter C with which the FAA Administrator records compliance and any other conditions or limitations prescribed for the product in Subchapter C *(21.41)*.

4.19 *Location of Manufacturing Facilities*—Except as provided in 4.12, the FAA Administrator does not issue a type certificate if the manufacturing facilities for the product are located outside of the United States, unless the Administrator finds that the location of the manufacturer's facilities places no undue burden on the FAA in administering applicable airworthiness requirements *(21.43)*.

4.20 *Privileges*—The holder or licensee of a type certificate for a product may *(21.45)*:

4.20.1 In the case of aircraft or unmanned aircraft system, upon compliance with 10.2-10.12, obtain airworthiness certificates *(21.45(a))*;

4.20.2 In the case of aircraft engines or propellers, obtain approval for installation on certified aircraft or unmanned aircraft systems *(21.45(b))*;

4.20.3 In the case of any product, upon compliance with 9.2-9.15, obtain a production certificate for the type certificated product *(21.45(c)*; and

4.20.4 Obtain approval of replacement parts for that product *(21.45(d))*.

4.21 *Transferability*—A type certificate may be transferred to or made available to third persons by licensing agreements. Each grantor shall, within 30 days after the transfer of a certificate or execution or termination of a licensing agreement, notify in writing the appropriate Aircraft Certification Office. The notification must state the name and address of the transferee or licensee, date of the transaction, and in the case of a licensing agreement, the extent of authority granted the licensee *(21.47)*.

4.22 *Availability*—The holder of a type certificate shall make the certificate available for examination upon the request of the FAA Administrator or the National Transportation Safety Board *(21.49)*.

4.23 *Instructions for Continued Airworthiness and Manufacturer's Maintenance Manuals Having Airworthiness Limitations Sections (21.50)*:

4.23.1 The holder of a type certificate for a rotorcraft for which a Rotorcraft Maintenance Manual containing an Airworthiness Limitations section has been issued under sections 27.1529 (a)(2) or 29.1529 (a)(2), and who obtains approval of changes to any replacement time, inspection interval, or related procedure in that section of the manual, shall make those changes available upon request to any operator of the same type of rotorcraft *(21.50(a))*.

4.23.2 The holder of a design approval, including either the type certificate or supplemental type certificate for an aircraft, unmanned aircraft system, aircraft engine, or propeller for which application was made after January 28, 1981, shall furnish at least one set of complete Instructions for Continued Airworthiness, prepared in accordance with sections 23.1529, 25.1529, 27.1529, 29.1529, 31.82, 33.4, or 35.4, or as specified in the applicable airworthiness criteria for unmanned aircraft systems or special classes of aircraft defined in 4.5.2, as applicable, to the owner of each type of aircraft, unmanned aircraft system, aircraft engine, or propeller upon its delivery, or upon issuance of the first standard airworthiness certificate for the affected aircraft or unmanned aircraft system, whichever occurs later, and thereafter make those instructions available to any other person required by 14 CFR Chapter 1 to comply with any of the terms of these instructions. In addition, changes to the Instructions for Continued Airworthiness shall be made available to any person required by 14 CFR Chapter 1 to comply with any of those instructions *(21.50(b))*.

4.24 *Duration*—A type certificate is effective until surrendered, suspended, revoked, or a termination date is otherwise established by the FAA Administrator *(21.51)*.

4.25 *Statement of Conformity (21.53)*:

4.25.1 Each applicant must submit a statement of conformity (FAA Form 317) to the FAA Administrator for each aircraft engine and propeller presented to the Administrator for type certification. This statement of conformity must include a statement that the aircraft engine or propeller conforms to the type design *(21.53(a))*.

4.25.2 Each applicant must submit a statement of conformity to the FAA Administrator for each aircraft, unmanned aircraft system, or part thereof presented to the Administrator for tests. This statement of conformity must include a statement that the applicant has complied with 4.14.1 (unless otherwise authorized under 4.14.1) *(21.53(b))*.

5. Subpart C—Provisional Type Certificates

5.1 *Applicability*—This Subpart prescribes *(21.71)*:

5.1.1 Procedural requirements for the issue of provisional type certificates, amendments to provisional type certificates, and provisional amendments to type certificates *(21.71(a))*, and

5.1.2 Rules governing the holders of those certificates *(21.71(b))*.

5.2 *Eligibility (21.73)*:

5.2.1 Any manufacturer of aircraft or unmanned aircraft systems manufactured within the United States who is a U.S. citizen may apply for Class I or Class II provisional type certificates, for amendments to provisional type certificates held by him, and for provisional amendments to type certificates held by him *(21.73(a))*.

5.2.2 Any manufacturer of aircraft or unmanned aircraft systems manufactured in a foreign country with which the United States has an agreement for the acceptance of those aircraft for export and import may apply for a Class II provisional type certificate, for amendments to provisional type certificates held by him, and for provisional amendments to type certificates held by him *(21.73(b))*.

5.2.3 An aircraft engine manufacturer who is a U.S. citizen and has altered a type-certificated aircraft or unmanned aircraft system by installing different type-certificated aircraft engines manufactured by him within the United States may apply for a Class I provisional type certificate for the aircraft or unmanned aircraft system, and for amendments to Class I provisional type certificates held by him if the basic aircraft or unmanned aircraft system, before alteration, was type certificated in the normal, utility, acrobatic, commuter, transport or unmanned aircraft system category *(21.73(c))*.

5.3 *Application*—Applications for provisional type certificates, for amendments thereto, and for provisional amendments to type certificates must be submitted to the Manager of the Aircraft Certification Office for the geographic area in which the applicant is located (or in the case of European, African, or Middle East Region, the Manager, Aircraft Engineering Division) and must be accompanied by the pertinent information specified in this Subpart *(21.75)*.

5.4 *Duration (21.77)*:

5.4.1 Unless sooner surrendered, superseded, revoked, or otherwise terminated, provisional type certificates and amendments thereto are effective for the periods specified in 5.4 *(21.77(a))*.

5.4.2 A Class I provisional type certificate is effective for 24 months after the date of issue *(21.77(b))*.

5.4.3 A Class II provisional type certificate is effective for 12 months after the date of issue *(21.77(c))*.

5.4.4 An amendment to a Class I or Class II provisional type certificate is effective for the duration of the amended certificate *(21.77(d))*.

5.4.5 A provisional amendment to a type certificate is effective for six months after its approval or until the amendment of the type certificate is approved, whichever is first *(21.77(e))*.

5.5 *Transferability*—Provisional type certificates are not transferable *(21.79)*.

5.6 *Requirements for Issue and Amendment of Class I Provisional Type Certificates (21.81)*:

5.6.1 An applicant is entitled to the issue or amendment of a Class I provisional type certificate if he shows compliance with 5.6 and the FAA Administrator finds that there is no feature, characteristic, or condition that would make the aircraft unsafe when operated in accordance with the limitations established in 5.6.5 and section 91.317 *(21.81(a))*.

5.6.2 The applicant must apply for the issue of a type or supplemental type certificate for the aircraft or unmanned aircraft system *(21.81(b))*.

5.6.3 The applicant must certify that *(21.81(c))*:

5.6.3.1 The aircraft or unmanned aircraft system has been designed and constructed in accordance with the airworthiness requirements applicable to the issue of the type or supplemental type certificate applied for *(21.81(c)(1))*;

5.6.3.2 The aircraft or unmanned aircraft system substantially meets the applicable flight characteristic requirements for the type or supplemental type certificate applied for *(21.81(c)(2))*; and

5.6.3.3 The aircraft or unmanned aircraft system can be operated safely under the appropriate operating limitations specified in 5.6.1 *(21.81(c)(3))*.

5.6.4 The applicant must submit a report showing that the aircraft or unmanned aircraft system had been flown in all maneuvers necessary to show compliance with the flight requirements for the issue of the type or supplemental type certificate applied for and to establish that the aircraft or unmanned aircraft system can be operated safely in accordance with the limitations contained in Subchapter C *(21.81(d))*.

5.6.5 The applicant must establish all limitations required for the issue of the type or supplemental type certificate applied for, including limitations on weights, speeds, flight maneuvers, loading, and operation of controls and equipment unless, for each limitation not so established, appropriate operating restrictions are established for the aircraft *(21.81(e))*.

5.6.6 The applicant must establish an inspection and maintenance program for the continued airworthiness of the aircraft or unmanned aircraft system *(21.81(f))*.

5.6.7 The applicant must show that a prototype aircraft has been flown for at least 50 h under an experimental certificate issued under 10.14-10.16 or under the auspices of an Armed Force of the United States. However, in the case of an amendment to a provisional type certificate, the Administrator may reduce the number of required flight hours *(21.81(g))*.

5.7 *Requirements for Issue and Amendment of Class II Provisional Type Certificates (21.83)*:

5.7.1 An applicant who manufactures aircraft within the United States is entitled to the issue or amendment of a Class II provisional type certificate if he shows compliance with 5.7 and the FAA Administrator finds that there is no feature, characteristic, or condition that would make the aircraft unsafe when operated in accordance with the limitations in 5.7.8 and sections 91.317 and 121.207 *(21.83(a))*.

5.7.2 An applicant who manufactures aircraft in a country with which the United States has an agreement for the acceptance of those aircraft for export and import is entitled to the issue or amendment of a Class II provisional type certificate if the country in which the aircraft or was manufactured certifies that the applicant has shown compliance with 5.7, that the aircraft meets the requirements of 5.7.6 and that there is no feature, characteristic, or condition that would make the aircraft unsafe when operated in accordance with the limitations in 5.7.8 and applicable sections of 91.317 and 121.207 *(21.83(b))*.

5.7.3 The applicant must apply for a type certificate, in the transport category, for the aircraft *(21.83(c))*.

5.7.4 The applicant must hold a U.S. type certificate for at least one other aircraft in the same transport category as the subject aircraft *(21.83(d))*.

5.7.5 The FAA's official flight test program or the flight test program conducted by the authorities of the country in which the aircraft was manufactured, with respect to the issue of a type certificate for that aircraft, must be in progress *(21.83(e))*.

5.7.6 The applicant, or in the case of a foreign manufactured aircraft, the country in which the aircraft was manufactured, must certify that *(21.83(f))*:

5.7.6.1 The aircraft has been designed and constructed in accordance with the airworthiness requirements applicable to the issue of the type certificate applied for *(21.83(f)(1))*;

5.7.6.2 The aircraft substantially complies with the applicable flight characteristic requirements for the type certificate applied for *(21.83(f)(2))*; and

5.7.6.3 The aircraft can be operated safely under the appropriate operating limitations in Subchapter C *(21.83(f)(3))*.

5.7.7 The applicant must submit a report showing that the aircraft has been flown in all maneuvers necessary to show compliance with the flight requirements for the issue of the type certificate and to establish that the aircraft can be operated safely in accordance with the limitations in Subchapter C *(21.83(g))*.

5.7.8 The applicant must prepare a provisional aircraft flight manual containing all limitations required for the issue of the type certificate applied for, including limitations on weights, speeds, flight maneuvers, loading, and operation of controls and equipment unless, for each limitation not so established, appropriate operating restrictions are established for the aircraft *(21.83(h))*.

5.7.9 The applicant must establish an inspection and maintenance program for the continued airworthiness of the aircraft *(21.83(i))*.

5.7.10 The applicant must show that a prototype aircraft has been flown for at least 100 h. In the case of an amendment to a provisional type certificate, the FAA Administrator may reduce the number of required flight hours *(21.83(j))*.

5.8 *Provisional Amendments to Type Certificates (21.85)*:

5.8.1 An applicant who manufactures aircraft or unmanned aircraft system within the United States is entitled to a provisional amendment to a type certificate if he shows compliance with 5.8 and the FAA Administrator finds that there is no feature, characteristic, or condition that would make the aircraft or unmanned aircraft system unsafe when operated under the appropriate limitations contained in Subchapter C *(21.85(a))*.

5.8.2 An applicant who manufactures aircraft or unmanned aircraft systems in a foreign country with which the United States has an agreement for the acceptance of those aircraft or unmanned aircraft systems for export and import is entitled to a provisional amendment to a type certificate if the country in which the aircraft or unmanned aircraft system was manufactured certifies that the applicant has shown compliance with 5.8, that the aircraft meets the requirements of 5.8.5, and that there is no feature, characteristic, or condition that would make the aircraft or unmanned aircraft system unsafe when operated under the appropriate limitations contained in Subchapter C *(21.85(b))*.

5.8.3 The applicant must apply for an amendment to the type certificate *(21.85(c))*.

5.8.4 The FAA's official flight test program or the flight test program conducted by the authorities of the country in which the aircraft or unmanned aircraft system was manufactured, with respect to the amendment of the type certificate, must be in progress *(21.85(d))*.

5.8.5 The applicant, or in the case of foreign manufactured aircraft or unmanned aircraft system, the country in which the aircraft or unmanned aircraft system was manufactured, must certify that *(21.85(e))*:

5.8.5.1 The modification involved in the amendment to the type certificate has been designed and constructed in accordance with the airworthiness requirements applicable to the issue of the type certificate for the aircraft or unmanned aircraft system *(21.85(e)(1))*;

5.8.5.2 The aircraft or unmanned aircraft system substantially complies with the applicable flight characteristic requirements for the type certificate *(21.85(e)(2))*; and

5.8.5.3 The aircraft or unmanned aircraft system can be operated safely under the appropriate operating limitations in Subchapter C *(21.85(e)(3))*.

5.8.6 The applicant must submit a report showing that the aircraft or unmanned aircraft system incorporating the modifications involved has been flown in all maneuvers necessary to show compliance with the flight requirements applicable to those modifications and to establish that the aircraft or unmanned aircraft system can be operated safely in accordance with the applicable limitations specified in sections 91.317 and 121.207 *(21.85(f))*.

5.8.7 The applicant must establish and publish, in a provisional aircraft or unmanned aircraft system flight manual or other document and on appropriate placards, all limitations required for the issue of the type certificate applied for, including weight, speed, flight maneuvers, loading, and operation of controls and equipment, unless, for each limitation not so established, appropriate operating restrictions are established for the aircraft or unmanned aircraft system *(21.85(g))*.

5.8.8 The applicant must establish an inspection and maintenance program for the continued airworthiness of the aircraft or unmanned aircraft system *(21.85(h))*.

5.8.9 The applicant must operate a prototype aircraft or unmanned aircraft system modified in accordance with the corresponding amendment to the type certificate for the number of hours found necessary by the Administrator *(21.85(i))*.

6. Subpart D—Changes to Type Certificates

6.1 *Applicability*—This Subpart prescribes procedural requirements for the approval of changes to type certificates *(21.91)*.

6.2 *Classification of Changes in Type Design (21.93)*:

6.2.1 In addition to changes in type design specified in 6.2.2, changes in type design are classified as minor and major. A "minor change" is one that has no appreciable effect on the weight, balance, structural strength, reliability, operational characteristics, or other characteristics affecting the airworthiness of the product. All other changes are "major changes" (except as provided in 6.2.2) *(21.93(a))*.

6.2.2 For the purpose of complying with Part 36, and except as provided in 6.2.2.2-6.2.2.4, any voluntary change in the type design of an aircraft or unmanned aircraft system that may increase the noise levels of that aircraft or unmanned aircraft system is an "acoustical change" (in addition to being a minor or major change as classified in 6.2.1) for the following aircraft *(21.93(b))*:

6.2.2.1 Transport category large airplanes *(21.93(b)(1))*;

6.2.2.2 Jet (turbojet-powered) airplanes (regardless of category). For airplanes to which 6.2 applies, "acoustical changes" do not include changes in type design that are limited to one of the following *(21.93(b)(2))*:

(1) Gear down flight with one or more retractable landing gear down during the entire flight *(21.93 (b)(2)(i))*,

(2) Spare engine and nacelle carriage external to the skin of the airplane (and return of the pylon or other external mount) *(21.93(b)(2)(ii))*, or

(3) Time-limited engine or nacelle changes or both where the change in type design specifies that the airplane may not be operated for a period of more than 90 days unless compliance with the applicable acoustical change provisions of Part 36 is shown for that change in type design *(21.93(b)(2)(iii))*.

6.2.2.3 Propeller-driven commuter category and small airplanes in the primary, normal, utility, acrobatic, transport, unmanned aircraft systems and restricted categories, except for airplanes that are *(21.93(b)(3))*:

(1) Designated for "agricultural aircraft or unmanned aircraft system operations" (as defined in section 137.3, effective January 1, 1966) to which section 36.1583 does not apply *(21.93(b)(3)(i))*;

(2) Designated for dispensing fire fighting materials to which section 36.1583 does not apply *(21.93(b)(3)(ii))*;

(3) U.S. registered and that had flight time before January 1, 1955 *(21.93(b)(3)(iii))*; or

(4) Land-configured aircraft reconfigured with floats or skis. This reconfiguration does not permit further exception from the requirements of this 6.2 upon any acoustical change not enumerated in 6.2.2 *(21.93(b)(3)(iv))*.

6.2.2.4 Helicopters except *(21.93(b)(4))*:

(1) Those helicopters or unmanned rotorcraft systems that are designated exclusively *(21.93(b)(4)(i))*:

(a) For "agricultural operations," as defined in section 137.3, as effective on January 1, 1966 *(21.93(b)(4)(i)(A))*;

(b) For dispensing firefighting materials *(21.93(b)(4)(i)(B))*; or

(c) For carrying external loads, as defined in section 133.1(b), as effective on December 20, 1976 *(21.93(b)(4)(i)(C))*.

(2) Those helicopters or unmanned rotorcraft systems modified by installation or removal of external equipment. For purposes of 6.2, "external equipment" means any instrument, mechanism, part, apparatus, appurtenance, or accessory that is attached to or extends from the helicopter or unmanned rotorcraft system exterior, but is not used nor intended to be used in operating or controlling a helicopter or unmanned rotorcraft system in flight and is not part of an airframe or engine. An "acoustical change" does not include *(21.93(b)(4)(ii))*:

(a) Addition or removal of external equipment *(21.93(b)(4)(ii)(A))*;

(b) Changes in the airframe made to accommodate the addition or removal of external equipment, to provide for an external load attaching means, to facilitate the use of external equipment or external loads, or to facilitate the safe operation of the helicopter or unmanned rotorcraft system with external equipment mounted to or external loads carried by the helicopter or unmanned rotorcraft system *(21.93(b)(4)(ii)(B))*;

(c) Reconfiguration of the helicopter or unmanned rotorcraft system by the addition or removal of floats and skis *(21.93(b)(4)(ii)(C))*;

(d) Flight with one or more doors or windows, or both, removed or in an open position *(21.93(b)(4)(ii)(D))*; or

(e) Any changes in the operational limitations placed on the helicopter or unmanned rotorcraft system as a consequence of the addition or removal of external equipment, floats, and skis, or flight operations with doors or windows, or both, removed or in an open position *(21.93(b)(4)(ii)(E))*.

6.2.3 For purposes of complying with Part 34, any voluntary change in the type design of the airplane, unmanned aircraft system or engine that may increase fuel venting or exhaust emissions is an "emissions change" *(21.93(c)*.

6.3 *Approval of Minor Changes in Type Design*—Minor changes in a type design may be approved under a method acceptable to the FAA Administrator before submitting to the Administrator any substantiating or descriptive data *(21.95)*.

6.4 *Approval of Major Changes in Type Design (21.97)*:

6.4.1 In the case of a major change in type design, the applicant must submit substantiating data and necessary descriptive data for inclusion in the type design *(21.97(a))*.

6.4.2 Approval of a major change in the type design of an aircraft or unmanned aircraft system engine is limited to the specific engine configuration upon which the change is made unless the applicant identifies in the necessary descriptive data for inclusion in the type design the other configurations of the same engine type for which approval is requested and shows that the change is compatible with the other configurations *(21.97(b))*.

6.5 *Required Design Changes (21.99)*:

6.5.1 When an Airworthiness Directive is issued under Part 39, the holder of the type certificate for the product concerned must *(21.99(a))*:

6.5.1.1 If the FAA Administrator finds that design changes are necessary to correct the unsafe condition of the product, and upon his request, submit appropriate design changes for approval *(21.99(a)(1))*, and

6.5.1.2 Upon approval of the design changes, make available the descriptive data covering the changes to all operators of products previously certificated under the type certificate *(21.99(a)(2))*.

6.5.2 In a case in which there are no current unsafe conditions, but the FAA Administrator or the holder of the type certificate finds through service experience that changes in type design will contribute to the safety of the product, the holder of the type certificate may submit appropriate design changes for approval. Upon approval of the changes, the manufacturer shall make information on the design changes available to all operators of the same type of product *(21.99(b))*.

6.6 *Designation of Applicable Regulations (21.101)*:

6.6.1 An applicant for a change to a type certificate must show that the changed product complies with the airworthiness requirements applicable to the category of the product in effect on the date of the application for the change and with Parts 34 and 36. Exceptions are detailed in 6.6.2 and 6.6.3 *(21.101(a))*.

6.6.2 If 6.6.2.1, 6.6.2.2 or 6.6.2.3 apply, an applicant may show that the changed product complies with an earlier amendment of a regulation required by 6.2.1 and of any other regulation the FAA Administrator finds is directly related. However, the earlier amended regulation may not precede either the corresponding regulation incorporated by reference in the type certificate, or any regulation in sections 23.2, 25.2, 27.2, or 29.2 that is related to the change. The applicant may show compliance with an earlier amendment of a regulation for any of the following *(21.101(b))*:

6.6.2.1 A change that the FAA Administrator finds not to be significant. In determining whether a specific change is significant, the Administrator considers the change in context with all previous relevant design changes and all related revisions to the applicable regulations incorporated in the type certificate for the product. Changes that meet one of the following criteria are automatically considered significant *(21.101(b)(1))*:

(1) The general configuration or the principles of construction are not retained *(21.101(b)(1)(i))*.

(2) The assumptions used for certification of the product to be changed do not remain valid *(21.101(b)(1)(ii))*.

6.6.2.2 Each area, system, component, equipment, or appliance that the FAA Administrator finds is not affected by the change *(21.101(b)(2))*.

6.6.2.3 Each area, system, component, equipment, or appliance that is affected by the change for which the FAA Administrator finds that compliance with a regulation described in 6.6.1 would not contribute materially to the level of safety of the changed product or would be impractical *(21.101(b)(3))*.

6.6.3 An applicant for a change to an aircraft (other than a rotorcraft) of 6000 lb (2722 kg) or less maximum weight, or to a non-turbine rotorcraft of 3000 lb (1361 kg) or less maximum weight may show that the changed product complies with the regulations incorporated by reference in the type certificate. However, if the FAA Administrator finds that the change is significant in an area, the Administrator may designate compliance with an amendment to the regulation incorporated by reference in the type certificate that applies to the change and any regulation that the FAA Administrator finds is directly related, unless the Administrator also finds that compliance with that amendment or regulation would not contribute materially to the level of safety of the changed product or would be impractical *(21.101(c))*.

6.6.4 If the FAA Administrator finds that the regulations in effect on the date of the application for the change do not provide adequate standards with respect to the proposed change because of a novel or unusual design feature, the applicant must also comply with special conditions, and amendments to those special conditions, prescribed under the provisions of 4.4, to provide a level of safety equal to that established by the regulations in effect on the date of the application for the change *(21.101(d))*.

6.6.5 An application for a change to a type certificate for a transport category aircraft is effective for 5 years, and an application for a change to any other type certificate is effective for three years. If the change has not been approved, or if it is clear that it will not be approved under the time limit established under this section, the applicant may do either of the following *(21.101(e))*:

6.6.5.1 File a new application for a change to the type certificate and comply with all the provisions of 6.6.1 applicable to an original application for a change *(21.101(e)(1))*.

6.6.5.2 File for an extension of the original application and comply with the provisions of 6.6.1. The applicant must then select a new application date. The new application date may not precede the date the change is approved by more than the time period established under this section *(21.101(e)(2))*.

6.6.6 For aircraft or unmanned aircraft systems certificated under 4.5.2 and 4.9-4.11, the airworthiness requirements applicable to the category of the product in effect on the date of the application for the change include each airworthiness requirement that the FAA Administrator finds to be appropriate for the type certification of the aircraft or unmanned aircraft systems in accordance with those sections *(21.101(f))*.

7. Subpart E—Supplemental Type Certificates

7.1 *Applicability*—This Subpart prescribes procedural requirements for the issue of supplemental type certificates *(21.111)*.

7.2 *Requirement of Supplemental Type Certificate*—Any person who alters a product by introducing a major change in type design not great enough to require a new application for a type certificate under 4.6 shall apply to the FAA Administrator for a supplemental type certificate, except that the holder of a type certificate for the product may apply for amendment of the original type certificate. The application must be made in a form and manner prescribed by the Administrator *(21.113)*.

7.3 *Applicable Requirements (21.115)*:

7.3.1 Each applicant for a supplemental type certificate must show that the altered product meets applicable requirements specified in 6.6 and, in the case of an acoustical change described in 6.2.2, show compliance with the applicable noise requirements of Part 36 and, in the case of an emissions change described in 6.2.3, show compliance with the applicable fuel venting and exhaust emissions requirements of Part 34 *(21.115(a))*.

7.3.2 Each applicant for a supplemental type certificate must meet 4.14 and 4.25 with respect to each change in the type design *(21.115(b))*.

7.4 *Issue of Supplemental Type Certificates (21.117)*:

7.4.1 An applicant is entitled to a supplemental type certificate if he meets the requirements of 7.2 and 7.3 *(21.117(a))*.

7.4.2 A supplemental type certificate consists of *(21.117(b))*:

7.4.2.1 The approval by the FAA Administrator of a change in the type design of the product *(21.117(b)(1))*, and

7.4.2.2 The type certificate previously issued for the product *(21.117(b)(2))*.

7.5 *Privileges*—The holder of a supplemental type certificate may *(21.119)*:

7.5.1 In the case of aircraft or unmanned aircraft systems, obtain airworthiness certificates *(21.119(a))*;

7.5.2 In the case of other products, obtain approval for installation on certificated aircraft or unmanned aircraft systems *(21.119(b))*; and

7.5.3 Obtain a production certificate for the change in the type design that was approved by that supplemental type certificate *(21.119(c))*.

8. Subpart F—Production Under Type Certificate Only

8.1 *Applicability*—This Subpart prescribes rules for production under a type certificate only *(21.121)*.

8.2 *Production Under Type Certificate*—Each manufacturer of a product being manufactured under a type certificate only shall *(21.123)*:

8.2.1 Make each product available for inspection by the FAA Administrator *(21.123(a))*;

8.2.2 Maintain at the place of manufacture the technical data and drawings necessary for the FAA Administrator to determine whether the product and its parts conform to the type design *(21.123(b))*;

8.2.3 Except as otherwise authorized by the Aircraft Certification Directorate Manager for the geographic area in which the manufacturer is located, for products manufactured more than six months after the date of issue of the type certificate, establish and maintain an approved production inspection system that insures that each product conforms to the type design and is in condition for safe operation *(21.123(c))*; and

8.2.4 Upon the establishment of the approved production inspection system (as required by 8.2.3) submit to the FAA Administrator a manual that describes that system and the means for making the determinations required by 8.3.2 *(21.123(d))*.

8.3 *Production Inspection System: Materials Review Board (21.125)*:

8.3.1 Each manufacturer required to establish a production inspection system by 8.2.3 shall *(21.125(a))*:

8.3.1.1 Establish a Materials Review Board (to include representatives from the inspection and engineering departments) and materials review procedures *(21.125(a)(1))*, and

8.3.1.2 Maintain complete records of Materials Review Board action for at least two years *(21.125(a)(2))*.

8.3.2 The production inspection system required in 8.2.3 must provide a means for determining at least the following *(21.125(b))*:

8.3.2.1 Incoming materials and bought or subcontracted parts used in the finished product must be as specified in the type design data or must be suitable equivalents *(21.125(b)(1))*.

8.3.2.2 Incoming materials and bought or subcontracted parts must be properly identified if their physical or chemical properties cannot be readily and accurately determined *(21.125(b)(2))*.

8.3.2.3 Materials subject to damage and deterioration must be suitably stored and adequately protected *(21.125(b)(3))*.

8.3.2.4 Processes affecting the quality and safety of the finished product must be accomplished in accordance with acceptable industry or U.S. specifications *(21.125(b)(4))*.

8.3.2.5 Parts and components in process must be inspected for conformity with the type design data at points in production at which accurate determinations can be made *(21.125(b)(5))*.

8.3.2.6 Current design drawings must be readily available to manufacturing and inspection personnel and used when necessary *(21.125(b)(6))*.

8.3.2.7 Design changes, including material substitutions, must be controlled and approved before being incorporated in the finished product *(21.125(b)(7))*.

8.3.2.8 Rejected materials and parts must be segregated and identified in a manner that precludes installation in the finished product *(21.125(b)(8))*.

8.3.2.9 Materials and parts that are withheld because of departures from design data or specifications and that are to be considered for installation in the finished product must be processed through the Materials Review Board. Those materials and parts determined by the Board to be serviceable must be properly identified and re-inspected if rework or repair is necessary. Materials and parts rejected by the Board must be marked and disposed of to ensure that they are not incorporated in the final product *(21.125(b)(9))*.

8.3.2.10 Inspection records must be maintained, identified with the completed product where practicable, and retained by the manufacturer for at least two years *(21.125(b)(10))*.

8.4 *Tests: Aircraft and Unmanned Aircraft Systems (21.127)*:

8.4.1 Each person manufacturing aircraft or unmanned aircraft systems under a type certificate only shall establish an approved production flight test procedure and flight check-off form and, in accordance with that form, flight test each aircraft or unmanned aircraft system produced *(21.127(a))*.

8.4.2 Each production flight test procedure must include the following *(21.127(b))*:

8.4.2.1 An operational check of the trim, controllability, or other flight characteristics to establish that the production aircraft or unmanned aircraft system has the same range and degree of control as the prototype aircraft *(21.127(b)(1))*.

8.4.2.2 An operational check of each part or system operated by the crew, (in the case of unmanned aircraft systems, the remote pilot shall perform check), while in flight to establish that, during flight, instrument readings are within normal range *(21.127(b)(2))*.

8.4.2.3 A determination that all instruments are properly marked and that all placards and required flight manuals are installed after flight test *(21.127(b)(3))*.

8.4.2.4 A check of the operational characteristics of the aircraft or unmanned aircraft system on the ground *(21.127(b)(4))*.

8.4.2.5 A check on any other items peculiar to the aircraft or unmanned aircraft system being tested that can best be done during the ground or flight operation of the aircraft or unmanned aircraft system *(21.127(b)(5))*.

8.5 *Tests–Aircraft Engines (21.128)*:

8.5.1 Each person manufacturing aircraft engines under a type certificate only shall subject each engine (except rocket engines for which the manufacturer must establish a sampling technique) to an acceptable test run that includes the following *(21.128(a))*:

8.5.1.1 Break-in runs that include a determination of fuel and oil consumption and a determination of power characteristics at rated maximum continuous power or thrust and, if applicable, at rated takeoff power or thrust *(21.128(a)(1))*.

8.5.1.2 At least 5 h of operation at rated maximum continuous power or thrust. For engines having a rated takeoff power or thrust higher than rated maximum continuous power or thrust, the 5-h run must include 30 min at rated takeoff power or thrust *(21.128(a)(2))*.

8.5.2 The test runs required by 8.5.1 may be made with the engine appropriately mounted and using current types of power and thrust measuring equipment *(21.128(b))*.

8.6 *Tests–Propellers*—Each person manufacturing propellers under a type certificate only shall give each variable pitch propeller an acceptable functional test to determine if it operates properly throughout the normal range of operation *(21.129)*.

8.7 *Statement of Conformity*—Each holder or licensee of a type certificate only for a product manufactured in the United States shall, upon the initial transfer by him of the ownership of such product manufactured under that type certificate, or upon application for the original issue of an aircraft or unmanned aircraft system airworthiness certificate or an aircraft engine or propeller airworthiness approval tag (FAA Form 8130-3), give the FAA Administrator a statement of conformity (FAA Form 317). This statement must be signed by an authorized person who holds a responsible position in the manufacturing organization and must include *(21.130)*:

8.7.1 For each product, a statement that the product conforms to its type certificate and is in condition for safe operation *(21.130(a))*;

8.7.2 For each aircraft or unmanned aircraft system, a statement that the aircraft or unmanned aircraft system has been flight checked *(21.130(b))*; and

8.7.3 For each aircraft engine or variable pitch propeller, a statement that the engine or propeller has been subjected by the manufacturer to a final operational check *(21.130(c))*.

8.7.4 However, in the case of a product manufactured for an Armed Force of the United States, a statement of conformity is not required if the product has been accepted by that Armed Force *(21.130(d))*.

9. Subpart G—Production Certificates

9.1 *Applicability*—This Subpart prescribes procedural requirements for the issue of production certificates and rules governing the holders of those certificates *(21.131)*.

9.2 *Eligibility (21.133)*:

9.2.1 Any person may apply for a production certificate if he holds, for the product concerned, a *(21.133(a))*:

9.2.1.1 Current type certificate *(21.133(a)(1))*,

9.2.1.2 Right to the benefits of that type certificate under a licensing agreement *(21.133(a)(2))*, or

9.2.1.3 Supplemental type certificate *(21.133(a)(3))*.

9.2.2 Each application for a production certificate must be made in a form and manner prescribed by the FAA Administrator *(21.133(b))*.

9.3 *Requirements for Issuance*—An applicant is entitled to a production certificate if the Administrator finds, after examination of the supporting data and after inspection of the

organization and production facilities, that the applicant has complied with 9.5 and 9.6 *(21.135)*.

9.4 *Location of Manufacturing Facilities*—The FAA Administrator does not issue a production certificate if the manufacturing facilities concerned are located outside the United States unless the Administrator finds no undue burden on the United States in administering the applicable requirements of the Federal Aviation Act of 1958 or of the Federal Aviation Regulations *(21.137)*.

9.5 *Quality Control*—The applicant must show that he has established and can maintain a quality control system for any product, for which he requests a production certificate, so that each article will meet the design provisions of the pertinent type certificate *(21.139)*.

9.6 *Quality Control Data Requirements--Prime Manufacturer (21.143)*:

9.6.1 Each applicant must submit for approval data describing the inspection and test procedures necessary to ensure that each article produced conforms to the type design and is in a condition for safe operation, including as applicable *(21.143(a))*:

9.6.1.1 A statement describing assigned responsibilities and delegated authority of the quality control organization, together with a chart indicating the functional relationship of the quality control organization to management and to other organizational components, and indicating the chain of authority and responsibility within the quality control organization *(21.143(a)(1))*;

9.6.1.2 A description of inspection procedures for raw materials, purchased items, and parts and assemblies produced by manufacturers' suppliers, including methods used to ensure acceptable quality of parts and assemblies that cannot be completely inspected for conformity and quality when delivered to the prime manufacturer's plant *(21.143(a)(2))*;

9.6.1.3 A description of the methods used for production inspection of individual parts and complete assemblies, including the identification of any special manufacturing processes involved, the means used to control the processes, the final test procedure for the complete product, and, in the case of aircraft or unmanned aircraft systems, a copy of the manufacturer's production flight test procedures and check-off list *(21.143(a)(3))*;

9.6.1.4 An outline of the materials review system, including the procedure for recording review board decisions and disposing of rejected parts *(21.143(a)(4))*;

9.6.1.5 An outline of a system for informing company inspectors of current changes in engineering drawings, specifications, and quality control procedures *(21.143(a)(5))*; and

9.6.1.6 A list or chart showing the location and type of inspection stations *(21.143(a)(6))*.

9.6.2 Each prime manufacturer shall make available to the FAA Administrator information regarding all delegation of authority to suppliers to make major inspections of parts or assemblies for which the prime manufacturer is responsible *(21.143(b))*.

9.7 *Changes in Quality Control System*—After the issue of a production certificate, each change to the quality control system is subject to review by the FAA Administrator. The holder of a production certificate shall immediately notify the Administrator in writing of any change that may affect the inspection, conformity, or airworthiness of the product *(21.147)*.

9.8 *Multiple Products*—The FAA Administrator may authorize more than one type-certificated product to be manufactured under the terms of one production certificate if the products have similar production characteristics *(21.149)*.

9.9 *Production Limitation Record*—A production limitation record is issued as part of a production certificate. The record lists the type certificate of every product that the applicant is authorized to manufacture under the terms of the production certificate *(21.151)*.

9.10 *Amendment of the Production Certificate*—The holder of a production certificate desiring to amend it to add a type certificate or model or both must apply in a form and manner prescribed by the FAA Administrator. The applicant must comply with the applicable requirements of 9.5-9.7 *(21.153)*.

9.11 *Transferability*—A production certificate is not transferable *(21.155)*.

9.12 *Inspections and Tests*—Each holder of a production certificate shall allow the FAA Administrator to make any inspections and tests necessary to determine compliance with the applicable regulations in Subchapter C *(21.157)*.

9.13 *Duration*—A production certificate is effective until surrendered, suspended, revoked, or a termination date is otherwise established by the FAA Administrator or the location of the manufacturing facility is changed *(21.159)*.

9.14 *Display*—The holder of a production certificate shall display it prominently in the main office of the factory in which the product concerned is manufactured *(21.161)*.

9.15 *Privileges (21.163)*:

9.15.1 The holder of a production certificate may *(21.163(a))*:

9.15.1.1 Obtain an aircraft or unmanned aircraft system airworthiness certificate without further showing except that the FAA Administrator may inspect the aircraft or unmanned aircraft system for conformity with the type design *(21.163(a)(1))*, or

9.15.1.2 In the case of other products, obtain approval for installation on type-certificated aircraft or unmanned aircraft systems *(21.163(a)(2))*.

9.15.2 Notwithstanding the provisions of section 147.3, the holder of a production certificate for a primary category aircraft or for a normal, utility, or acrobatic category aircraft of a type design that is eligible for a special airworthiness certificate in the primary category under 10.9.3, may *(21.163(b))*:

9.15.2.1 Conduct training for persons in the performance of a special inspection and preventive maintenance program approved as a part of the aircraft's type design under 4.9.2, provided the training is given by a person holding a mechanic certificate with appropriate airframe and powerplant ratings issued under Part 65 *(21.163(b)(1))*, and

9.15.2.2 Issue a certificate of competency to persons successfully completing the approved training program, provided the certificate specifies the aircraft make and model to which the certificate applies *(21.163(b)(2))*.

9.16 *Responsibility of Holder*—The holder of a production certificate shall *(21.165)*:

9.16.1 Maintain the quality control system in conformity with the data and procedures approved for the production certificate *(21.164(a))*, and

9.16.2 Determine that each part and each completed product, including primary category aircraft assembled under a production certificate by another person from a kit provided by the holder of the production certificate, submitted for airworthiness certification or approval conforms to the approved design and is in a condition for safe operation *(21.165(b))*.

10. Subpart H—Airworthiness Certificates

10.1 *Applicability*—This Subpart prescribes procedural requirements for the issue of airworthiness certificates *(21.171)*.

10.2 *Eligibility*—Any registered owner of a U.S.-registered aircraft or unmanned aircraft system (or the agent of the owner) may apply for an airworthiness certificate for that aircraft or unmanned aircraft system. An application for an airworthiness certificate must be made in a form and manner acceptable to the FAA Administrator and may be submitted to any FAA office *(21.173)*.

10.3 *Airworthiness Certificates–Classification (21.175)*:

10.3.1 Standard airworthiness certificates are airworthiness certificates issued for type certificated in the normal, utility, acrobatic, commuter, or transport category aircraft, unmanned aircraft system category, manned free balloons, and aircraft designated by the FAA Administrator as special classes of aircraft *(21.175(a))*.

10.3.2 Special airworthiness certificates are primary, restricted, limited, light sport and provisional airworthiness certificates, special flight permits, and experimental certificates *(21.175(b))*.

10.4 *Amendment or Modification*—An airworthiness certificate may be amended or modified only upon application to the FAA Administrator *(21.177)*.

10.5 *Transferability*—An airworthiness certificate is transferred with the aircraft *(21.179)*.

10.6 *Duration (21.181)*:

10.6.1 Unless sooner surrendered, suspended, revoked, or a termination date is otherwise established by the FAA Administrator, airworthiness certificates are effective as follows *(21.181(a))*:

10.6.1.1 Standard airworthiness certificates, special airworthiness certificates—primary category, and airworthiness certificates issued for restricted or limited category aircraft are effective as long as the maintenance, preventive maintenance, and alterations are performed in accordance with Parts 43 and 91 and the aircraft or unmanned aircraft systems are registered in the United States *(21.181(a)(1))*.

10.6.1.2 A special flight permit is effective for the period of time specified in the permit *(21.181(a)(2))*.

10.6.1.3 A special airworthiness certificate in the light-sport category is effective as long as *(21.181(a)(3))*:

(1) The aircraft meets the definition of a light-sport aircraft *(21.181(a)(3)(i))*;

(2) The aircraft conforms to its original configuration, except for those alterations performed in accordance with an applicable consensus standard and authorized by the manufacturer or a person acceptable to the FAA *(21.181(a)(3)(ii))*;

(3) The aircraft has no unsafe condition and is not likely to develop an unsafe condition *(21.181(a)(3)(iii))*; and

(4) The aircraft is registered in the United States *(21.181(a)(3)(iv))*.

10.6.1.4 An experimental certificate for research and development showing compliance with regulations, crew training, or market surveys is effective for one year after the date of issue or renewal unless the FAA prescribes a shorter period. The duration of an experimental certificate issued for operating amateur-built aircraft, exhibition, air racing, operating primary kit-built aircraft, or operating light-sport aircraft is unlimited, unless the FAA establishes a specific period for good cause *(21.181(a)(4))*.

10.6.2 The owner, operator, or bailee of the aircraft or unmanned aircraft system shall, upon request, make it available for inspection by the FAA Administrator *(21.181(b))*.

10.6.3 Upon suspension, revocation, or termination by order of the FAA Administrator of an airworthiness certificate, the owner, operator, or bailee of an aircraft or unmanned aircraft system shall, upon request, surrender the certificate to the Administrator *(21.181(c))*.

10.7 *Aircraft Identification (21.182)*:

10.7.1 Except as provided in 10.7.2, each applicant for an airworthiness certificate under this Subpart must show that his aircraft is identified as prescribed in section 45.11 *(21.182(a))*.

10.7.2 Section 10.7.1 does not apply to applicants for the following *(21.182(b))*:

10.7.2.1 A special flight permit *(21.182(b)(1))*;

10.7.2.2 An experimental certificate for an aircraft not issued for the purpose of operating amateur-built aircraft, operating primary kit-built aircraft, or operating light-sport aircraft *(21.182(b)(2))*; and

10.7.2.3 A change from one airworthiness classification to another, for an aircraft or unmanned aircraft system already identified as prescribed in Section 45.11 *(21.182(b)(3))*.

10.8 *Issue of Standard Airworthiness Certificates for Normal, Utility, Acrobatic, Commuter, and Transport Category Aircraft; Unmanned Aircraft Systems; Manned Free Balloons; and Special Classes of Aircraft (21.183)*:

10.8.1 *New Aircraft Manufactured Under a Production Certificate*—An applicant for a standard airworthiness certificate for a new aircraft or unmanned aircraft system manufactured under a production certificate is entitled to a standard airworthiness certificate without further showing, except that the FAA Administrator may inspect the aircraft or unmanned aircraft system to determine conformity to the type design and condition for safe operation *(21.183(a))*.

10.8.2 *New Aircraft Manufactured Under Type Certificate Only*—An applicant for a standard airworthiness certificate for a new aircraft or unmanned aircraft system manufactured under a type certificate only is entitled to a standard airworthiness certificate upon presentation by the holder or licensee of the type certificate of the statement of conformity prescribed in 8.7 if the FAA Administrator finds after inspection that the aircraft

or unmanned aircraft system conforms to the type design and is in condition for safe operation *(21.183(b))*.

10.8.3 *Import Aircraft*—An applicant for a standard airworthiness certificate for an import aircraft or unmanned aircraft system type certificated in accordance with 4.12 is entitled to an airworthiness certificate if the country in which the aircraft or unmanned aircraft system was manufactured certifies and the FAA Administrator finds, that the aircraft or unmanned aircraft system conforms to the type design and is in condition for safe operation *(21.183(c))*.

10.8.4 *Other Aircraft*—An applicant for a standard airworthiness certificate for aircraft or unmanned aircraft system not covered by 10.8.1-10.8.3 is entitled to a standard airworthiness certificate if *(21.183(d))*:

10.8.4.1 He presents evidence to the FAA Administrator that the aircraft or unmanned aircraft system conforms to a type design approved under a type certificate or a supplemental type certificate and to applicable Airworthiness Directives *(21.183(d)(1))*;

10.8.4.2 The aircraft (except an experimentally certificated aircraft that previously had been issued a different airworthiness certificate under this section) has been inspected in accordance with the performance rules for 100-h inspections set forth in section 43.15 and found airworthy by *(21.183(d)(2))*:

(1) The manufacturer *(21.183(d)(2)(i))*;

(2) The holder of a repair station certificate as provided in Part 145 of 14 CFR Chapter 1 *(21.183(d)(2)(ii))*;

(3) The holder of a mechanic certificate as authorized in Part 65 *(21.183(d)(2)(iii))*; or

(4) The holder of a certificate issued under Part 121 and having a maintenance and inspection organization appropriate to the aircraft type *(21.183(d)(2)(iv))*.

10.8.4.3 The FAA Administrator finds after inspection that the aircraft conforms to the type design and is in condition for safe operation *(21.183(d)(3))*.

10.8.5 *Noise Requirements*—Notwithstanding all other provisions of this section, the following must be complied with for the original issuance of a standard airworthiness certificate *(21.183(e))*:

10.8.5.1 For transport category large airplanes and jet (turbojet powered) airplanes or unmanned aircraft systems that have not had any flight time before the dates specified in section 36.1(d), no standard airworthiness certificate is originally issued under this section unless the FAA Administrator finds that the type design complies with the noise requirements in section 36.1(d) in addition to the applicable airworthiness requirements in this section. For import airplanes or unmanned aircraft systems, compliance with 10.8.5.1 is shown if the country in which the airplane or unmanned aircraft systems was manufactured certifies and the Administrator finds, that section 36.1(d) (or the applicable airplane noise requirements of the country in which the airplane was manufactured and any other requirements the Administrator may prescribe to provide noise levels no greater than those provided by compliance with section 36.1(d)) and 10.8.3 are complied with *(21.183(e)(1))*.

10.8.5.2 For normal, utility, acrobatic, commuter, transport or unmanned aircraft systems category propeller-driven small airplanes (except for those airplanes that are designed for "agricultural aircraft operations" (as defined in section 137.3, as effective on January 1, 1966) or for dispensing fire-fighting materials to which section 36.1583 does not apply) that have not had any flight time before the applicable date specified in Part 36, no standard airworthiness certificate is originally issued under 10.8 unless the applicant shows that the type design complies with the applicable noise requirements of Part 36 in addition to the applicable airworthiness requirements in 10.8. For import airplanes and unmanned aircraft systems, compliance with 10.8.5.2 is shown if the country in which the airplane or unmanned aircraft system was manufactured certifies and the FAA Administrator finds that the applicable requirements of Part 36 (or the applicable airplane noise requirements of the country in which the airplane or unmanned aircraft system was manufactured and any other requirements the Administrator may prescribe to provide noise levels no greater than those provided by compliance with the applicable requirements of Part 36) and 10.8.3 are complied with *(21.183(e)(2))*.

10.8.6 *Passenger Emergency Exit Requirements*—Notwithstanding all other provisions of 10.8, each applicant for issuance of a standard airworthiness certificate for a transport category airplane manufactured after October 16, 1987 must show that the airplane meets the requirements of section 25.807(c)(7), in effect on July 24, 1989. For the purposes of 10.8.6, the date of manufacture of an airplane is the date the inspection acceptance records reflect that the airplane is complete and meets the FAA-approved type design data *(21.183(f))*.

10.8.7 *Fuel Venting and Exhaust Emission Requirements*—Notwithstanding all other provisions of 10.8, and irrespective of the date of application, no airworthiness certificate is issued on and after the dates specified in Part 34 for the airplanes or unmanned aircraft systems specified therein, unless the airplane or unmanned aircraft system complies with the applicable requirements of that part *(21.183(g))*.

10.9 *Issue of Special Airworthiness Certificates for Primary Category Aircraft (21.184)*:

10.9.1 *New Primary Category Aircraft Manufactured Under a Production Certificate*—An applicant for an original, special airworthiness certificate-primary category for a new aircraft that meets the criteria of 4.9.1.1, manufactured under a production certificate, including aircraft assembled by another person from a kit provided by the holder of the production certificate and under the supervision and quality control of that holder, is entitled to a special airworthiness certificate without further showing, except that the FAA Administrator may inspect the aircraft to determine conformity to the type design and condition for safe operation *(21.184(a))*.

10.9.2 *Imported Aircraft*—An applicant for a special airworthiness certificate-primary category for an imported aircraft type certificated under 4.12 is entitled to a special airworthiness certificate if the civil airworthiness authority of the country in which the aircraft was manufactured certifies and the FAA Administrator finds after inspection that the aircraft conforms to an approved type design that meets the criteria of 4.9.1.1 and is in a condition for safe operation *(21.184(b))*.

10.9.3 *Aircraft Having a Current Standard Airworthiness Certificate*—An applicant for a special airworthiness certificate-primary category for an aircraft having a current standard airworthiness certificate that meets the criteria of 4.9.1.1 may obtain the primary category certificate in exchange for its standard airworthiness certificate through the supplemental type certification process. For the purposes of this section, a current standard airworthiness certificate means that the aircraft conforms to its approved normal, utility, or acrobatic type design; complies with all applicable airworthiness directives; has been inspected and found airworthy within the last twelve calendar months in accordance with section 91.409(a)(1) and is found to be in a condition for safe operation by the FAA Administrator *(21.184(c))*.

10.9.4 *Other Aircraft*—An applicant for a special airworthiness certificate-primary category for an aircraft that meets the criteria of 4.9.1.1, and is not covered by 10.9.1-10.9.3, is entitled to a special airworthiness certificate if *(21.184(d))*:

10.9.4.1 The applicant presents evidence to the FAA Administrator that the aircraft conforms to an approved primary, normal, utility, or acrobatic type design, including compliance with all applicable airworthiness directives *(21.184(d)(1))*;

10.9.4.2 The aircraft has been inspected and found airworthy within the past twelve calendar months in accordance with section 91.409(a)(1) *(21.184(d)(2))*; and

10.9.4.3 The aircraft is found by the FAA Administrator to conform to an approved type design and to be in a condition for safe operation *(21.184(d)(3))*.

10.9.5 Multiple-category airworthiness certificates in the primary category and any other category will not be issued; a primary category aircraft may hold only one airworthiness certificate *(21.184(e))*.

10.10 *Issue of Airworthiness Certificates for Restricted Category Aircraft and Unmanned Aircraft Systems (21.185)*:

10.10.1 *Aircraft and Unmanned Aircraft Systems Manufactured Under a Production Certificate or Type Certificate Only*—An applicant for the original issue of a restricted category airworthiness certificate for an aircraft or unmanned aircraft system type certificated in the restricted category that was not previously type certificated in any other category must comply with the appropriate provisions of 10.8 *(21.185(a))*.

10.10.2 *Other Aircraft*—An applicant for a restricted category airworthiness certificate for an aircraft or unmanned aircraft system type certificated in the restricted category that was either a surplus aircraft or unmanned aircraft system of the Armed Forces or previously type certificated in another category is entitled to an airworthiness certificate if the aircraft or unmanned aircraft system has been inspected by the FAA Administrator and found by him to be in a good state of preservation and repair and in a condition for safe operation *(21.185(b))*.

10.10.3 *Import Aircraft and Unmanned Aircraft Systems*—An applicant for the original issue of a restricted category airworthiness certificate for an import aircraft or unmanned aircraft system type certificated in the restricted category only in accordance with 4.12 is entitled to an airworthiness certificate if the country in which the aircraft or unmanned aircraft system was manufactured certifies and the FAA Administrator finds that the aircraft or unmanned aircraft system conforms to the type design and is in a condition for safe operation *(21.185(c))*.

10.10.4 *Noise Requirements*—For propeller-driven small airplanes or unmanned aircraft system (except airplanes or unmanned aircraft system designed for "agricultural operations," as defined in section 137.3, as effective on January 1, 1966, or for dispensing fire-fighting materials) that have not had any flight time before the applicable date specified in Part 36, and notwithstanding the other provisions of 10.10, no original restricted category airworthiness certificate is issued under 10.10 unless the FAA Administrator finds that the type design complies with the applicable noise requirements of Part 36 in addition to the applicable airworthiness requirements of 10.10. For import airplanes and unmanned aircraft systems, compliance with 10.10.4 is shown if the country in which the airplane was manufactured certifies and the Administrator finds that the applicable requirements of Part 36 (or the applicable airplane noise requirements of the country in which the airplane or unmanned aircraft system was manufactured and any other requirements the Administrator may prescribe to provide noise levels no greater than those provided by compliance with the applicable requirements Part 36) and 10.10.3 are complied with.

10.11 *Issue of Multiple Airworthiness Certification (21.187)*:

10.11.1 An applicant for an airworthiness certificate in the restricted category, and in one or more other categories except primary category, is entitled to the certificate, if *(21.187(a))*:

10.11.1.1 He shows compliance with the requirements for each category when the aircraft or unmanned aircraft system is in the configuration for that category *(21.187(a)(1))*, and

10.11.1.2 He shows that the aircraft or unmanned aircraft system can be converted from one category to another by removing or adding equipment by simple mechanical means *(21.187(a)(2))*.

10.11.2 The operator of an aircraft certificated under 10.11 shall have the aircraft inspected by the FAA Administrator or a certificated mechanic with an appropriate airframe rating to determine airworthiness each time the aircraft is converted from the restricted category to another category for the carriage of passengers for compensation or hire, unless the FAA Administrator finds this unnecessary for safety in a particular case *(21.187(b))*.

10.11.3 The aircraft complies with the applicable requirements of Part 34 *(21.187(c))*.

10.12 *Issue of a Special Airworthiness Certificate for Light UAS Class Unmanned Aircraft Systems (Addition to Part 21)*:

10.12.1 *Purpose*—The FAA issues a special airworthiness certificate in the Light UAS class (1320 MGTOW) of the unmanned aircraft system category *(Addition to Part 21)*.

NOTE 1—The applicant for Light UAS special airworthiness certificate is the manufacturer (OEM) of the air vehicle, who is the responsible design authority for all statements of compliance required by 10.12.

10.12.1.1 An applicant for a special airworthiness certificate for a light UAS must provide the FAA with *(Addition to Part 21)*:

(1) A copy of the operating instructions of the air vehicle and ground control station *(Addition to Part 21)*;

(2) A copy of the maintenance and inspection procedures for the air vehicle and ground control station *(Addition to Part 21)*;

(3) The manufacturer's statement of compliance as described in 10.12.2 *(Addition to Part 21)*, and

(4) The UAS flight-training supplement *(Addition to Part 21)*.

10.12.1.2 The UAS must be inspected by the FAA and found to be in a condition for safe operation *(Addition to Part 21)*.

10.12.2 *Manufacturer's Statement of Compliance for Light UAS Class Unmanned Aircraft System*—The manufacturer's statement of compliance required in 10.12.1.1*(3)* must *(Addition to Part 21)*:

10.12.2.1 Identify the air vehicle by make and model, serial number, class, date of manufacture *(Addition to Part 21)*;

10.12.2.2 Identify the ground control station by make and model, serial number, class, date of manufacture;

10.12.2.3 State that the UAS (integrated system comprising the air vehicle, ground control system and controlling datalinks) meets the provisions of the identified consensus standards *(Addition to Part 21)*;

10.12.2.4 State that the UAS conforms to the manufacturers' design data using the manufacturers' quality assurance systems that meet the identified consensus standards *(Addition to Part 21)*;

10.12.2.5 State that the manufacturers will make available to any interested person the following documents that meet the identified consensus standards *(Addition to Part 21)*:

(1) The UAS operating instructions *(Addition to Part 21)*;

(2) The UAS maintenance and inspection procedures *(Addition to Part 21)*; and

(3) The UAS flight training supplement *(Addition to Part 21)*.

10.12.2.6 State that the manufacturer will monitor and correct safety-of-flight issues through the issuance of safety directives and a continued airworthiness system that meets the identified consensus standards *(Addition to Part 21)*;

10.12.2.7 State that, at the request of the FAA, the manufacturers will provide unrestricted access to facilities *(Addition to Part 21)*; and

10.12.2.8 State that the manufacturers, in accordance with a production acceptance test procedure that meets an applicable consensus standard, has *(Addition to Part 21)*:

(1) Ground and flight tested the UAS *(Addition to Part 21)*;

(2) Found the air vehicle performance acceptable *(Addition to Part 21)*; and

(3) Determined that the UAS is in a condition for safe operation *(Addition to Part 21)*.

10.12.3 *Light UAS Manufactured Outside the United States*—For UAS manufactured outside of the United States to be eligible for a special airworthiness certificate in this class and category, an applicant must meet the requirements of 10.12.1 and provide to the FAA evidence that *(Addition to Part 21)*:

10.12.3.1 The UAS was manufactured in a country with which the United States has a Bilateral Airworthiness Agreement concerning unmanned aircraft systems or Bilateral Aviation Safety Agreement with associated implementation procedures for airworthiness concerning unmanned aircraft systems, or an equivalent airworthiness agreement *(Addition to Part 21)*, and

10.12.3.2 The UAS is eligible for an airworthiness certificate, flight authorization, or other similar certification in its country of manufacture *(Addition to Part 21)*.

10.13 *Issue of a Special Airworthiness Certificate for a Light-Sport Category Aircraft (21.190)*:

10.13.1 *Purpose*—The FAA issues a special airworthiness certificate in the light-sport category to operate a light-sport aircraft, other than a gyroplane *(21.190(a))*.

10.13.2 *Eligibility*—To be eligible for a special airworthiness certificate in the light-sport category *(21.190(b))*:

10.13.2.1 An applicant must provide the FAA with *(21.190(b)(1))*:

(1) The aircraft's operating instructions *(21.190(b)(1)(i))*;

(2) The aircraft's maintenance and inspection procedures *(21.190(b)(1)(ii))*;

(3) The manufacturer's statement of compliance as described in 10.13.3 *(21.190(b)(1)(iii))*; and

(4) The aircraft's flight training supplement *(21.190(b)(1)(iv))*.

10.13.2.2 The aircraft must not have been previously issued a standard, primary, restricted, limited, or provisional airworthiness certificate or an equivalent airworthiness certificate issued by a foreign civil aviation authority *(21.190(b)(2))*.

10.13.2.3 The aircraft must be inspected by the FAA and found to be in a condition for safe operation *(21.190(b)(3))*.

10.13.3 *Manufacturer's Statement of Compliance for Light-Sport Category Aircraft*—The manufacturer's statement of compliance required in 10.13.2.1*(3)* must *(21.190(c))*:

10.13.3.1 Identify the aircraft by make and model, serial number, class, date of manufacture, and consensus standard used *(21.190(c)(1))*;

10.13.3.2 State that the aircraft meets the provisions of the identified consensus standard *(21.190(c)(2))*;

10.13.3.3 State that the aircraft conforms to the manufacturer's design data, using the manufacturer's quality assurance system that meets the identified consensus standard *(21.190(c)(3))*;

10.13.3.4 State that the manufacturer will make available to any interested person the following documents that meet the identified consensus standard *(21.190(c)(4))*:

(1) The aircraft's operating instructions *(21.190(c)(4)(i))*,

(2) The aircraft's maintenance and inspection procedures *(21.190(c)(4)(ii))*, and

(3) The aircraft's flight training supplement *(21.190(c)(4)(iii))*.

10.13.3.5 State that the manufacturer will monitor and correct safety-of-flight issues through the issuance of safety directives and a continued airworthiness system that meets the identified consensus standard *(21.190(c)(5))*;

10.13.3.6 State that at the request of the FAA, the manufacturer will provide unrestricted access to its facilities *(21.190(c)(6))*; and

10.13.3.7 State that the manufacturer, in accordance with a production acceptance test procedure that meets an applicable consensus standard has *(21.190(c)(7))*:

(1) Ground and flight tested the aircraft *(21.190(c)(7)(i))*,

(2) Found the aircraft performance acceptable *(21.190(c)(7)(ii))*, and

(3) Determined that the aircraft is in a condition for safe operation *(21.190(c)(7)(iii))*.

10.13.4 *Light-Sport Aircraft Manufactured Outside the United States*—For aircraft manufactured outside of the United States to be eligible for a special airworthiness certificate in the light-sport category, an applicant must meet the requirements of 10.13.2 and provide to the FAA evidence that *(21.190(d))*:

10.13.4.1 The aircraft was manufactured in a country with which the United States has a Bilateral Airworthiness Agreement concerning airplanes or Bilateral Aviation Safety Agreement with associated implementation procedures for airworthiness concerning airplanes or an equivalent airworthiness agreement *(21.190(d)(1))*, and

10.13.4.2 The aircraft is eligible for an airworthiness certificate, flight authorization, or other similar certification in its country of manufacture *(21.190(d)(2))*.

10.14 *Experimental Certificates*—Experimental certificates are issued for the following purposes *(21.191)*:

10.14.1 *Research and Development*—Testing new aircraft or unmanned aircraft systems design concepts, new aircraft or unmanned aircraft systems equipment, new aircraft or unmanned aircraft systems installations, new aircraft or unmanned aircraft systems operating techniques, or new uses for aircraft or unmanned aircraft systems *(21.191(a))*.

10.14.2 *Showing Compliance with Regulations*—Conducting flight tests and other operations to show compliance with the airworthiness regulations including flights to show compliance for issuance of type and supplemental type certificates, flights to substantiate major design changes, and flights to show compliance with the function and reliability requirements of the regulations *(21.191(b))*.

10.14.3 *Crew Training*—Training of the applicant's flight crews or unmanned aircraft systems pilots or operators *(21.191(c))*.

10.14.4 *Exhibition*—Exhibiting the aircraft's or unmanned aircraft systems' flight capabilities, performance, or unusual characteristics at air shows, motion picture, television, and similar productions, and the maintenance of exhibition flight proficiency, including (for persons exhibiting aircraft) flying to and from such air shows and productions *(21.191(d))*.

10.14.5 *Air Racing*—Participating in air races, including (for such participants) practicing for such air races and flying to and from racing events *(21.191(e))*.

10.14.6 *Market Surveys*—Use of aircraft or unmanned aircraft systems for purposes of conducting market surveys, sales demonstrations, and customer crew training only as provided in 10.16 .

10.14.7 *Operating Amateur-Built Aircraft*—Operating an aircraft the major portion of which has been fabricated and assembled by persons who undertook the construction project solely for their own education or recreation *(21.191(g))*.

10.14.8 *Operating Primary Kit-built Aircraft (21.191(h))*:

10.14.9 *Operating Light-Sport Aircraft*—Operating light-sport aircraft that *(21.191(i))*:

10.14.9.1 Has not been issued a U.S. or foreign airworthiness certificate and does not meet the provisions of section 103.1. An experimental certificate will not be issued under this section for these aircraft after October 31, 2008 *(21.191(i)(1))*.

10.14.9.2 Has been assembled *(21.191(i)(2))*:

(1) From an aircraft kit for which the applicant can provide the information required by 10.15.5 *(21.191(i) (2)(i))*, and

(2) In accordance with manufacturer's assembly instructions that meet an applicable consensus standard *(21.191(i)(2)(ii))*, or

(3) Has been previously issued a special airworthiness certificate in the light-sport category under 10.13 *(21.191(i) (2)(iii))*.

10.15 *Experimental Certificates: General*—An applicant for an experimental certificate must submit the following information *(21.193)*:

10.15.1 A statement, in a form and manner prescribed by the FAA Administrator, setting forth the purpose for which the aircraft or unmanned aircraft system is to be used *(21.193(a))*.

10.15.2 Enough data (such as photographs) to identify the aircraft *(21.193(b))*.

10.15.3 Upon inspection of the aircraft or unmanned aircraft system, any pertinent information found necessary by the FAA Administrator to safeguard the general public *(21.193(c))*.

10.15.4 In the case of an aircraft or unmanned aircraft system to be used for experimental purposes *(21.193(d))*:

10.15.4.1 The purpose of the experiment *(21.193(d) (1))*;

10.15.4.2 The estimated time or number of flights required for the experiment *(21.193(d)(2))*;

10.15.4.3 The areas over which the experiment will be conducted *(21.193(d)(3))*; and

10.15.4.4 Except for aircraft or unmanned aircraft system converted from a previously certificated type without appreciable change in the external configuration, three-view drawings or three-view dimensioned photographs of the aircraft or unmanned aircraft system *(21.193(d)(4))*.

10.15.5 In the case of a light-sport aircraft assembled from a kit to be certificated in accordance with 10.14.9.2, an applicant must provide the following *(21.193(d)(5))*:

10.15.5.1 Evidence that an aircraft of the same make and model was manufactured and assembled by the aircraft kit manufacturer and issued a special airworthiness certificate in the light-sport category *(21.193(d)(5)(i))*;

10.15.5.2 The aircraft's operating instructions *(21.193(d)(5)(ii))*;

10.15.5.3 The aircraft's maintenance and inspection procedures *(21.193(d)(5)(iii))*;

10.15.5.4 The manufacturer's statement of compliance for the aircraft kit used in the aircraft assembly that meets 10.13.3, except that instead of meeting 10.13.3.7, the statement must identify assembly instructions for the aircraft that meet an applicable consensus standard *(21.193(d)(5)(iv))*;

10.15.5.5 The aircraft's flight training supplement *(21.193(d)(5)(v))*; and

10.15.5.6 In addition to 10.15.5.1-10.15.5.5, for an aircraft kit manufactured outside of the United States, evidence that the aircraft kit was manufactured in a country with which the United States has a Bilateral Airworthiness Agreement concerning airplanes or a Bilateral Aviation Safety Agreement with associated implementation procedures for airworthiness concerning airplanes, or an equivalent airworthiness agreement *(21.193(d)(5)(vi))*.

10.16 *Experimental Certificates: Aircraft or Unmanned Aircraft Systems to be Used for Market Surveys, Sales Demonstrations, and Customer Crew Training (21.195)*:

10.16.1 A manufacturer of aircraft or unmanned aircraft systems manufactured within the United States may apply for an experimental certificate for an aircraft or unmanned aircraft system that is to be used for market surveys, sales demonstrations, or customer crew training *(21.195(a))*.

10.16.2 A manufacturer of aircraft or unmanned aircraft system engines who has altered a type-certificated aircraft or unmanned aircraft systems by installing different engines, manufactured by him within the United States, may apply for an experimental certificate for that aircraft or unmanned aircraft systems to be used for market surveys, sales demonstrations, or customer crew training, if the basic aircraft or unmanned aircraft system before alteration was type certificated in the normal, acrobatic, commuter, transport or unmanned aircraft system category *(21.195(b))*.

10.16.3 A person who has altered the design of a type-certificated aircraft or unmanned aircraft system may apply for an experimental certificate for the altered aircraft or unmanned aircraft system to be used for market surveys, sales demonstrations, or customer crew training if the basic aircraft before alteration was type certificated in the normal, utility, acrobatic, transport or unmanned aircraft system category *(21.195(c))*.

10.16.4 An applicant for an experimental certificate under this section is entitled to that certificate if, in addition to meeting the requirements of 10.15 *(21.195(d))*:

10.16.4.1 He has established an inspection and maintenance program for the continued airworthiness of the aircraft or unmanned aircraft system *(21.195(d)(1))*, and

10.16.4.2 He shows that the aircraft or unmanned aircraft system has been flown for at least 50 h or for at least 5 h if it is a type-certificated aircraft or unmanned aircraft system that has been modified *(21.195(d)(2))*.

10.17 *Special Flight Permits (21.197)*:

10.17.1 A special flight permit may be issued for an aircraft or unmanned aircraft system that may not currently meet applicable airworthiness requirements, but is capable of safe flight, for the following purposes *(21.197(a))*:

10.17.1.1 Flying the aircraft or unmanned aircraft system to a base where repairs, alterations, or maintenance are to be performed, or to a point of storage *(21.197(a)(1))*;

10.17.1.2 Delivering or exporting the aircraft or unmanned aircraft system *(21.197(a)(2))*;

10.17.1.3 Production flight testing new production aircraft or unmanned aircraft systems *(21.197(a)(3))*;

10.17.1.4 Evacuating aircraft or unmanned aircraft systems from areas of impending danger *(21.197(a)(4))*; and

10.17.1.5 Conducting customer demonstration flights in new production aircraft or unmanned aircraft systems that have satisfactorily completed production flight tests *(21.197(a)(5))*.

10.17.2 A special flight permit may also be issued to authorize the operation of an aircraft or unmanned aircraft system at a weight in excess of its maximum certificated takeoff weight for flight beyond the normal range over water or over land areas in which adequate landing facilities or appropriate fuel is not available. The excess weight that may be authorized under 10.17 is limited to the additional fuel, fuel-carrying facilities, and navigation equipment necessary for the flight *(21.197(b))*.

10.17.3 As prescribed in sections 121.79 and 135.17, upon application, a special flight permit with a continuing authorization may be issued for aircraft or unmanned aircraft systems that may not meet applicable airworthiness requirements, but are capable of safe flight for the purpose of flying aircraft or unmanned aircraft systems to a base at which maintenance or alterations are to be performed. The permit issued under 10.17 is an authorization, including conditions and limitations for flight, which is set forth in the certificate holder's operations specifications. The permit issued under 10.17 may be issued to *(21.197(c))*:

10.17.3.1 Certificate holders authorized to conduct operations under Part 121 *(21.197(c)(1))*; or

10.17.3.2 Certificate holders authorized to conduct operations under Part 135 for those aircraft they operate and maintain under a continuous airworthiness maintenance program prescribed by section 135.411 (a)(2) or (b) of this Part *(21.197(c)(2))*.

10.17.3.3 Management specification holders authorized to conduct operations under Part 91, Subpart K, for those aircraft they operate and maintain under a continuous airworthiness maintenance program prescribed by section 91.1411.

NOTE 2—The permit issued under this section is an authorization, including any conditions and limitations for flight, which is set forth in the certificate holder's operations specifications *(21.197(a)(3))*.

10.18 *Issue of Special Flight Permits (21.199)*:

10.18.1 Except as provided in 10.17.3, an applicant for a special flight permit must submit a statement in a form and manner prescribed by the Administrator, indicating *(21.199(a))*:

10.18.1.1 The purpose of the flight *(21.199(a)(1))*;

10.18.1.2 The proposed itinerary *(21.199(a)(2))*;

10.18.1.3 The crew required to operate the aircraft or unmanned aircraft system and its equipment, for example, pilot, copilot, navigator, and in the case of an or unmanned aircraft system, the remote pilot and pilot-in-command *(21.199(a)(3))*;

10.18.1.4 The ways, if any, in which the aircraft or unmanned aircraft system does not comply with the applicable airworthiness requirements *(21.199(a)(4))*;

10.18.1.5 Any restriction the applicant considers necessary for safe operation of the aircraft or unmanned aircraft system *(21.199(a)(5))*; and

10.18.1.6 Any other information considered necessary by the FAA Administrator for the purpose of prescribing operating limitations *(21.199(a)(6))*.

10.18.2 The FAA Administrator may make, or require the applicant to make, appropriate inspections or tests necessary for safety *(21.199(b))*.

11. Subpart I—Provisional Airworthiness Certificates

11.1 *Applicability*—This Subpart prescribes procedural requirements for the issue of provisional airworthiness certificates *(21.211)*.

11.2 *Eligibility (21.213)*:

11.2.1 A manufacturer who is a U.S. citizen may apply for a Class I or Class II provisional airworthiness certificate for aircraft manufactured by him within the United States; or a Class I provisional airworthiness certificate for an unmanned aircraft system manufactured by him within the United States *(21.213(a))*.

11.2.2 Any holder of an air carrier operating certificate under Part 121 who is a U.S. citizen may apply for a Class II provisional airworthiness certificate for transport category aircraft that meet either of the following *(21.213(b))*:

11.2.2.1 The aircraft has a current Class II provisional type certificate or an amendment thereto *(21.213(b)(1))*, or

11.2.2.2 The aircraft has a current provisional amendment to a type certificate that was preceded by a corresponding Class II provisional type certificate *(21.213(b)(2))*.

11.2.3 An aircraft engine manufacturer who is a U.S. citizen and who has altered a type-certificated aircraft or unmanned aircraft system by installing different type-certificated engines, manufactured by him within the United States, may apply for a Class I provisional airworthiness certificate for that aircraft or unmanned aircraft system, if the basic aircraft or unmanned aircraft system, before alteration, was type certificated in the normal, utility, acrobatic, commuter, transport or unmanned aircraft system category *(21.213(c))*.

11.3 *Application*—Applications for provisional airworthiness certificates must be submitted to the Manufacturing Inspection District Office in the geographic area in which the manufacturer or air carrier is located. The application must be accompanied by the pertinent information specified in Subpart I of this practice *(21.215)*.

11.4 *Duration*—Unless sooner surrendered, superseded, revoked, or otherwise terminated, provisional airworthiness certificates are effective for the duration of the corresponding provisional type certificate, amendment to a provisional type certificate, or provisional amendment to the type certificate *(21.217)*.

11.5 *Transferability*—Class I provisional airworthiness certificates are not transferable. Class II provisional airworthiness certificates may be transferred to an air carrier eligible to apply for a certificate under 11.2.2 *(21.219)*.

11.6 *Class I Provisional Airworthiness Certificates (21.221)*:

11.6.1 Except as provided in 11.8, an applicant is entitled to a Class I provisional airworthiness certificate for an aircraft or unmanned aircraft system for which a Class I provisional type certificate has been issued if *(21.221(a))*:

11.6.1.1 He meets the eligibility requirements of 11.2 and he complies with 11.6 *(21.221(a)(1))*, and

11.6.1.2 The FAA Administrator finds that there is no feature, characteristic, or condition of the aircraft that would make the aircraft or unmanned aircraft system unsafe when operated in accordance with the limitations established in 5.6.5 of this practice and section 91.317 *(21.221(a)(2))*.

11.6.2 The manufacturer must hold a provisional type certificate for the aircraft or unmanned aircraft system *(21.221(b))*.

11.6.3 The manufacturer must submit a statement that the aircraft or unmanned aircraft system conforms to the type design corresponding to the provisional type certificate and has been found by him to be in safe operating condition under all applicable limitations *(21.221(c))*.

11.6.4 The aircraft or unmanned aircraft system must be flown at least 5 h by the manufacturer *(21.221(d))*.

11.6.5 The aircraft, or in the case of an unmanned aircraft system, the ground control station must be supplied with a provisional flight or operator's manual or other document and appropriate placards containing the limitations established by 5.6.5 and Part 91, section 91.317 *(21.221(e))*.

11.7 *Class II Provisional Airworthiness Certificates (21.223)*:

11.7.1 Except as provided in 11.8, an applicant is entitled to a Class II provisional airworthiness certificate for an aircraft for which a Class II provisional type certificate has been issued if *(21.223(a))*:

11.7.1.1 He meets the eligibility requirements of 11.2 and he complies with 11.7 *(21.223(a)(1))*, and

11.7.1.2 The FAA Administrator finds that there is no feature, characteristic, or condition of the aircraft that would make the aircraft unsafe when operated in accordance with the limitations established in 5.7.8 and sections, 91.317, and 121.207 of 14 CFR Chapter 1 *(21.223(a)(2))*.

11.7.2 The applicant must show that a Class II provisional type certificate for the aircraft has been issued to the manufacturer *(21.223(b))*.

11.7.3 The applicant must submit a statement by the manufacturer that the aircraft has been manufactured under a quality control system adequate to ensure that the aircraft conforms to the type design corresponding with the provisional type certificate *(21.223(c))*.

11.7.4 The applicant must submit a statement that the aircraft has been found by him to be in a safe operating condition under the applicable limitations *(21.223(d))*.

11.7.5 The aircraft must be flown at least 5 h by the manufacturer *(21.223(e))*.

11.7.6 The aircraft must be supplied with a provisional aircraft flight manual containing the limitations established by 5.7.8 and sections 91.317 and 121.207 of 14 CFR Chapter 1 *(21.223(e))*.

11.8 *Provisional Airworthiness Certificates Corresponding with Provisional Amendments to Type Certificates (21.225)*:

11.8.1 An applicant is entitled to a Class I or a Class II provisional airworthiness certificate for an aircraft or unmanned aircraft system for which a provisional amendment to the type certificate has been issued, if *(21.225(a))*:

11.8.1.1 He meets the eligibility requirements of 11.2 and he complies with 11.8 and; (21.225(a)(1))

11.8.1.2 The FAA Administrator finds that there is no feature, characteristic, or condition of the aircraft or unmanned aircraft system, as modified in accordance with the provisionally amended type certificate, that would make the aircraft or unmanned aircraft system unsafe when operated in accordance with the applicable limitations established in 5.8.7 and sections 91.317 and 121.207 of 14 CFR Chapter 1 *(21.225(a)(2))*.

11.8.2 The applicant must show that the modification was made under a quality control system adequate to ensure that the modification conforms to the provisionally amended type certificate *(21.225(b))*.

11.8.3 The applicant must submit a statement that the aircraft or unmanned aircraft system has been found by him to be in a safe operating condition under the applicable limitations *(21.225(c))*.

11.8.4 The aircraft or unmanned aircraft system must be flown at least 5 h by the manufacturer *(21.225(d))*.

11.8.5 The aircraft must be supplied with a provisional aircraft flight manual or other document and appropriate placards containing the limitations required by 5.8.7 and sections 91.317 and 121.207. An unmanned aircraft system shall have the required documentation available at the ground control station *(21.225(e))*.

12. Subpart J—Delegation Option Authorization Procedures

12.1 *Applicability*—This Subpart prescribes procedures for *(21.231)*:

12.1.1 Obtaining and using a delegation option authorization for type, production, and airworthiness certification (as applicable) of *(21.231(a))*:

12.1.1.1 Small airplanes and small gliders *(21.231(a)(1))*;

12.1.1.2 Commuter category airplanes *(21.231(a)(2))*;

12.1.1.3 Light unmanned aircraft systems;

12.1.1.4 Normal category rotorcraft *(21.231(a)(3))*;

12.1.1.5 Turbojet engines of not more than 1000-lbf (4448-N) thrust *(21.231(a)(4))*;

12.1.1.6 Turbo-propeller and reciprocating engines of not more than 500 brake horsepower *(21.231(a)(5))*, and

12.1.1.7 Propellers manufactured for use on engines covered by 12.1.1.4, and *(21.231(a)(6))*;

12.1.2 Issuing airworthiness approval tags for engines, propellers, and parts of products covered by 12.1.1 *(21.231(b))*.

12.2 *Application* (21.235)

12.2.1 An application for a delegation option authorization must be submitted, in a form and manner prescribed by the FAA Administrator, to the Aircraft Certification Office for the area in which the manufacturer is located *(21.235(a))*.

12.2.2 The application must include the names, signatures, and titles of the persons for whom authorization to sign airworthiness certificates, repair and alteration forms, and inspection forms is requested *(21.235(b))*.

12.3 *Eligibility*—To be eligible for a delegation option authorization, the applicant must *(21.239)*:

12.3.1 Hold a current type certificate issued to him under the standard procedures for a product type-certificated under the same part as the products for which the delegation option authorization is sought *(21.239(a))*;

12.3.2 Hold a current production certificate issued under the standard procedures *(21.239(b))*;

12.3.3 Employ a staff of engineering, flight test, production, and inspection personnel who can determine compliance with the applicable airworthiness requirements of this 14 CFR Chapter 1 *(21.239(c))*; and

12.3.4 Meet the requirements of this Subpart *(21.239(d))*.

12.4 *Duration*—A delegation option authorization is effective until it is surrendered or the FAA Administrator suspends, revokes, or otherwise terminates it *(21.243)*.

12.5 *Maintenance of Eligibility*—The holder of a delegation option authorization shall continue to meet the requirements for issue of the authorization or shall notify the FAA Administrator within 48 h of any change (including a change of personnel) that could affect the ability of the holder to meet those requirements *(21.245)*.

12.6 *Transferability*—A delegation option authorization is not transferable *(21.247)*.

12.7 *Inspections*—Upon request, each holder of a delegation option authorization and each applicant shall let the FAA Administrator inspect his organization, facilities, product, and records *(21.249)*.

12.8 *Limits of Applicability (21.251)*:

12.8.1 Delegation option authorizations apply only to products that are manufactured by the holder of the authorization *(21.251(a))*.

12.8.2 Delegation option authorizations may be used for *(21.251(b))*:

12.8.2.1 Type certification *(21.251(b)(1))*;

12.8.2.2 Changes in the type design of products for which the manufacturer holds, or obtains, a type certificate *(21.251(b)(2))*;

12.8.2.3 The amendment of a production certificate held by the manufacturer to include additional models or additional types for which he holds or obtains a type certificate *(21.251(b)(3))*; and

12.8.2.4 The issue of *(21.251(b)(4))*:

(1) Experimental certificates for aircraft for which the manufacturer has applied for a type certificate or amended type certificate under 12.9 to permit the operation of those aircraft or unmanned aircraft systems for the purpose of research and development, crew training, market surveys, or the showing of compliance with the applicable airworthiness requirements *(21.251(b)(4)(i))*;

(2) Airworthiness certificates (other than experimental certificates) for aircraft or unmanned aircraft system for which the manufacturer holds a type certificate and holds or is in the process of obtaining a production certificate *(21.251(b)(4)(ii))*;

(3) Airworthiness approval tags (FAA Form 8130-3) for engines and propellers for which the manufacturer holds a type certificate and holds or is in the process of obtaining a production certificate *(21.251(b)(4)(iii))*; and

(4) Airworthiness approval tags (FAA Form 8130-3) for parts of products covered by Section 12 *(21.251(b)(4)(iv))*.

12.8.3 Delegation option procedures may be applied to one or more types selected by the manufacturer, who must notify the FAA of each model and of the first serial number of each model manufactured by him under the delegation option procedures. Other types or models may remain under the standard procedures *(21.251(c))*.

12.8.4 Delegation option authorizations are subject to any additional limitations prescribed by the FAA Administrator after inspection of the applicant's facilities or review of the staff qualifications *(21.251(d))*.

12.9 *Type Certificates–Application*—To obtain under the delegation option authorization a type certificate for a new product or an amended type certificate, the manufacturer must submit to the FAA Administrator *(21.253)*:

12.9.1 An application for a type certificate (FAA Form 312) *(21.253(a))*;

12.9.2 A statement listing the airworthiness requirements of 14 CFR Chapter 1 (by part number and effective date) that the manufacturer considers applicable *(21.253(b))*;

12.9.3 After determining that the type design meets the applicable requirements, a statement certifying that this determination has been made *(21.253(c))*;

12.9.4 After placing the required technical data and type inspection report in the technical data file required by 12.19.1.1*(1)*, a statement certifying that this has been done *(21.253(d))*;

12.9.5 A proposed type certificate data sheet *(21.253(e))*; and

12.9.6 An Aircraft Flight Manual (if required) or unmanned aircraft system operator's manual or a summary of required operating limitations and other information necessary for safe operation of the product *(21.253(f))*.

12.10 *Type Certificates–Issue*—An applicant is entitled to a type certificate for a product manufactured under a delegation option authorization if the FAA Administrator finds that the product meets the applicable airworthiness, noise, fuel venting, and exhaust emission requirements (including applicable acoustical change or emissions change requirements in the case of changes in type design) *(21.257)*.

12.11 *Equivalent Safety Provisions*—The manufacturer shall obtain the FAA Administrator's concurrence on the application of all equivalent safety provisions applied under 4.7 *(21.261)*.

12.12 *Production Certificates*—To have a new model or new type certificate listed on his production certificate (issued under Subpart G of Part 21), the manufacturer must submit to the FAA Administrator *(21.267)*:

12.12.1 An application for an amendment to the production certificate *(21.267(a))*;

12.12.2 After determining that the production certification requirements of Subpart G of Part 21, with respect to the new model or type, are met, a statement certifying that this determination has been made *(21.267(b))*;

12.12.3 A statement identifying the type certificate number under which the product is being manufactured *(21.267(c))*; and

12.12.4 After placing the manufacturing and quality control data required by 9.6 with the data required by12.19.1.1*(2)*, a statement certifying that this has been done *(21.267(d))*.

12.13 *Export Airworthiness Approvals*—The manufacturer may issue export airworthiness approvals *(21.269)*.

12.14 *Airworthiness Approval Tags (21.271)*:

12.14.1 A manufacturer may issue an airworthiness approval tag (FAA Form 8130-3) for each engine and propeller covered by 12.8.2.4 and may issue an airworthiness approval tag for parts of each product covered by that section, if he finds, on the basis of inspection and operation tests, that those products conform to a type design for which he holds a type certificate and are in condition for safe operation *(21.271(a))*.

12.14.2 When a new model has been included on the Production Limitation Record, the production certification number shall be stamped on the engine or propeller identification data place instead of issuing an airworthiness approval tag *(21.271(b))*.

12.15 *Airworthiness Certificates Other Than Experimental (21.273)*:

12.15.1 The manufacturer may issue an airworthiness certificate for aircraft or unmanned aircraft systems manufactured under a delegation option authorization if he finds, on the basis of the inspection and production flight check, that each aircraft or unmanned aircraft system conforms to a type design for which he holds a type certificate and is in a condition for safe operation *(21.273(a))*.

12.15.2 The manufacturer may authorize any employee to sign airworthiness certificates if that employee *(21.273(b))*:

12.15.2.1 Performs, or is in direct charge of, the inspection specified in 12.15.1 *(21.273(b)(1))*, and

12.15.2.2 Is listed on the manufacturer's application for the delegation option authorization or on amendments thereof *(21.273(b)(2))*.

12.16 *Experimental Certificates (21.275)*:

12.16.1 The manufacturer shall, before issuing an experimental certificate, obtain from the Administration any limitations and conditions that the FAA Administrator considers necessary for safety *(21.275(a))*.

12.16.2 For experimental certificates issued by the manufacturer under Part 21 Subpart J, for aircraft or unmanned aircraft systems for which the manufacturer holds the type certificate and which have undergone changes to the type design requiring flight test, the manufacturer may prescribe any operating limitations that he considers necessary *(21.275(b))*.

12.17 *Data Review and Service Experience (21.277)*:

12.17.1 If the FAA Administrator finds that a product for which a type certificate was issued under Part 21 Subpart J does not meet the applicable airworthiness requirements, or that an unsafe feature or characteristic caused by a defect in design or manufacture exists, the manufacturer, upon notification by the Administrator, shall investigate the matter and report to the Administrator the results of the investigation and the action, if any, taken or proposed *(21.277(a))*.

12.17.2 If corrective action by the user of the product is necessary for safety because of any noncompliance or defect specified in 12.17.1, the manufacturer shall submit the information necessary for the issue of an Airworthiness Directive under Part 39 *(21.277(a))*.

12.18 *Major Repairs, Rebuilding, and Alteration*—For types covered by a delegation option authorization, a manufacturer may *(21.289)*:

12.18.1 After finding that a major repair or major alteration meets the applicable airworthiness requirements of 14 CFR Chapter 1, approve that repair or alteration *(21.289(a))*, and

12.18.2 Authorize any employee to execute and sign FAA Form 337 and make required log book entries if that employee *(21.289(b))*:

12.18.2.1 Inspects, or is in direct charge of inspecting, the repair, rebuilding, or alteration *(21.289(b)(1))*, and

12.18.2.2 Is listed on the application for the delegation option authorization, or on amendments thereof *(21.289(b)(2))*.

12.19 *Current Records (21.293)*:

12.19.1 The manufacturer shall maintain at his factory, for each product type certificated under a delegation option authorization, current records containing the following *(21.293(a))*:

12.19.1.1 For the duration of the manufacturing operating under the delegation option authorization *(21.293(a)(1))*:

(1) A technical data file that includes the type design drawings, specifications, reports on tests prescribed by this part, and the original type inspection report and amendments to that report *(21.293(a)(1)(i))*;

(2) The data (including amendments) required to be submitted with the original application for each production certificate *(21.293(a)(1)(ii))*; and

(3) A record of any rebuilding and alteration performed by the manufacturer on products manufactured under the delegation option authorization *(21.293(a)(1)(iii))*.

12.19.1.2 For two years *(21.293(a)(2))*:

(1) A complete inspection record for each product manufactured by serial number and data covering the processes and tests to which materials and parts are subjected *(21.293(a)(2)(i))*, and

(2) A record of reported service difficulties *(21.293(a)(2)(ii))*.

12.19.2 The records and data specified in 12.19.1 shall be *(21.293(b))*:

12.19.2.1 Made available, upon the FAA Administrator's request, for examination by the Administrator at any time *(21.293(b)(1))*, and

12.19.2.2 Identified and sent to the FAA Administrator as soon as the manufacturer no longer operates under the delegation option procedures *(21.293(b)(2))*.

13. Subpart K—Approval of Materials, Parts, Processes, and Appliances

13.1 *Applicability*—This Subpart prescribes procedural requirements for the approval of certain materials, parts, processes, and appliances *(21.301)*.

13.2 *Replacement and Modification Parts (21.303)*:

13.2.1 Except as provided in 13.2.2, no person may produce a modification or replacement part for sale for installation on a type-certificated product unless it is produced pursuant to a Parts Manufacturer Approval issued under Subpart K of Part 21 *(21.303(a))*.

13.2.2 This section does not apply to the following *(21.303(b))*:

13.2.2.1 Parts produced under a type or production certificate *(21.303(b)(1))*,

13.2.2.2 Parts produced by an owner or operator for maintaining or altering his own product *(21.303(b)(2))*,

13.2.2.3 Parts produced under an FAA Technical Standard Order *(21.303(b)(3))*, and

13.2.2.4 Standard parts (such as bolts and nuts) conforming to established industry or U.S. specifications *(21.303(b)(4))*.

13.2.3 An application for a Parts Manufacturer Approval is made to the Manager of the Aircraft Certification Office for the geographic area in which the manufacturing facility is located and must include the following *(21.303(c))*:

13.2.3.1 The identity of the product on which the part is to be installed *(21.303(c)(1))*.

13.2.3.2 The name and address of the manufacturing facilities at which these parts are to be manufactured *(21.303(c)(2))*.

13.2.3.3 The design of the part, which consists of *(21.303(c)(3))*:

(1) Drawings and specifications necessary to show the configuration of the part *(21.303(c)(3)(i))*, and

(2) Information on dimensions, materials, and processes necessary to define the structural strength of the part *(21.303(c)(3)(ii))*.

13.2.3.4 Test reports and computations necessary to show that the design of the part meets the airworthiness requirements of the Federal Aviation Regulations applicable to the product on which the part is to be installed, unless the applicant shows that the design of the part is identical to the design of a part that is covered under a type certificate. If the design of the part was obtained by a licensing agreement, evidence of that agreement must be furnished *(21.303(c)(4))*.

13.2.4 An applicant is entitled to a Parts Manufacturer Approval for a replacement or modification part if *(21.303(d))*:

13.2.4.1 The FAA Administrator finds, upon examination of the design and after completing all tests and inspections, that the design meets the airworthiness requirements of the Federal Aviation Regulations applicable to the product on which the part is to be installed *(21.303(d)(1))*, and

13.2.4.2 He submits a statement certifying that he has established the fabrication inspection system required by 13.2.8 *(21.303(d)(2))*.

13.2.5 Each applicant for a Parts Manufacturer Approval must allow the FAA Administrator to make any inspection or test necessary to determine compliance with the applicable Federal Aviation Regulations. However, unless otherwise authorized by the FAA Administrator *(21.303(e))*:

13.2.5.1 No part may be presented to the FAA Administrator for an inspection or test unless compliance with 13.2.6.2 through 13.2.6.4 has been shown for that part *(21.303(e)(1))*, and

13.2.5.2 No change may be made to a part between the time that compliance with 13.2.6.2 through 13.2.6.4 is shown for that part and the time that the part is presented to the FAA Administrator for the inspection or test *(21.303(e)(2))*.

13.2.6 Each applicant for a Parts Manufacturer Approval must make all inspections and tests necessary to determine *(21.303(f))*:

13.2.6.1 Compliance with the applicable airworthiness requirements *(21.303(f)(1))*,

13.2.6.2 That materials conform to the specifications in the design *(21.303(f)(2))*,

13.2.6.3 That the part conforms to the drawings in the design *(21.303(f)(3))*, and

13.2.6.4 That the fabrication processes, construction, and assembly conform to those specified in the design *(21.303(f)(4))*.

13.2.7 The FAA Administrator does not issue a Parts Manufacturer Approval if the manufacturing facilities for the part are located outside of the United States, unless the Administrator finds that the location of the manufacturing facilities places no burden on the FAA in administering applicable airworthiness requirements *(21.303(g))*.

13.2.8 Each holder of a Parts Manufacturer Approval shall establish and maintain a fabrication inspection system that ensures that each completed part conforms to its design data and is safe for installation on applicable type-certificated products. The system shall include the following *(21.303(h))*:

13.2.8.1 Incoming materials used in the finished part must be as specified in the design data *(21.303(h)(1))*.

13.2.8.2 Incoming materials must be properly identified if their physical and chemical properties cannot otherwise be readily and accurately determined *(21.303(h)(2))*.

13.2.8.3 Materials subject to damage and deterioration must be suitably stored and adequately protected *(21.303(h)(3))*.

13.2.8.4 Processes affecting the quality and safety of the finished product must be accomplished in accordance with acceptable specifications *(21.303(h)(4))*.

13.2.8.5 Parts in process must be inspected for conformity with the design data at points in production where accurate determination can be made. Statistical quality control procedures may be used where it is shown that a satisfactory level of quality will be maintained for the particular part involved *(21.303(h)(5))*.

13.2.8.6 Current design drawings must be readily available to manufacturing and inspection personnel and used when necessary *(21.303(h)(6))*.

13.2.8.7 Major changes to the basic design must be adequately controlled and approved before being incorporated in the finished part *(21.303(h)(7))*.

13.2.8.8 Rejected materials and components must be segregated and identified in such a manner as to preclude their use in the finished part *(21.303(h)(8))*.

13.2.8.9 Inspection records must be maintained, identified with the completed part, where practicable, and retained in the manufacturer's file for a period of at least two years after the part has been completed *(21.303(h)(9))*.

13.2.9 A Parts Manufacturer Approval issued under section 21.303 is not transferable and is effective until surrendered or withdrawn or otherwise terminated by the FAA Administrator *(21.303(i))*.

13.2.10 The holder of a Parts Manufacturer Approval shall notify the FAA in writing within ten days from the date the manufacturing facility at which the parts are manufactured is relocated or expanded to include additional facilities at other locations *(21.303(j))*.

13.2.11 Each holder of a Parts Manufacturer Approval shall determine that each completed part conforms to the design data and is safe for installation on type-certificated products *(21.303(k))*.

13.3 *Approval of Materials, Parts, Processes, and Appliances*—Whenever a material, part, process, or appliance is required to be approved under 14 CFR Chapter 1, it may be approved *(21.305)*:

13.3.1 Under a Parts Manufacturer Approval issued under Part 21, section 21.303 *(21.305(a))*;

13.3.2 Under a Technical Standard Order issued by the FAA Administrator. FAA Advisory Circular 20-110 contains a list of Technical Standard Orders that may be used to obtain approval. Copies of the Advisory Circular may be obtained from the U.S. Department of Transportation, Publication Section (M-443.1), Washington, DC 20590 *(21.305(b))*;

13.3.3 In conjunction with type certification procedures for a product *(21.305(c))*; or

13.3.4 In any other manner approved by the FAA Administrator *(21.305(d))*.

14. Subpart L—Export Airworthiness Approvals

14.1 *Applicability*—This Subpart prescribes *(21.321(a))*:

14.1.1 Procedural requirements for the issue of export airworthiness approvals *(21.321(a)(1))*, and

14.1.2 Rules governing the holders of those approvals *(21.321(a)(2))*.

14.1.3 For the purposes of this Subpart *(21.321(b))*:

14.1.3.1 A Class I product is a complete aircraft, unmanned aircraft system, aircraft engine, fan jets, rotors or propeller that *(21.321(b)(1))*:

(1) Has been type certificated in accordance with the applicable Federal Aviation Regulations and for which Federal Aviation Specifications or type certificate data sheets have been issued *(21.321(b)(1)(i))*, or

(2) Is identical to a type-certificated product specified in 14.1.3.1*(1)* in all respects except as is otherwise acceptable to the civil aviation authority of the importing state *(21.321(b)(1)(ii))*.

14.1.3.2 A Class II product is a major component of a Class I product (for example, wings, fuselages, empennage assemblies, landing gears, power transmissions, control surfaces, etc), the failure of which would jeopardize the safety of a Class I product or any part, material, or appliance approved and manufactured under the Technical Standard Order (TSO) system in the "C" series *(21.321(b)(2))*.

14.1.3.3 A Class III product is any part or component that is not a Class I or Class II product and includes standard parts, that is, those designated as AN, NAS, SAE, etc. *(21.321(b)(3))*.

14.1.3.4 The words "newly overhauled" when used to describe a product means that the product 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 Federal Aviation Regulations *(21.321(b)(4))*.

14.2 *Eligibility (21.323)*:

14.2.1 Any exporter or his authorized representative may obtain an export airworthiness approval for a Class I or Class II product *(21.323(a))*.

14.2.2 Any manufacturer may obtain an export airworthiness approval for a Class III product if the manufacturer *(21.323(b))*:

14.2.2.1 Has in his employ a designated representative of the FAA Administrator who has been authorized to issue that approval *(21.323(b)(1))*, and

14.2.2.2 Holds for that product *(21.323(b)(2))*:

(1) A production certificate *(21.323(b)(2)(i))*,

(2) An approved production inspection system *(21.323(b)(2)(ii))*,

(3) An FAA Parts Manufacturer Approval (PMA) *(21.323(b)(2)(iii))*, or

(4) A Technical Standard Order authorization *(21.323(b)(2)(iv))*.

14.3 *Export Airworthiness Approvals (21.325)*:

14.3.1 *Kinds of Approvals (21.325(a))*:

14.3.1.1 Export airworthiness approval of Class I products is issued in the form of Export Certificates of Airworthiness, FAA Form 8130-4. Such a certificate does not authorize the operation of aircraft *(21.325(a)(1))*.

14.3.1.2 Export airworthiness approval of Class II and III products is issued in the form of Airworthiness Approval Tags, FAA Form 8130-3 *(21.325(a)(2))*.

14.3.2 *Products That May Be Approved*—Export airworthiness approvals are issued for *(21.325(b))*:

14.3.2.1 New aircraft or unmanned aircraft systems that are assembled and have been flight tested and other Class I products located in the United States except that export airworthiness approval may be issued for any of the following without assembly or flight test *(21.325(b)(1))*:

(1) A small airplane type certificated under Part 3 or 4a of the Civil Air Regulations or Part 23 of 14 CFR Chapter 1 and manufactured under a production certificate;

(2) A glider type certificated under 4.8 and manufactured under a production certificate *(21.325(b)(1)(ii))*; or

(3) A normal category rotorcraft type certificated under Part 6 of the Civil Air Regulations or Part 27 of 14 CFR Chapter 1 and manufactured under a production certificate *(21.325(b)(1)(iii))*;

14.3.2.2 Used aircraft possessing a valid U.S. airworthiness certificate or other used Class I products that have been maintained in accordance with the applicable CARs or FARs and are located in a foreign country if the FAA Administrator finds that the location places no undue burden upon the FAA in administering the provisions of this regulation *(21.325(b)(2))*; and

14.3.2.3 Class II and III products that are manufactured and located in the United States *(21.325(b)(3))*.

14.3.3 *Export Airworthiness Approval Exceptions*—If the export airworthiness approval is issued on the basis of a written statement by the importing state as provided for in 14.4.5.4, the requirements that are not met and the differences in configuration, if any, between the product to be exported and the related type-certificated product are listed on the export airworthiness approval as exceptions *(21.325(c))*.

14.4 *Application* (21.327)

14.4.1 Except as provided in 14.4.2, an application for export airworthiness approval for a Class I or Class II product is made on a form and in a manner prescribed by the FAA Administrator and is submitted to the appropriate Flight Standards District Office or to the nearest international field office *(21.327(a))*.

14.4.2 A manufacturer holding a production certificate may apply orally to the appropriate FAA Flight Standards District Office or the nearest international field office for export airworthiness approval of a Class II product approved under his production certificate *(21.327(b))*.

14.4.3 Application for export airworthiness approval of Class III products is made to the designated representative of the Administrator authorized to issue those approvals *(21.327(c))*.

14.4.4 A separate application must be made for *(21.327(d))*:

14.4.4.1 Each aircraft or each unmanned aircraft system *(21.327(d)(1))*;

14.4.4.2 Each engine and propeller, except that one application may be made for more than one engine or propeller, if all are of the same type and model and are exported to the same purchaser and country *(21.327(d)(2))*; and

14.4.4.3 Each type of Class II product, except that one application may be used for more than one type of Class II product when *(21.327(d)(3))*:

(1) They are separated and identified in the application as to the type and model of the related Class I product *(21.327(d)(3)(i))*, and

(2) They are to be exported to the same purchaser and country *(21.327(d)(3)(ii))*.

14.4.5 Each application must be accompanied by a written statement from the importing country that will validate the export airworthiness approval if the product being exported is *(21.327(e))*:

14.4.5.1 An aircraft or unmanned aircraft system manufactured outside the United States and being exported to a country with which the United States has a reciprocal agreement concerning the validation of export certificates *(21.327(e)(1))*;

14.4.5.2 An unassembled aircraft or unmanned aircraft system t that has not been flight tested *(21.327(e)(2))*;

14.4.5.3 A product that does not meet the special requirement of the importing country *(21.327(e)(3))*; or

14.4.5.4 A product that does not meet a requirement specified in 14.5 through 14.7, as applicable, for the issuance of an export airworthiness approval. The written statement must list the requirements not met *(21.327(e)(4))*.

14.4.6 Each application for export airworthiness approval of a Class I product must include, as applicable *(21.327(f))*:

14.4.6.1 A Statement of Conformity, FAA Form 8130-9, for each new product that has not been manufactured under a production certificate *(21.327(f)(1))*;

14.4.6.2 A weight and balance report, with a loading schedule when applicable, for each aircraft or unmanned aircraft system in accordance with Part 43 of 14 CFR Chapter 1. For transport aircraft and commuter category airplanes, this report must be based on an actual weighing of the aircraft within the preceding 12 months, but after any major repairs or alterations to the aircraft. Changes in equipment not classed as major changes that are made after the actual weighing may be accounted for on a "computed" basis and the report revised accordingly. Manufacturers of new non-transport category airplanes, normal category rotorcraft, unmanned aircraft systems, and gliders may submit reports having computed weight and balance data, in place of an actual weighing of the aircraft or unmanned aircraft systems, if fleet weight control procedures approved by the FAA have been established for such aircraft. In such a case, the following statement must be entered in each report: "The weight and balance data shown in this report are computed on the basis of Federal Aviation Administration approved procedures for establishing fleet weight averages." The weight and balance report must include an equipment list showing weights and moment arms of all required and optional items of equipment that are included in the certificated empty weight *(21.327(f)(2))*;

14.4.6.3 A maintenance manual for each new product when such a manual is required by the applicable airworthiness rules *(21.327(f)(3))*;

14.4.6.4 Evidence of compliance with the applicable airworthiness directives. A suitable notation must be made when such directives are not complied with *(21.327(f)(4))*;

14.4.6.5 When temporary installations are incorporated in an aircraft or unmanned aircraft system for the purpose of export delivery, the application form must include a general description of the installations together with a statement that the installation will be removed and the aircraft or unmanned aircraft system restored to the approved configuration upon completion of the delivery flight *(21.327(f)(5))*;

14.4.6.6 Historical records such as aircraft, unmanned aircraft system and engine logbooks, repair and alteration forms, etc., for used aircraft or unmanned aircraft system and newly overhauled products *(21.327(f)(6))*;

14.4.6.7 For products intended for overseas shipment, the application form must describe the methods used, if any, for the preservation and packaging of such products to protect them against corrosion and damage while in transit or storage. The description must also indicate the duration of the effectiveness of such methods *(21.327(f)(7))*;

14.4.6.8 The airplane or rotorcraft or unmanned aircraft system Flight Manual or operator's manual when such material is required by the applicable airworthiness regulations for the particular aircraft or unmanned aircraft systems *(21.327(f)(8))*;

14.4.6.9 A statement as to the date when title passed or is expected to pass to a foreign purchaser *(21.327(f)(9))*; and

14.4.6.10 The data required by the special requirements of the importing country *(21.327(f)(10))*.

14.5 *Issue of Export Certificates of Airworthiness for Class I Products*—An applicant is entitled to an export certificate of airworthiness for a Class I product if that applicant shows at the time the product is submitted to the FAA Administrator for export airworthiness approval that it meets the requirements of 14.5.1 through 14.5.6, as applicable, except as provided in 14.5.7 *(21.329)*:

14.5.1 New or used aircraft or unmanned aircraft systems manufactured in the United States must meet the airworthiness requirement for a standard U.S. airworthiness certificate under 10.8 or meet the airworthiness certification requirements for a "restricted" airworthiness certificate under 10.10 *(21.329(a))*.

14.5.2 New or used aircraft or unmanned aircraft systems manufactured outside the United States must have a valid U.S. standard airworthiness certificate *(21.329(b))*.

14.5.3 Used aircraft or unmanned aircraft systems must have undergone an annual type inspection and be approved for return to service in accordance with Part 43. The inspection must have been performed and properly documented within 30 days before the date the application is made for an export certificate of airworthiness. In complying with this section, consideration may be given to the inspections performed on an aircraft or unmanned aircraft system maintained in accordance with a continuous airworthiness maintenance program under Part 121 or a progressive inspection program under Part 91, within the 30 days before the date the application is made for an export certificate of airworthiness *(21.329(c))*.

14.5.4 New engines and propellers must conform to the type design and must be in a condition for safe operation *(21.329(d))*.

14.5.5 Used engines and propellers that are not being exported as part of a certificated aircraft must have been newly overhauled *(21.329(e))*.

14.5.6 The special requirements of the importing country must have been met *(21.329(f))*.

14.5.7 A product need not meet a requirement specified in 14.5.1 through 14.5.6, as applicable, if acceptable to the importing country and the importing country indicates that acceptability in accordance with 14.4.5.4 *(21.329(g))*.

14.6 *Issue of Airworthiness Approval Tags for Class II Products (21.331)*:

14.6.1 An applicant is entitled to an export airworthiness approval tag for Class II products if that applicant shows, except as provided in 14.6.2, that *(21.331(a))*:

14.6.1.1 The products are new or have been newly overhauled and conform to the approved design data *(21.331(a)(1))*;

14.6.1.2 The products are in a condition for safe operation *(21.331(a)(2))*;

14.6.1.3 The products are identified with at least the manufacturer's name, part number, model designation (when applicable), and serial number or equivalent *(21.331(a)(3))*; and

14.6.1.4 The products meet the special requirements of the importing country *(21.331(a)(4))*.

14.6.2 A product need not meet a requirement specified in 14.6.1 if acceptable to the importing country and the importing country indicates that acceptability in accordance with 14.4.5.4 *(21.331(b))*.

14.7 *Issue of Export Airworthiness Approval Tags for Class III Products (21.333)*:

14.7.1 An applicant is entitled to an export airworthiness approval tag for Class III products if that applicant shows, except as provided in 14.7.2, that *(21.333(a))*:

14.7.1.1 The products conform to the approved design data applicable to the Class I or Class II product of which they are a part *(21.333(a)(1))*;

14.7.1.2 The products are in a condition for safe operation *(21.333(a)(2))*; and

14.7.1.3 The products comply with the special requirements of the importing country *(21.333(a)(3))*.

14.7.2 A product need not meet a requirement specified in 14.7.1 if acceptable to the importing country and the importing country indicates that acceptability in accordance with 14.4.5.4 *(21.333(b))*.

14.8 *Responsibilities of Exporters*—Each exporter receiving an export airworthiness approval for a product shall *(21.335)*:

14.8.1 Forward to the air authority of the importing country all documents and information necessary for the proper operation of the products being exported, for example, flight manuals, maintenance manuals, service bulletins, assembly instructions, and such other material as is stipulated in the special requirements of the importing country. The documents, information, and material may be forwarded by any means consistent with the special requirements of the importing country *(21.335(a))*;

14.8.2 Forward the manufacturer's assembly instructions and an FAA-approved flight test check-off form to the air authority of the importing country when unassembled aircraft or unmanned aircraft systems are being exported. These instructions must be in sufficient detail to permit whatever rigging, alignment, and ground testing is necessary to ensure that the aircraft or unmanned aircraft system will conform to the approved configuration when assembled *(21.335(b))*;

14.8.3 Remove, or cause to be removed, any temporary installation incorporated on an aircraft or unmanned aircraft system for the purpose of export delivery and restore the aircraft or unmanned aircraft system to the approved configuration upon completion of the delivery flight *(21.335(c))*;

14.8.4 Secure all proper foreign entry clearances from all the countries involved when conducting sales demonstrations or delivery flights *(21.335(d))*; and

14.8.5 When title to an aircraft or unmanned aircraft system passes or has passed to a foreign purchaser *(21.335(e))*:

14.8.5.1 Request cancellation of the U.S. registration and airworthiness certificates giving the date of transfer of title, and the name and address of the foreign owner *(21.335(e)(1))*;

14.8.5.2 Return the Registration and Airworthiness Certificates, AC Form 8050.3 and FAA Form 8100-2, to the FAA *(21.335(e)(2))*; and

14.8.5.3 Submit a statement certifying that the U.S. identification and registration numbers have been removed from the aircraft in compliance with Part 45, section 45.33 *(21.335(e)(3))*.

14.9 *Performance of Inspections and Overhauls*—Unless otherwise provided for in Subpart L, each inspection and overhaul required for export airworthiness approval of Class I and Class II products must be performed and approved by one of the following *(21.337)*:

14.9.1 The manufacturer of the product *(21.337(a))*;

14.9.2 An appropriately certificated domestic repair station *(21.337(b))*;

14.9.3 An appropriately certificated foreign repair station having adequate overhaul facilities and maintenance organization appropriate to the product involved when the product is a Class I product located in a foreign country and an international office of Flight Standards Service has approved the use of such foreign repair station *(21.337(c))*;

14.9.4 The holder of an inspection authorization as provided in Part 65 *(21.337(d))*;

14.9.5 An air carrier when the product is one that the carrier has maintained under its own or another air carrier's continuous airworthiness maintenance program and maintenance manuals as provided in Part 121 *(21.337(e))*; and

14.9.6 A commercial operator when the product is one that the operator has maintained under its continuous airworthiness maintenance program and maintenance manual as provided in Part 121 *(21.337(f))*.

14.10 *Special Export Airworthiness Approval for Aircraft or Unmanned Aircraft System*—A special export certificate of airworthiness may be issued for an aircraft or unmanned aircraft system located in the United States that is to be flown to several foreign countries for the purpose of sale without returning the aircraft or unmanned aircraft system to the United States for the certificate if *(21.339)*:

14.10.1 The aircraft or unmanned aircraft system possesses either: (21.339(a))

14.10.1.1 A standard U.S. certificate of airworthiness *(21.339(a)(1))*, or

14.10.1.2 A special U.S. certificate of airworthiness in the restricted category issued under 10.10 *(21.339(a)(2))*;

14.10.2 The owner files an application as required by 14.4 except that Items 3 and 4 of the application (FAA Form 8130-1) need not be completed *(21.339(b))*;

14.10.3 The aircraft or unmanned aircraft system is inspected by the FAA Administrator before leaving the United States and is found to comply with all the applicable requirements *(21.339(c))*;

14.10.4 A list of foreign countries in which it is intended to conduct sales demonstrations, together with the expected dates and duration of such demonstration, is included in the application *(21.339(d))*;

14.10.5 For each prospective importing country, the applicant shows that *(21.339(e))*:

14.10.5.1 He has met that country's special requirements, other than those requiring that documents, information, and materials be furnished *(21.339(e)(1))*; and

14.10.5.2 He has the documents, information, and materials necessary to meet the special requirements of that country *(21.339(e)(2))*;

14.10.6 All other requirements for the issuance of a Class I export certificate of airworthiness are met *(21.339(f))*.

15. Subpart M—Designated Alteration Station Authorization Procedures

15.1 *Applicability (21.431)*:

15.1.1 This Subpart prescribes Designated Alteration Station (DAS) authorization procedures for *(21.431(a))*:

15.1.1.1 Issuing supplemental type certificates *(21.431(a)(1))*;

15.1.1.2 Issuing experimental certificates *(21.431(a)(2))*; and

15.1.1.3 Amending standard airworthiness certificates *(21.431(a)(3))*.

15.1.2 This Subpart applies to domestic repair stations, air carriers, commercial operators of large aircraft, and manufacturers of products *(21.431(b))*.

15.2 *Application*—The applicant for a DAS authorization must submit an application, in writing and signed by an official of the applicant, to the FAA Aircraft Certification Office responsible for the geographic area in which the applicant is located. The application must contain *(21.435)*:

15.2.1 The repair station certificate number held by the repair station applicant and the current ratings covered by the certificate *(21.435(a))*;

15.2.2 The air carrier or commercial operator operating certificate number held by the air carrier or commercial operator applicant and the products that it may operate and maintain under the certificate *(21.435(b))*;

15.2.3 A statement by the manufacturer applicant of the products for which he holds the type certificate *(21.435(c))*;

15.2.4 The names, signatures, and titles of the persons for whom authorization to issue supplemental type certificates or experimental certificates or amend airworthiness certificates is requested *(21.435(d))*; and

15.2.5 A description of the applicant's facilities and the staff with which compliance with 15.3.1.4 is to be shown *(21.435(e))*.

15.3 *Eligibility (21.439)*:

15.3.1 To be eligible for a DAS authorization, the applicant must *(21.439(a))*:

15.3.1.1 Hold a current domestic repair station certificate under Part 145 or air carrier or commercial operator operating certificate under Part 121 *(21.439(a)(1))*;

15.3.1.2 Be a manufacturer of a product for which it has alteration authority under Part 43, section 43.3(i) *(21.439(a)(2))*;

15.3.1.3 Have adequate maintenance facilities and personnel, in the United States, appropriate to the products that it may operate and maintain under its certificate *(21.439(a)(3))*; and

15.3.1.4 Employ, or have available, a staff of engineering, flight test, and inspection personnel who can determine compliance with the applicable airworthiness requirements of 14 CFR Chapter 1 *(21.439(a)(4))*.

15.3.2 At least one member of the staff required by 15.3.1.4 must have all of the following qualifications *(21.439(b))*:

15.3.2.1 A thorough working knowledge of the applicable requirements of 14 CFR Chapter 1 *(21.439(b)(1))*;

15.3.2.2 A position on the applicant's staff with authority to establish alteration programs that ensure that altered products meet the applicable requirements of 14 CFR Chapter 1 *(21.439(b)(2))*;

15.3.2.3 At least one year of satisfactory experience in direct contact with the FAA (or its predecessor agency (CAA)) while processing engineering work for type certification or alteration projects *(21.439(b)(3))*;

15.3.2.4 At least eight years of aeronautical engineering experience (which may include the one year required by 15.3.2.3) *(21.439(b)(4))*; and

15.3.2.5 The general technical knowledge and experience necessary to determine that altered products of the types for which a DAS authorization is requested are in condition for safe operation *(21.439(b)(5))*.

15.4 *Procedure Manual (21.441)*:

15.4.1 No DAS may exercise any authority under this Subpart unless it submits, and obtains approval of, a procedure manual containing *(21.441(a))*:

15.4.1.1 The procedures for issuing STCs *(21.441(a)(1))*, and

15.4.1.2 The names, signatures, and responsibilities of officials and of each staff member required by 15.3.1.4, identifying those persons who *(21.441(a)(2))*:

(1) Have authority to make changes in procedures that require a revision to the procedure manual *(21.441(a)(2)(i))*, and

(2) Are to conduct inspections (including conformity and compliance inspections) or approve inspection reports, prepare or approve data, plan or conduct tests, approve the results of tests, amend airworthiness certificates, issue experimental certificates, approve changes to operating limitations, Aircraft Flight Manuals or unmanned aircraft system operating manuals, and sign supplemental type certificates *(21.441(a)(2)(ii))*.

15.4.2 No DAS may continue to perform any DAS function affected by any change in facilities or staff necessary to continue to meet the requirements of 15.3, or affected by any change in procedures from those approved under 15.4.1, unless that change is approved and entered in the manual. For this purpose, the manual shall contain a log-of-revisions page with space for the identification of each revised item, page, or date and the signature of the person approving the change for the FAA Administrator *(21.441(b))*.

15.5 *Duration (21.443)*:

15.5.1 A DAS authorization is effective until it is surrendered or the FAA Administrator suspends, revokes, or otherwise terminates it *(21.443(a))*.

15.5.2 The DAS shall return the authorization certificate to the FAA Administrator when it is no longer effective *(21.443(b))*.

15.6 *Maintenance of Eligibility*—The DAS shall continue to meet the requirements for issue of the authorization or shall notify the FAA Administrator within 48 h of any change (including a change of personnel) that could affect the ability of the DAS to meet those requirements *(21.445)*.

15.7 *Transferability*—A DAS authorization is not transferable *(21.447)*.

15.8 *Inspections*—Upon request, each DAS and each applicant shall let the FAA Administrator inspect his facilities, products, and records *(21.449)*.

15.9 *Limits of Applicability (21.451)*:

15.9.1 DAS authorizations apply only to products *(21.451(a))*:

15.9.1.1 Covered by the ratings of the repair station applicant *(21.451(a)(1))*;

15.9.1.2 Covered by the operating certificate and maintenance manual of the air carrier or commercial operator applicant *(21.451(a)(2))*; and

15.9.1.3 For which the manufacturer applicant has alteration authority under Part 43, section 43.3(i) *(21.451(a)(3))*.

15.9.2 DAS authorizations may be used for *(21.451(b))*:

15.9.2.1 The issue of supplemental type certificates *(21.451(b)(1))*;

15.9.2.2 The issue of experimental certificates for aircraft that *(21.451(b)(2))*:

(1) Are altered by the DAS under a supplemental type certificate issued by the DAS *(21.451(b)(2)(i))*;

(2) Require flight tests to show compliance with the applicable airworthiness requirements of 14 CFR Chapter 1 *(21.451(b)(2)(ii))*; and

15.9.2.3 The amendment of standard airworthiness certificates for aircraft altered under this Subpart *(21.451(b)(3))*.

15.9.3 DAS authorizations are subject to any additional limitations prescribed by the FAA Administrator after inspection of the applicant's facilities or review of the staff qualifications *(21.451(c))*.

15.9.4 Notwithstanding any other provision of this Subpart, a DAS may not issue a supplemental type certificate involving the exhaust emissions change requirements of Part 34 or the acoustical change requirements of Part 36 until the FAA Administrator finds that those requirements are met *(21.451(d))*.

15.10 *Equivalent Safety Provisions*—The DAS shall obtain the FAA Administrator's concurrence on the application of all equivalent safety provisions applied under 4.7 *(21.461)*.

15.11 *Supplemental Type Certificates (21.463)*:

15.11.1 For each supplemental type certificate issued under this Subpart, the DAS shall follow the procedure manual prescribed in 15.4 and shall, before issuing the certificate *(21.463(a))*:

15.11.1.1 Submit to the FAA Administrator a statement describing *(21.463(a)(1))*:

(1) The type design change *(21.463(a)(1)(i))*;

(2) The airworthiness requirements of 14 CFR Chapter 1 (by part and effective date) that the DAS considers applicable *(21.463(a)(1)(ii))*; and

(3) The proposed program for meeting the applicable airworthiness requirements *(21.463(a)(1)(iii))*;

15.11.1.2 Find that each applicable airworthiness requirement is met *(21.463(a)(2))*; and

15.11.1.3 Find that the type of product for which the STC is to be issued, as modified by the supplemental type design data upon which the STC is based, is of proper design for safe operation *(21.463(a)(3))*.

15.11.2 Within 30 days after the date of issue of the STC, the DAS shall submit to the FAA Administrator *(21.463(b))*:

15.11.2.1 Two copies of the STC *(21.463(b)(1))*;

15.11.2.2 One copy of the design data approved by the DAS and referred to in the STC *(21.463(b)(2))*;

15.11.2.3 One copy of each inspection and test report *(21.463(b)(3))*; and

15.11.2.4 Two copies of each revision to the Aircraft Flight Manual or to the unmanned aircraft system operating manual, or to the operating limitations and any other information necessary for safe operation of the product *(21.463(b)(4))*.

15.12 *Airworthiness Certificates Other Than Experimental*—For each amendment made to a standard airworthiness certificate under this section, the DAS shall follow the procedure manual prescribed in 15.4 and shall, before making that amendment *(21.473)*:

15.12.1 Complete each flight test necessary to meet the applicable airworthiness requirements of 14 CFR Chapter 1 *(21.473(a))*;

15.12.2 Find that each applicable airworthiness requirement of 14 CFR Chapter 1 is met *(21.473(b))*; and

15.12.3 Find that the aircraft or unmanned aircraft system is in condition for safe operation *(21.473(c))*.

15.13 *Experimental Certificates*—The DAS shall, before issuing an experimental certificate, obtain from the FAA Administrator any limitations and conditions that the Administrator considers necessary for safety *(21.475)*.

15.14 *Data Review and Service Experience (21.477)*:

15.14.1 If the FAA Administrator finds that a product for which an STC was issued under this Subpart does not meet the applicable airworthiness requirements or that an unsafe feature or characteristic caused by a defect in design or manufacture exists the DAS, upon notification by the Administrator, shall investigate the matter and report to the Administrator the results of the investigation and the action, if any, taken or proposed *(21.477(a))*.

15.14.2 If corrective action by the user of the product is necessary for safety because of any noncompliance or defect specified in 15.14.1, the DAS shall submit the information necessary for the issue of an Airworthiness Directive under Part 39 *(21.477(b))*.

15.15 *Current Records (21.493)*:

15.15.1 The DAS shall maintain, at its facility, current records containing *(21.493(a))*:

15.15.1.1 For each product for which it has issued an STC under this Subpart, a technical data file that includes any data and amendments thereto (including drawings, photographs, specifications, instructions, and reports) necessary for the STC *(21.493(a)(1))*;

15.15.1.2 A list of products by make, model, manufacturer's serial number, and if applicable, any FAA identification that have been altered under the DAS authorization *(21.493(a)(2))*; and

15.15.1.3 A file of information from all available sources on alteration difficulties of products altered under the DAS authorization *(21.493(a)(3))*.

15.15.2 The records prescribed in 15.15.1 shall be *(21.493(b))*:

15.15.2.1 Made available by the DAS, upon the FAA Administrator's request, for examination by the Administrator at any time *(21.493(b)(1))*, and

15.15.2.2 In the case of the data file prescribed in 15.15.1.1, identified by the DAS and sent to the FAA Administrator as soon as the DAS no longer operates under Subpart M of Part 21 *(21.493(b)(2))*.

16. Subpart N—Approval of Engines, Propellers, Materials, Parts, and Appliances: Import

16.1 *Approval of Engines and Propellers*—Each holder or licensee of a U.S. type certificate for an aircraft engine or propeller manufactured in a foreign country with which the United States has an agreement for the acceptance of those products for export and import shall furnish with each such aircraft engine or propeller imported into this country, a certificate of airworthiness for export issued by the country of manufacture certifying that the individual aircraft engine or propeller *(21.500)*:

16.1.1 Conforms to its U.S. type certificate and is in condition for safe operation *(21.500(a))*, and

16.1.2 Has been subjected by the manufacturer to a final operational check *(21.500(b))*.

16.2 *Approval of Materials, Parts, and Appliances (21.502)*:

16.2.1 A material, part, or appliance manufactured in a foreign country with which the United States has an agreement for the acceptance of those materials, parts, or appliances for export and import is considered to meet the requirements for approval in the Federal Aviation Regulations when the country of manufacture issues a certificate of airworthiness for export certifying that the individual material, part, or appliance meets those requirements, unless the FAA Administrator finds, based on the technical data submitted under 16.2.2 that the material, part, or appliance is otherwise not consistent with the intent of the Federal Aviation Regulations *(21.502(a))*.

16.2.2 An applicant for approval of a material, part, or appliance must, upon request, submit to the FAA Administrator any technical data respecting that material, part, or appliance *(21.502(b))*.

17. Subpart O—Technical Standard Order Authorizations

17.1 *Applicability (21.601)*:

17.1.1 This Subpart prescribes *(21.601(a))*:

17.1.1.1 Procedural requirements for the issue of Technical Standard Order authorizations *(21.601(a)(1))*;

17.1.1.2 Rules governing the holders of Technical Standard Order authorizations *(21.601(a)(2))*; and

17.1.1.3 Procedural requirements for the issuance of a letter of Technical Standard Order design approval *(21.601(a)(3))*.

17.1.2 For the purpose of this Subpart *(21.601(b))*:

17.1.2.1 A Technical Standard Order (TSO) is issued by the FAA Administrator and is a minimum performance standard for specified articles (for the purpose of this Subpart, articles means materials, parts, processes, or appliances) used on civil aircraft or unmanned aircraft systems *(21.601(b)(1))*.

17.1.2.2 A TSO authorization is an FAA design and production approval issued to the manufacturer of an article that has been found to meet a specific TSO *(21.601(b)(2))*.

17.1.2.3 A letter of TSO design approval is an FAA design approval for a foreign-manufactured article that has been found to meet a specific TSO in accordance with the procedures of 17.9 *(21.601(b)(3))*.

17.1.2.4 An article manufactured under a TSO authorization, an FAA letter of acceptance as described in 17.2.2, or an appliance manufactured under a letter of TSO design approval described in 17.9 is an approved article or appliance for the purpose of meeting the regulations of this practice that require the article to be approved *(21.601(b)(4))*.

17.1.2.5 An article manufacturer is the person who controls the design and quality of the article produced (or to be produced, in the case of an application), including the parts of them and any processes or services related to them that are procured from an outside source *(21.601(b)(5))*.

17.1.3 The FAA Administrator does not issue a TSO authorization if the manufacturing facilities for the product are located outside of the United States unless the Administrator finds that the location of the manufacturer's facilities places no undue burden on the FAA in administering applicable airworthiness requirements *(21.601(c))*.

17.2 *TSO Marking and Privileges (21.603)*:

17.2.1 Except as provided in 17.2.2 and 17.9.3, no person may identify an article with a TSO marking unless that person holds a TSO authorization and the article meets applicable TSO performance standards *(21.603(a))*.

17.2.2 The holder of an FAA letter of acceptance of a statement of conformance issued for an article before July 1, 1962, or any TSO authorization issued after July 1, 1962, may continue to manufacture that article without obtaining a new TSO authorization but shall comply with the requirements of 18.1, 17.4-17.8, 17.10, and 17.11 *(21.603(b))*.

17.2.3 Notwithstanding 17.2.1 and 17.2.2, after August 6, 1976, no person may identify or mark an article with any of the following TSO numbers *(21.603(c))*:

17.2.3.1 TSO-C18, -C18a, -C18b, -C18c *(21.603(c)(1))* ;

17.2.3.2 TSO-C24 *(21.603(c)(2))*;

17.2.3.3 TSO-C33 *(21.603(c)(3))*; and

17.2.3.4 TSO-C61 or C61a. (21.603(c)(4))

17.3 *Application and Issue (21.605)*:

17.3.1 The manufacturer (or an authorized agent) shall submit an application for a TSO authorization, together with the following documents, to the Manager of the FAA Aircraft Certification Office for the geographic area in which the applicant is located (21.605(a)):

17.3.1.1 A statement of conformance certifying that the applicant has met the requirements of this Subpart and that the article concerned meets the applicable TSO that is effective on the date of application for that article (21.605(a)(1));

17.3.1.2 One copy of the technical data required in the applicable TSO *(21.605(a)(2))*; and

17.3.1.3 A description of its quality control system in the detail specified in 9.6. In complying with 17.3, the applicant may refer to current quality control data filed with the FAA as part of a previous TSO authorization application *(21.605(a)(3))*.

17.3.2 When a series of minor changes in accordance with 17.6 is anticipated, the applicant may set forth in its application

the basic model number of the article and the part number of the components with open brackets after it to denote that suffix change letters or numbers (or combinations of them) will be added from time to time *(21.605(b))*.

17.3.3 After receiving the application and other documents required by 17.3.1 to substantiate compliance with this practice, and after a determination has been made of its ability to produce duplicate articles under this practice, the FAA Administrator issues a TSO authorization (including all TSO deviations granted to the applicant) to the applicant to identify the article with the applicable TSO marking *(21.605(c))*.

17.3.4 If the application is deficient, the applicant must, when requested by the FAA Administrator, submit any additional information necessary to show compliance with this part. If the applicant fails to submit the additional information within 30 days after the Administrator's request, the application is denied and the applicant is so notified *(21.605(d))*.

17.3.5 The FAA Administrator issues or denies the application within 30 days after its receipt or, if additional information has been requested, within 30 days after receiving that information *(21.605(e))*.

17.4 *General Rules Governing Holders of TSO Authorizations*—Each manufacturer of an article for which a TSO authorization has been issued under Part 21 shall *(21.607)*:

17.4.1 Manufacture the article in accordance with Part 21 and the applicable TSO *(21.607(a))*;

17.4.2 Conduct all required tests and inspections and establish and maintain a quality control system adequate to ensure that the article meets the requirements of 17.4.1 and is in condition for safe operation *(21.607(b))*;

17.4.3 Prepare and maintain for each model of each article for which a TSO authorization has been issued, a current file of complete technical data and records in accordance with 17.7 *(21.607(c))*; and

17.4.4 Permanently and legibly mark each article to which 17.4 applies with the following information *(21.607(d))*:

17.4.4.1 The name and address of the manufacturer *(21.607(d)(1))*;

17.4.4.2 The name, type, part number, or model designation of the article *(21.607(d)(2))*;

17.4.4.3 The serial number or the date of manufacture of the article or both *(21.607(d)(3))*; and

17.4.4.4 The applicable TSO number *(21.607(d)(4))*.

17.5 *Approval for Deviation (21.609)*:

17.5.1 Each manufacturer who requests approval to deviate from any performance standard of a TSO shall show that the standards from which a deviation is requested are compensated for by factors or design features providing an equivalent level of safety *(21.609(a))*.

17.5.2 The request for approval to deviate, together with all pertinent data, must be submitted to the Manager of the FAA Aircraft Certification Office for the geographic area in which the manufacturer is located. If the article is manufactured in another country, the request for approval to deviate, together with all pertinent data, must be submitted through the civil aviation authority in that country to the FAA *(21.609(b))*.

17.6 *Design Changes (21.611)*:

17.6.1 *Minor Changes by the Manufacturer Holding a TSO Authorization*—The manufacturer of an article under an authorization issued under Part 21 may make minor design changes (any change other than a major change) without further approval by the FAA Administrator. In this case, the changed article keeps the original model number (part numbers may be used to identify minor changes) and the manufacturer shall forward to the appropriate FAA Aircraft Certification Office for the geographic area, any revised data that are necessary for compliance with 17.3.2 *(21.611(a))*.

17.6.2 *Major Changes by Manufacturer Holding a TSO Authorization*—Any design change by the manufacturer that is extensive enough to require a substantially complete investigation to determine compliance with a TSO is a major change. Before making such a change, the manufacturer shall assign a new type or model designation to the article and apply for an authorization under Part 21, section 21.605(b) *(21.611(b))*.

17.6.3 *Changes by Person Other Than Manufacturer*—No design change by any person (other than the manufacturer who submitted the statement of conformance for the article) is eligible for approval under Part 21 unless the person seeking the approval is a manufacturer and applies under section 21.605(a) for a separate TSO authorization. Persons other than a manufacturer may obtain approval for design changes under Part 43 or under the applicable airworthiness regulations *(21.611(c))*.

17.7 *Recordkeeping Requirements (21.613)*:

17.7.1 *Keeping the Records*—Each manufacturer holding a TSO authorization under Part 21 shall, for each article manufactured under that authorization, keep the following records at its factory *(21.613(a))*:

17.7.1.1 Complete and current technical data file for each type or model article including design drawings and specifications *(21.613(a)(1))*, and

17.7.1.2 Complete and current inspection records showing that all inspections and tests required to ensure compliance with this practice have been properly completed and documented *(21.613(a)(2))*.

17.7.2 *Retention of Records*—The manufacturer shall retain the records described in 17.7.1.1 until it no longer manufactures the article. At that time, copies of these records shall be sent to the Administrator. The manufacturer shall retain the records described in 17.7.1.2 for a period of at least two years *(21.613(b))*.

17.8 *FAA Inspection*—Upon the request of the FAA Administrator, each manufacturer of an article under a TSO authorization shall allow the Administrator to *(21.615)*:

17.8.1 Inspect any article manufactured under that authorization *(21.615(a))*,

17.8.2 Inspect the manufacturer's quality control system *(21.615(b))*,

17.8.3 Witness any tests *(21.615(c))*,

17.8.4 Inspect the manufacturing facilities *(21.615(d))*, and

17.8.5 Inspect the technical data files on that article *(21.615(e))*.

17.9 *Issue of Letters of TSO Design Approval: Import Appliances (21.617)*:

17.9.1 A letter of TSO design approval may be issued for an appliance that is manufactured in a foreign country with which the United States has an agreement for the acceptance of these appliances for export and import and that is to be imported into the United States if *(21.617(a))*:

17.9.1.1 The country in which the appliance was manufactured certifies that the appliance has been examined, tested, and found to meet the applicable TSO designated in 13.3.2 or the applicable performance standards of the country in which the appliance was manufactured and any other performance standards the FAA Administrator may prescribe to provide a level of safety equivalent to that provided by the TSO designated in 13.3.2 *(21.617(a)(1))*, and

17.9.1.2 The manufacturer has submitted one copy of the technical data required in the applicable performance standard through its civil aviation authority *(21.617(a)(2))*.

17.9.2 The letter of TSO design approval will be issued by the FAA Administrator and must list any deviation granted to the manufacturer under 17.5 *(21.617(b))*.

17.9.3 After the Administrator has issued a letter of TSO design approval and the country of manufacture issues a Certificate of Airworthiness for Export as specified in 16.2.1, the manufacturer shall be authorized to identify the appliance with the TSO marking requirements described in 17.4.4 and in the applicable TSO. Each appliance must be accompanied by a Certificate of Airworthiness for Export as specified in 16.2.1 issued by the country of manufacture *(21.617(c))*.

17.10 *Noncompliance*—The FAA Administrator may, upon notice, withdraw the TSO authorization or letter of TSO design approval of any manufacturer who identifies with a TSO marking an article not meeting the performance standards of the applicable TSO *(21.619)*.

17.11 *Transferability and Duration*—A TSO authorization or letter of TSO design approval issued under Part 21 is not transferable and is effective until surrendered, withdrawn, or otherwise terminated by the FAA Administrator *(21.621)*.

18. Subpart P—Report of Failures, Malfunctions and Defects

18.1 *Reporting of Failures, Malfunctions, and Defects (21.3)*:

18.1.1 Except as provided in 18.1.4, the holder of a Type Certificate (including a Supplemental Type Certificate), a Parts Manufacturer Approval (PMA), or a TSO authorization or the licensee of a Type Certificate shall report any failure, malfunction, or defect in any product, part, process, or article manufactured by it that it determines has resulted in any of the occurrences listed in 18.1.3 *(21.3(a))*.

18.1.2 The holder of a Type Certificate (including a Supplemental Type Certificate), a Parts Manufacturer Approval (PMA), a TSO authorization or the licensee of a Type of Certificate shall report any defect in any product, part, or article manufactured by it that has left its quality control system and that it determines could result in any of the occurrences listed in 18.1.3 *(21.3(b))*.

18.1.3 The following occurrences must be reported as provided in 18.1.1 and 18.1.2 *(21.3(c))*:

18.1.3.1 Fires caused by a system or equipment failure, malfunction, or defect *(21.3(c)(1))*;

18.1.3.2 An engine exhaust system failure, malfunction, or defect that causes damage to the engine, adjacent aircraft structure, equipment, or components *(21.3(c)(2))*;

18.1.3.3 The accumulation or circulation of toxic or noxious gases in the crew compartment or passenger cabin *(21.3(c)(3))*.

18.1.3.4 A malfunction, failure, or defect of a propeller control system *(21.3(c)(4))*;

18.1.3.5 A propeller or rotorcraft hub or blade structural failure *(21.3(c)(5))*;

18.1.3.6 Flammable fluid leakage in areas in which an ignition source normally exists *(21.3(c)(6))*;

18.1.3.7 A brake system failure caused by structural or material failure during operation *(21.3(c)(7))*;

18.1.3.8 A significant aircraft or unmanned aircraft system primary structural defect or failure caused by any autogenous condition (fatigue, understrength, corrosion, etc.) *(21.3(c)(8))*;

18.1.3.9 Any abnormal vibration or buffeting caused by a structural or system malfunction, defect, or failure *(21.3(c)(9))*;

18.1.3.10 An engine failure *(21.3(c)(10))*;

18.1.3.11 Any structural or flight control system malfunction, defect, or failure that causes an interference with normal control of the aircraft or unmanned aircraft system which derogates the flying qualities *(21.3(c)(11))*;

18.1.3.12 A complete loss of more than one electrical power-generating system or hydraulic power system during a given operation of the aircraft *(21.3(c)(12))*; and

18.1.3.13 A failure or malfunction of more than one attitude, airspeed, or altitude instrument during a given operation of the aircraft or unmanned aircraft system *(21.3(c)(13))*.

18.1.4 The requirements of 18.1.1 do not apply to *(21.3(d))*:

18.1.4.1 Failures, malfunctions, or defects that the holder of a Type Certificate (including a Supplemental Type Certificate), Parts Manufacturer Approval (PMA), or TSO authorization or the licensee of a Type Certificate *(21.3(d)(1))*:

(1) Determines were caused by improper maintenance, or improper usage *(21.3(d)(1)(i))*;

(2) Knows were reported to the FAA by another person under the Federal Aviation Regulations *(21.3(d)(1)(ii))*; or

(3) Has already reported under the accident reporting provisions of Part 430 of the regulations of the National Transportation Safety Board *(21.3(d)(1)(iii))*.

18.1.4.2 Failures, malfunctions, or defects in products, parts, or articles manufactured by a foreign manufacturer under a U.S. Type Certificate issued under sections 21.29 or 21.617 or exported to the United States under section 21.502 *(21.3(d)(2))*.

18.1.5 Each report required by 18.1 *(21.3(e))*:

18.1.5.1 Shall be made to the Aircraft Certification Office in the region in which the person required to make the report is located within 24 h 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 *(21.3(e)(1))*;

18.1.5.2 Shall be transmitted in a manner and form acceptable to the FAA Administrator and by the most expeditious method available *(21.3(e)(2))*; and

18.1.5.3 Shall include as much of the following information as is available and applicable *(21.3(e)(3))*:

(1) Aircraft or unmanned aircraft system serial number *(21.3(e)(3)(i))*;

(2) When the failure, malfunction, or defect is associated with an article approved under a TSO authorization, the article serial number and model designation, as appropriate *(21.3(e)(3)(ii))*;

(3) When the failure, malfunction, or defect is associated with an engine or propeller, the engine or propeller serial number, as appropriate *(21.3(e)(3)(iii))*;

(4) Product model *(21.3(e)(3)(iv))*;

(5) Identification of the part, component, or system involved and the identification must include the part number *(21.3(e)(3)(v))*; and

(6) Nature of the failure, malfunction, or defect *(21.3(e)(3)(vi))*.

18.1.6 Whenever the investigation of an accident or service difficulty report shows that an article manufactured under a TSO authorization is unsafe because of a manufacturing or design defect, the manufacturer shall, upon request of the FAA Administrator, report to the Administrator the results of its investigation and any action taken or proposed by the manufacturer to correct that defect. If action is required to correct the defect in existing articles, the manufacturer shall submit the data necessary for the issuance of an appropriate airworthiness directive to the Manager of the FAA Aircraft Certification Office for the geographic area of the FAA regional office in the region in which it is located *(21.3(f)(i))*.

18.2 *Falsification of Applications, Reports, or Records (21.2)*:

18.2.1 No person shall make or cause to be made *(21.2(a))*:

18.2.1.1 Any fraudulent or intentionally false statement on any application for a certificate or approval under Part 21 *(21.2(a)(1))*;

18.2.1.2 Any fraudulent or intentionally false entry in any record or report that is required to be kept, made, or used to show compliance with any requirement for the issuance or the exercise of the privileges of any certificate or approval issued under Part 21 *(21.2(a)(2))*;

18.2.1.3 Any reproduction for a fraudulent purpose of any certificate or approval issued under Part 21 *(21.2(a)(3))*; and

18.2.1.4 Any alteration of any certificate or approval issued under Part 21 *(21.2(a)(4))*.

18.2.2 The commission by any person of an act prohibited under 18.2.1 is a basis for suspending or revoking any certificate or approval issued under Part 21 and held by that person *(21.2(b))*.

19. Keywords

19.1 certificates; FAR Part 21 requirements; Unmanned Aircraft System (UAS)

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