

**VOLUME 2 AIR OPERATOR AND AIR AGENCY CERTIFICATION AND
APPLICATION PROCESS**

CHAPTER 4 THE CERTIFICATION PROCESS—TITLE 14 CFR PART 135

**Section 8 Evaluate Part 135 (Nine or Less) Operator/Applicant's Maintenance
Requirements**

**2-506 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY
CODES.**

A. Maintenance. 3341.

B. Avionics. 5341.

2-507 OBJECTIVE. This section provides guidance for evaluating, approving, and administering maintenance requirements for a Title 14 of the Code of Federal Regulations (14 CFR) part 135, section (§) 135.411(a)(1) operator.

2-508 GENERAL.

A. Seating Capacity. The maximum passenger seating capacity listed on the type certificate (TC) or Supplemental Type Certificate (STC) is the maximum demonstrated number of passengers that can be evacuated from the aircraft under emergency conditions. The passenger seating configuration is the amount of seats installed in the aircraft. This number is determined by counting approved seats installed in the aircraft. The type-certificated passenger seating configuration is the seating configuration defined on the TC or STC for the aircraft interior. The manufacturer (TC/STC holder) may have several approved passenger seating configurations depicted in the flight manual that do not require the removal of seats from the aircraft, but limit the seating to meet operational requirements. This situation should not be construed as decreasing the passenger seating configuration from the number listed on the TC/STC. The reconfiguration of a passenger seating configuration to remove passenger seats via a TC amendment or an STC is the only acceptable means to reduce a seating configuration to nine or less seats.

NOTE: The removal of passenger seats (without an STC or TC amendment), blocking of passenger seats, and the use of placards restricting the use of passenger seats does not constitute an acceptable means of qualifying for § 135.411(a)(1). These methods do not change the type-certificated seating configuration.

B. Nine or Less Passenger Seats. Except as discussed in the next paragraph, aircraft that have a type-certificated seating configuration of nine or less passenger seats may use the inspection requirements of 14 CFR part 91, § 91.409 or an Approved Aircraft Inspection Program (AAIP) in accordance with part 135, § 135.419. In either case, the additional maintenance requirements of § 135.421 must also be met.

C. Continuous Airworthiness Maintenance Program (CAMP). Under § 135.411(b), an operator/applicant may elect to maintain its aircraft under a CAMP. Such a program is authorized in accordance with the guidance in Volume 3, Chapter 43, Section 1, Evaluate Continuous Airworthiness Maintenance Program/Revision.

2-509 ANNUAL AND 100-HOUR INSPECTION REQUIREMENTS. Annual and 100-hour inspection requirements are defined in 14 CFR part 43, appendix D. The operator/applicant may request additional work or special emphasis on certain tasks. However, there is no formal method of including these items on a continuing basis in future inspections. These inspections are suitable for, and should be limited to, aircraft that the operator/applicant will schedule for inspection but that have no particular input for the work to be accomplished (reference § 91.409(a) and (b)).

2-510 PROGRESSIVE INSPECTIONS. Each operator/applicant wanting to use a progressive inspection must submit a written request to the certificate-holding district office (CHDO). The operator/applicant must have the following (ref. § 91.409(d)):

- A certificated mechanic holding an Inspection Authorization (IA), a certificated airframe repair station, or the aircraft manufacturer to supervise or conduct the inspection (“Supervise” can be taken to mean the monitoring of a mechanic’s work to ensure that work is performed in accordance with the approved program.)
- A current inspection procedures manual that meets the requirements of § 91.409(d)(2)
- Appropriate facilities and equipment necessary for the disassembly and proper inspection of the aircraft
- Appropriate current technical information for the aircraft

2-511 PROGRESSIVE INSPECTION INTERVALS.

A. Program Purpose. A progressive inspection program must provide for a complete inspection of the aircraft within each 12-calendar-month period. The inspection must be consistent with the manufacturer’s recommendations, field service experience, and the kind of operation in which the aircraft is engaged. The inspection schedule must ensure that the aircraft is, at all times, airworthy and conforms to all applicable Federal Aviation Administration (FAA) aircraft specifications, type certificate data sheets (TCDS), Airworthiness Directives (AD), and other approved data.

NOTE: A calendar-month is the period of time from the first day of a month to the last day of the month. In a calendar-month, compliance can be achieved at any time during the month, up to and including the last day of the month. A month is the time from any day of 1 calendar-month to the corresponding day of the next calendar-month.

B. Interval Frequency. Inspection intervals should be based on manufacturer’s recommendations, field service experience, malfunction and defect history, and the type of operation in which the aircraft is engaged.

1) If the operator/applicant needs help establishing inspection intervals, the aviation safety inspector (ASI) should provide assistance.

2) When an operator/applicant has inadequate knowledge of service problems for a particular aircraft, advise the operator/applicant to establish a reasonable initial routine, create detailed inspection intervals, and plan to adjust intervals based on service experience. Make the operator/applicant aware of its responsibility for initiating an inspection frequency; this will result in a complete inspection of the aircraft.

C. Requirements.

1) Before an aircraft can be placed on a progressive inspection program, it must undergo an inspection at least equal to a 100-hour inspection. After this initial inspection, routine and detailed inspections must be conducted as stated in the progressive inspection schedule.

2) Routine inspections consist of a visual examination or check of the aircraft, appliances, and components and systems without disassembly, if possible.

3) Detailed inspections consist of a thorough examination of these items for which such disassembly is necessary. For the purposes of this subparagraph, the overhaul of a component or system is considered a detailed inspection.

4) Before an aircraft can be removed from a progressive inspection program and returned to an annual/100-hour inspection program, the requirements contained in § 91.409(d)(4) must be followed.

2-512 ADDITIONAL MAINTENANCE REQUIREMENTS.

A. Major Maintenance Tasks. Each operator/applicant maintaining aircraft under § 135.411(a)(1) must comply with the additional maintenance requirements of § 135.421. These requirements ensure that major maintenance tasks (overhaul, hot-section inspections, etc.) are performed on engines, propellers, rotors, emergency equipment, and medical carry-on oxygen. These requirements do not apply to the airframe and are not intended to impose a CAMP or otherwise increase the aircraft inspection program.

B. Engine. Engine requirements apply to the engine itself, including turbo-superchargers, appurtenances, and accessories necessary to its function. They do not include aircraft provisions such as mounts or cowling or accessories such as generators or starters. Title 14 CFR part 1 defines a propeller as including controls normally supplied by the manufacturer. Most propeller TCDS specify the applicable control unit, which should be considered part of the propeller.

C. Inspection Program Options. The operator/applicant may use either the manufacturer's recommended inspection programs or develop a program that includes equivalent requirements.

D. Manufacturer's Requirements. Manufacturer's requirements, such as pilot preflight or other inspection items within the scope of the inspections required by § 135.411(a)(1), should

not be included as additional maintenance requirements. To meet the requirements of § 135.421, an operator/applicant may use one of the following:

- The applicable portions of an aircraft manufacturer's recommended maintenance requirements for the engine, propeller, rotor, and emergency equipment
- The manufacturer's programs for individual items
- A combination of both

E. Definition of Manufacturer Maintenance Program. Section 135.421(b) defines a manufacturer's maintenance program as one which is in the manufacturer's maintenance manual or instructions. It does not include individual authorizations or recommendations by a repair facility or manufacturer to a particular operator/applicant.

1) These manuals and instructions generally include Service Bulletins (SB), Service Letters (SL), and other maintenance publications.

2) SBs and SLs about repairs, alterations, or other items beyond the meaning of the term "maintenance" do not fall within the scope of § 135.421. Compliance is not required unless it is made regulatory (see paragraph 2-513 below for further discussion). The operator/applicant may include these items in the additional maintenance program to support higher maintenance intervals or other inspection variables.

F. Adoption of Manufacturer's Maintenance Program. An operator/applicant may adopt a manufacturer's entire maintenance program. The program must apply to the specific make, model, configuration, etc., and meet the requirements of § 135.421.

1) If the aircraft manufacturer's program does not include engine overhaul (or comparable heavy maintenance) but the engine manufacturer's program does, the operator/applicant must incorporate the engine manufacturer's program to the degree necessary to meet the engine overhaul requirement. It may be necessary to designate SBs, other manufacturer's maintenance instructions, and a manufacturer's maintenance manual to ensure an adequate program.

2) Operations specifications (OpSpecs) must show program limitations.

G. Development of Operator's Own Maintenance Program. Section 135.421 allows operators/applicants to develop their own maintenance program. An operator/applicant-developed program requires FAA approval and the operator/applicant must justify the program. In most cases, these programs are based on a manufacturer's maintenance program, although they may contain variations, such as a higher engine overhaul period. When evaluating the operator/applicant's program, the ASI may consider a program in use by another operator for similar make/model aircraft.

1) Each change to an operator/applicant-developed program requires FAA approval. Changes to a manufacturer's program should be considered but must not be incorporated into an operator/applicant-developed program without specific FAA approval.

2) The issuance of automated OpSpecs approves an operator/applicant-developed program for use.

H. Nine or Less Passenger Seating. Section 135.411(a)(1) states in part that the maintenance requirements for aircraft certificated under part 135 for a passenger seating configuration of nine or less passengers requires operators to perform their maintenance under parts 43, 91, and part 135, §§ 135.415, 135.416, 135.417, and 135.421.

- Section 135.415 addresses service difficulty reports.
- Section 135.417 addresses mechanical interruption summary reports.
- Section 135.421 addresses additional maintenance requirements.

2-513 MANUFACTURER’S SERVICE BULLETIN REQUIREMENTS.

A. General. Manufacturers may generally classify SBs, SLs, and other maintenance information as mandatory, urgent, or general. Some of the information in the manufacturer’s maintenance manuals may be similarly classified. Manufacturers may also include maintenance personnel qualification requirements labeled as mandatory in their maintenance manual or other maintenance information. However, none of this information labeled as mandatory is actually mandatory unless there is a regulation that makes it mandatory.

1) By itself, manufacturer’s maintenance information may not amend the requirements of 14 CFR. In addition, manufacturer’s maintenance information may not restrict any person that is authorized by part 43, § 43.3 to accomplish maintenance from accomplishing that maintenance.

2) A manufacturer may legitimately incorporate servicing and maintenance instructions in its maintenance manual that are consistent with the certification basis of the product. If it does so, the data specified, and the method, technique, or practice contained therein, may be acceptable to the Administrator. However, unless all or a portion of the maintenance manual are specifically mandated by a regulatory document, such as an AD, or air carrier operations specifications (OpSpecs), its contents are not actually mandatory.

3) Enforcement of a manufacturer’s mandatory methods, techniques, and practices, or “notes” contained in a TCDS that make a maintenance manual or SB mandatory without the requisite regulatory document, would lead to serious legal objections. It would mean that FAA has effectively authorized a manufacturer to issue “substantive rules” as that term is used in the Administrative Procedures Act (APA), i.e., it would enable a manufacturer to impose legal requirements on the public. This would be objectionable for at least two reasons. First, the FAA does not have the authority to delegate its rulemaking authority to a manufacturer. Second, “substantive rules” can be adopted only in accordance with the notice-and-comment procedures of the APA, which does not apply to any manufacturer.

4) The following are examples of situations when SBs would be regulatory and cover most situations ASIs encounter:

- If all or a portion of an SB is incorporated as part of an AD

- If the SB is part of the FAA-approved Airworthiness Limitations section of the manufacturer's manual or the TC
- If SBs are incorporated directly or by reference into some type of FAA-approved inspection program, such as an AAIP or CAMP
- If SBs are listed as an additional maintenance requirement in the certificate holder's OpSpecs

NOTE: For this section only, all references to manufacturers' SBs will encompass all manufacturers' service information.

B. Conditions or Procedures To Be Changed. SBs are provided by the manufacturer to advise the operator of conditions or procedures which may or should be improved or changed. Some of the conditions or procedures in SBs may include:

- Structural cracking
- Component failure
- Electrical shorts
- Inspection procedures
- Recommended overhaul times
- Repetitive inspections

C. Corrective Action and/or Manufacturer Recommendation Compliance. SBs are often used for corrective action and/or compliance with manufacturer recommendations. In some cases, as listed below, SBs are issued for safety of flight items without an AD being issued, such as one-time inspections, suspect parts, and improper maintenance procedures. SBs may describe damage and repair procedures that exceed Structural Repair Manual (SRM) requirements. Operational procedures are included as well.

D. Other Items. Other items such as lubrication, inspection procedures, adjustment procedures, and minor modifications may be recommended on a one-time basis. Environmental problems will also be included. SBs appear to fall in the following classes:

- 1) Urgent. The manufacturer believes the bulletin should be accomplished and that safety may be a factor. This type of SB may be used as a basis for AD.
- 2) Routine. This SB is of a general nature and may provide better maintenance reliability, but does not discuss items in which safety may be a factor.
- 3) Procedural. This SB explains a change in the way to accomplish a basic function but in a different way.
- 4) Environmental. This SB explains a procedural change due to the type of operating or maintenance conditions such as wet or dry, or hot or cold climate conditions.
- 5) Repetitive. This SB may recommend a repetitive inspection of an area or part. This may be short-term until a repair can be made, but it may also be a long-term procedure.

2-514 MAINTENANCE PROGRAM APPROVAL FOR CARRY-ON OXYGEN EQUIPMENT USED FOR MEDICAL PURPOSES.

A. Title 14 CFR Part 135, § 135.91(a)(1)(ii). This section requires that equipment used for storage, generation, or dispensing of oxygen and carried aboard an aircraft must be maintained in accordance with the operator/applicant's approved maintenance program. Part 135 does not have specific rules for maintaining and testing pressure cylinders. However, procedures in Department of Transportation (DOT) regulations are considered acceptable for controlling hydrostatic and life-limits of pressure cylinders. The Research and Special Programs Administration establishes standards that pressure cylinders must meet to be eligible for transportation purposes (see Title 49 of the Code of Federal Regulations (49 CFR), parts 100 through 199).

B. Title 49 CFR part 180, § 180.205(c). This section states, "No cylinder may be filled with a hazardous material and offered for transportation in commerce unless that cylinder has been successfully requalified and marked in accordance with this subpart." It further states, "However, a cylinder filled before the requalification becomes due may remain in service until it is emptied." Therefore, pressure cylinders that are part of an aircraft system and continue to meet the criteria of the operator's approved maintenance program for pressure cylinder may remain in service beyond the test date. Once the cylinder is removed from the aircraft system for refilling the cylinder must be requalified prior to reinstallation on the aircraft.

C. Title 49 CFR part 175, § 175.10. This section states, in part, the following exceptions, "This subchapter does not apply to: Aviation fuel and oil in tanks that are in compliance with the installation provisions of 14 CFR Chapter 1. Hazardous materials required aboard an aircraft in accordance with the applicable airworthiness requirements and operating regulations. Unless otherwise approved by the Associate Administrator, items of replacement for such hazardous materials must be transported in accordance with this subchapter." It further states, "Oxygen, or any hazardous material used for the generation of oxygen, for medical use by a passenger, which is furnished by the aircraft operator in accordance with 14 CFR 121.574 or § 135.91. For the purpose of this paragraph an aircraft operator that is not a certificate holder under part 121 or 135, may apply this exception in conformance with 14 CFR 121.574 or 135.91 in the same manner as required for a certificate holder."

D. OpSpec D104. The maintenance requirements for carry-on oxygen equipment for medical purposes is included in OpSpec D104 as an item of emergency equipment.

2-515 REVISING TIME LIMITATIONS.

A. Powerplants, Propellers, Rotors, and Emergency Equipment. Revisions to inspection and overhaul time limitations for powerplants, propellers, rotors, and emergency equipment normally are based on service experience. An operator may request authorization for a time increase by submitting justification to support the requested increase. The data must indicate that the increase will not negatively affect the airworthiness of the aircraft. If service records indicate that any item consistently requires repair, adjustment, or other maintenance within the current time limitations due to damage, wear, or deterioration, the operator must take corrective action.

B. Hours of Operation, Cycles, or Calendar Time. Time limitations may be established in terms of hours of operation, cycles, or calendar time. Time limitations for items on which deterioration is not necessarily a function of hours of operation (such as electronic units and emergency flotation equipment) should be established in terms of calendar time.

C. Engine Overhaul Interval. Increases in engine overhaul intervals may be approved in increments mutually agreed upon by the operator and the ASI. Increases should be based on satisfactory service experience and/or a tear-down examination of at least one exhibit engine. The engine chosen for exhibit should have operated to within five percent of the currently approved time interval.

D. Inspection Time Interval. The operator may justify an inspection time interval increase by providing sampling documentation that supports the proposed increase. The principal maintenance inspector (PMI) must ensure that the part or engine sampled represents the total sample population and that it has not been given special treatment or undergone early inspections by the operator. A substantial portion of the time in service should have been accrued by the current operator. Industry experience and manufacturer's recommendations for similar equipment can be used as supporting justification, but should not be the sole source.

2-516 COORDINATION REQUIREMENTS. This task requires coordination between the Airworthiness ASIs.

2-517 REFERENCES, FORMS, AND JOB AIDS.

A. References (Current Editions).

- Operator/applicant's manual
- Title 49 CFR parts 175 and 180
- Volume 3, chapter 43, section 1, Evaluate Continuous Airworthiness Maintenance Program/Revision
- Volume 3, Chapter 18, Section 6, Parts D and E—Maintenance MSpecs/OpSpecs

B. Forms.

- FAA Form 8100-9, Statement of Compliance with Airworthiness Standards
- FAA Form 8110-3, Statement of Compliance with Title 14 CFR

C. Job Aids. Job Task Analysis (JTA): 2.3.24

2-518 PROCEDURES.

A. Brief the Operator/Applicant. Provide the operator/applicant with policies and regulatory requirements. Schedule and conduct a preliminary meeting, if necessary.

B. Review the Schedule of Events. If this task is performed as part of an original certification, review the schedule of events to ensure that the task can be accomplished according to the schedule.

C. Evaluate the General Manual Requirements. Ensure that the operator/applicant's policies and procedures manual describes procedures, levels of authority, and information appropriate to the inspection and maintenance requirements of § 135.411(a)(1).

NOTE: Single-pilot operators and single pilot-in-command (PIC) operators are not required to have a manual per part 135, § 135.21(a).

D. Evaluate the Inspection and Maintenance Requirements. Accomplish the following:

1) Determine if the aircraft meets the nine or less passenger seat requirements of § 135.411(a)(1).

a) Certain aircraft may have been delivered with, or an STC has been issued to install, a dynamic forward observer seat (jump seats that fold down and are stowed when not in use) or a static jump seat in or near the flight deck area. If these seats are limited in the TC or STC and placarded for "crew use only," then they will not be counted in the passenger configuration of the aircraft. If these jump seats are designated for crew or passenger use in the TC or STC, then they must be counted in the total passenger seating configuration. Refer to the TC or STC to determine the requirements of seat use.

b) In accordance with part 135, § 135.113, a passenger (see exclusions in § 135.113) may occupy a pilot seat of an aircraft that was type-certificated after October 15, 1971 if the aircraft is configured with eight seats or less, excluding pilot seats. For aircraft type-certificated before October 15, 1971, a passenger may occupy a pilot seat if the aircraft is configured with nine seats or less, excluding pilot seats. In either of these situations, the passenger use of a pilot seat will not be considered as part of the nine seats physically installed in the cabin and will not be counted in the total passenger seating configuration.

c) If the seat, bench, or divan is side-facing and is not an approved seat for use during takeoff and landing, regardless of how many are installed, it is not counted in the total passenger-seating configuration.

NOTE: Even though these side-facing seats, benches, or divans may not be approved for takeoff and landing, they may still have a seatbelt (gust belt) installed to protect passengers from turbulence. This is the only acceptable situation in which a placard must be installed through a STC or TC stating that the seat is not to be occupied during takeoff and landing

NOTE: A review of the STC must be made to determine if the seats do not meet the rule requirements to be certified for takeoff and landing or does the STC merely placard an approved seat for the purposes of reducing capacity. This information should be found in the limitations section of the STC. Contact the appropriate Aircraft Certification Office (ACO) if necessary to help make this determination.

d) Aircraft manufacturers design and install custom interiors during the production of many aircraft. These manufacturers have received FAA approval of these interior installations as a major change to type design in accordance with part 21, § 21.97. This process allows the manufacturer to install different interior configurations during production that conform to the approved type design, seating configuration. This process is also used to amend the original TC of the aircraft during production.

1. If the aircraft interior was installed in this manner and the seating configuration was nine or less, and also meets the above requirements, then the type-certificated seating configuration is nine or less. Because an amendment to the TC has already been approved, these configurations would not require an STC based on § 21.113.

2. Careful evaluation of these factory-installed interiors is needed to determine whether the interior installation was FAA-approved by the TC holder using the process discussed above. Do not assume that interiors installed at a completion center used by the manufacture have completed this process. Principal inspectors should evaluate the maintenance records, flight manual, weight and balance manual, or other documentation to determine what approved data was used. If a review of the maintenance records shows that the interior provisions have designated engineering representative data on FAA Form 8110-3, or other delegated sources by FAA Form 8100-9, or the interior was installed under an FAA field approval, then an amendment to the TC has not been approved.

NOTE: If a determination cannot be made after review of the above documentation, contact the ACO or the manufacturer to determine if the interior configuration installed was submitted as stated above.

2) Verify with the operator/applicant the type of program with which the aircraft is to be inspected.

a) If the operator/applicant would prefer to have progressive inspections, ensure that the requirements of § 91.409(d) are met.

b) If the operator/applicant would prefer to use an AAIP, ensure that the requirements of § 135.419 and Volume 3, Chapter 38, Evaluate Part 135 (Nine or Less) Approved Aircraft Inspection Program, are met.

c) If the operator/applicant would prefer to have a 100-hour/annual inspection, ensure that the requirements of § 91.409(a) and (b) are met.

d) If the operator/applicant intends to haul cargo only, ensure that the requirements of § 91.409(a), 91.409(d), or 135.419 are met.

NOTE: One hundred (100)-hour inspections are only required for passenger-carrying operations per § 91.409(b).

3) Determine if the operator/applicant meets the additional maintenance requirements of § 135.421 for engines, propellers, and rotors (as applicable), and emergency equipment.

a) Determine if the operator/applicant intends to use the manufacturer's inspection program or develop one of its own.

b) Determine the time in service intervals that the operator/applicant intends to apply.

E. Analyze the Findings. Discuss with the operator/applicant any discrepancies and the changes required to resolve them.

2-519 TASK OUTCOMES.

A. Complete the Program Tracking and Reporting Subsystem (PTRS) Record.

B. Complete the Task. When all requirements for acceptance and approval of the inspection and maintenance programs have been met, completion of this task will result in approval or amendment of OpSpecs.

C. Document the Task. File all supporting paperwork in the operator/applicant's office file.

2-520 FUTURE ACTIVITIES. Normal surveillance.

RESERVED. Paragraphs 2-521 through 2-535.