nance program is then arranged in intervals of hour blocks or calendar days, which support maximum aircraft availability with minimum down time. The operator’s desire is to maximize flying time and minimize the aircraft’s down time.

Responsibility for Aircraft Maintenance

The choice of aircraft ownership/operation is one that brings along responsibilities for airworthiness. Airworthiness has many elements, but the primary responsibility lies with the owner/operator. The owner/operator also is responsible for ensuring that maintenance personnel make appropriate entries in the aircraft maintenance records indicating the aircraft has been approved for return to service. It is the responsibility of the owner and operator to have maintenance performed that may be required between scheduled inspections. A prudent owner will ensure that the company’s standard operating procedures (SOPs) or management company (if used) dictate how maintenance is to be completed and properly logged per FAA regulations. Audits of the maintenance records are strongly recommended to ensure compliance.

Inspections

The operating rule also states that no person may operate an aircraft unless the required inspections are performed. In addition, the rule offers inspection options an operator can choose from in order to maintain aircraft airworthiness. The rule emphasizes that the inspection/maintenance must be performed in accordance with a manufacturer’s maintenance manual and instructions for continued airworthiness. The inspection requirements for aircraft, in various types and operation, are stated in FAR 91, Sections 91.401, 91.403, or Subpart F of FAR 91.

Historically, inspection intervals have been established on the basis of flying hours. However, if utilization is outside the average utilization considered by the manufacturer during inspection/maintenance program development, an operator can have its own program developed and approved by the FAA per 91.409(f)4. Companies with substantial experience operating a particular type of aircraft may choose this method. However, following are the more common inspection intervals for business aircraft.

100-Hour Inspection

Reciprocating-engine-powered and single-engine turbojet/turboprop-powered aircraft (12,500 pounds and under) used to carry passengers for hire (e.g., air charter) or used for flight instruction should be inspected within each 100 hours of time in service by an FAA certificated A&P mechanic, an FAA certificated repair station that is appropriately rated or the aircraft manufacturer. An annual inspection is acceptable as a 100-hour inspection, but the reverse is not true.

Annual Inspection

Any reciprocating-engine-powered or single-engine turbojet/turboprop-powered small aircraft (12,500 pounds and under) flown for business or pleasure is required to be inspected at least annually by an FAA certificated A&P mechanic holding an inspection authorization (IA), by an FAA certificated repair station that is appropriately rated or by the manufacturer of the aircraft. The aircraft may not be operated unless the annual inspection has been performed within the preceding 12 calendar months.

Progressive Inspections

Some airplanes may be inspected in accordance with a progressive inspection (FAR 91.409(d)) or an accepted inspection program (FAR 91.409(f)) wherein portions of the aircraft are inspected and maintained according to a predetermined schedule. For example, large and turbine-powered aircraft and aircraft in fractional operations are on a continuous maintenance/inspection program derived by reliability data, in-service experience and utilization analysis.

Inspection for Large and Turbine-Powered Aircraft

For large and turbine/turboprop-powered aircraft, the operating rules explicitly state that the maintenance inspection program be selected from the choices found in Subpart F of FAR 91. Subpart F lists four accepted inspection program for large and turbine-powered multiengine airplanes. Typically, the manufacturer’s inspection program meets the requirement of the rule, and oftentimes, the inspection program will inform

Airworthy Aircraft

The FARs require owner/operators to maintain the aircraft in an airworthy state prior to each use of the aircraft, including compliance to Part 39, Airworthiness Directives. What is the meaning of airworthy?

Two conditions must be met for a standard category aircraft to be considered airworthy. These conditions are:

(1) The aircraft conforms to its type design (type certificate). Conformity to type design is considered attained when the required and proper components are installed, and they are consistent with the drawings, specifications and other data that are part of the type certificate. Conformity would include applicable supplemental type certificates (STCs) and field-approved alterations.

(2) Operators also are required by the FARs to maintain the aircraft to appropriate instructions. The operator can choose to use the aircraft manufacturer instructions or another maintenance program that is developed by the operator and approved by the FAA. However, due to the resources required on the operator’s part to develop an FAA-approved maintenance manual, most owner/operator aircraft in private operations (i.e., that do not charter the aircraft to the public) will utilize the manufacturer’s recommended inspection program.