



Mapping the Maintenance Paper Chase

In his “Remove (All Doubt) Before Flight” article on page 24, Doug Stewart advocates an informed and methodical approach to preflight inspection. Throughout this issue, articles by FAA’s Small Airplane Directorate staff endeavor to help you become better informed about how FAA defines airworthiness, and how to determine and document that your aircraft meets those requirements. Here’s a methodical way to gather and check those critical documents.

Step One – Type Certificate Data Sheet

As Steve Thompson writes on page 8, the type certificate (TC) documents FAA approval of the aircraft type design. The Type Certificate Data Sheet (TCDS) for the aircraft provides a formal description of the aircraft, engine, or propeller, along with limitations and information on items such as airspeed, weight, and thrust limits. The Regulatory and Guidance Library on FAA’s Web site includes a database of TCDS documents. There are various ways to search, but I used make/model to find the TCDS for my flying club’s Cessna *Skylane*. You need the model year letter to get the right TCDS; for instance, I needed the C182 K TCDS.

Step Two – Repairs and Modifications

All airplanes need repairs, and all repairs must be correctly

documented. Your aircraft needs an FAA Form 337 any time it has undergone a major repair or major alteration, as defined in Appendix A to Title 14 Code of Federal Regulations (14 CFR) part 43 and 14 CFR part 1 (definitions). The exception is 14 CFR part 43 Appendix B paragraph (b), which provides an exclusion for repair stations to perform major repairs and not execute FAA Form 337. It is important to understand that Form 337 falls into the “necessary-but-not-sufficient” category. An aviation maintenance technician (AMT) must also document the work in the aircraft’s maintenance logs. Maintenance records for my club’s C182 K include not only logbook entries for the major repair from deer-strike damage, but also the associated Form 337s.

Remember that complex work performed on the airplane may include major changes to type design, which require approval through a supplemental type certificate (STC). The STC documents FAA’s approval of a product (aircraft, engine, or propeller) modification. It defines the product design change, states how the modification



affects the existing type design, and lists affected serial numbers. Examples of alterations that require an STC include changes to primary structure that could adversely affect strength or flutter/vibration characteristics.

To find out whether FAA has approved any STCs for your aircraft make and model, you can search FAA's STC database. For example, one of the many STCs issued for the C182 K provides for installation

of the J.P. Instruments Primary Engine Data Management System.

Your aircraft records should include

all the necessary paperwork, but if you need a copy of the records FAA holds for a specific N-number, or if you simply want a copy for comparison and verification purposes, the box below includes a Web site address you can use to request it.

Step Three – Inspections

Barry Ballenger's article on page 15 lists key inspection and maintenance items needed to ensure that your aircraft is indeed airworthy. You should be able to find aircraft maintenance log entries for completion of the annual or (if applicable) 100-hour inspection, which includes a check of applicable airworthiness directives and checks for certain operations, e.g., VOR and altimeter/pitot-static checks, transponder checks, and emergency locator transmitter (ELT) battery.

The FAA-approved airplane flight manual (AFM) describes the aircraft's operating limitations (including current aircraft weight and balance). It will

also list required placards and markings. The AFM limitations section for many newer aircraft includes a "Kinds of Operations Equipment List" to supplement the basic day and night VFR/IFR equipment requirements in 14 CFR part 91.

Though you aren't likely to review the TCDS before every flight, you'll learn a lot from locating and reviewing the documents described here. A good pilot can never learn too much about the aircraft.

Safe flights and happy landings!

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