

Nuts, Bolts, and Electrons

The Write Stuff

Fine-tuning Your Maintenance Record Entries

After a grueling nine-hour shift, you breathe a sigh of relief while putting the finishing touches on a Cessna 182 *Skylane* annual inspection. The job was anything but routine, requiring a lengthy struggle with stripped access panel fasteners, a tricky nose wheel tire replacement, and a few ugly upholstery repairs approved by the customer. After polishing a mirror-like shine on the spinner, you glance at your watch and wince at the prospect of being late for dinner again. Knowing the customer is eager to fly the next day, and since no major repairs or alterations were needed, you quickly document the inspection as completed in the maintenance logbook and note that the aircraft can return to service. Done?

Hmm, not so fast. Despite your disdain for microwaved meatloaf, there are some additional items to consider before you close the logbook and punch out. For example (assuming you are dealing with a part 91 operator), did you double check your entry, ensuring it follows the language of the regulation found in Title 14 of the Code of Federal Regulations (14 CFR) section 43.11? How descriptive was your entry of the inspection? In this case, it sounds like it may have lacked some important details. Finally, how legible is your entry? Your personal blend of acronyms and abbreviations might make perfect sense to you, but will someone unfamiliar with what was done be able to read and understand everything?

More Is Better

“The importance of making good maintenance record entries can sometimes get lost in the shuffle of an Aviation Maintenance Technician’s (AMT) daily routine,” says FAA Airworthiness Inspector David Keen. “It’s always good to have clear, complete and descriptive entries to ensure all the hard work you perform is properly documented and remains a vital part of that aircraft’s history.”

In the example above, it’s possible to assume you have met all the regulatory requirements for returning the aircraft to service in an airworthy con-

dition after an annual inspection. But let’s not forget about documenting the corrective actions you also performed. While some of these actions would seem purely cosmetic, failing to document the specifics of these items can cause confusion and muddy the waters of an aircraft’s maintenance history. Also, work that is not documented makes it difficult for a future AMT or repairmen to know what components or systems may have been previously affected or altered. This can have deadly consequences.

Put it in Writing

So just what does a good maintenance record entry entail? In a nutshell, the regulations require that maintenance records answer the three basic questions of what, when, and who. More specifically, they must contain a description of the work or inspection performed, the date it was completed, along with the signature, certificate number, and type of certificate held by the person approving the aircraft (or part) for return to service. Inspections require some additional information, including the aircraft’s total time in service and, if the aircraft is found to be unairworthy, a list of discrepancies must also be supplied to the owner. (See 14 CFR section 43.11 for specifics)

“In several instances, I’ve seen an invoice be a lot more descriptive than the accompanying maintenance record entry,” says Keen. “That’s a definite red flag.” Keen advises AMTs to make logbook entries as thorough as their invoices to ensure sufficient detail.

Another area often overlooked in maintenance records upkeep is the aircraft equipment list. The equipment list is a snapshot of an aircraft’s specific configuration, and it is vital to airworthiness. Alterations made to an aircraft—even minor ones—can impact, and often invalidate weight and balance information if the equipment list is not kept in sync with any changes. Even if the work performed (e.g., swapping out a radio) does not change the weight of

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Did You Know...

The responsibility of proper maintenance record entries isn't just limited to AMTs and repairmen. Pilots must also follow the same requirements in 14 CFR 43.9 when performing preventive maintenance tasks.

the aircraft, the equipment list should still reflect any change that is made. This also helps maintain a more complete history of the aircraft, since some entries are only required to be retained for a specific time. And although equipment lists are

not required for experimental aircraft, it's a good practice to maintain one for this category of aircraft.

A Picture is Worth a Thousand Entries

A common practice among AMTs today to show proof of their work, as well as indicate the condition of a component or part following a sign-off, is to take date-stamped photographs and include them as part of that aircraft's maintenance history. You may also want to make a copy of any photos for yourself if you suspect the item might be tampered with at a later date without a corresponding maintenance record entry.

Major Repairs and Alterations

In addition to recording inspections and routine maintenance performed on an aircraft, AMTs must also remember to document any major repairs or alterations as part of the aircraft's permanent record. Form 337 is used to record these repairs and must

be filed with the aircraft's records as well as the FAA Aircraft Registration branch in Oklahoma City, OK. Keep in mind that in

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addition to the 337, AMTs must also make an accompanying logbook entry that references the major repair or alteration. Additional information on filling out a Form 337 is provided in Advisory Circular (AC) 43-9, *Aircraft Maintenance Records*.

Keep it Simple

To aid with your logbook entry efficiency (and perhaps prevent the onset of writer's cramp), the FAA allows maintenance record entries to refer back to data and procedures found in other documents. However, what you can reference depends on what type of work is being performed.

Minor repairs and alterations need only reference "acceptable data" such as the manufacturer's maintenance manual or information in AC 43.13 *Acceptable Methods, Techniques, and Practices—Aircraft Inspection and Repair*. Major repairs and

alterations must refer to "approved data" such as ADs, Supplemental Type Certificates (STC), or FAA-approved Service Bulletins (SB). (*Note: Under certain circumstances, major repairs can reference a specific example from AC 43.13*). In either case, referencing these documents saves time and helps preserve clarity and consistency with your records.

Another useful tool in the effort to keep maintenance records more organized and complete is the use of electronic records. While their usage is growing, many electronic record systems do not meet the signature requirements in 14 CFR sections 43.9 and 91.417. Aircraft owners/operators are ultimately responsible for the airworthiness of their aircraft, which means they must also ensure any system used to track and record maintenance (electronic or written) complies with the appropriate regulations and reflects the work accurately.

The Bottom Line

The importance of entering good maintenance records cannot be emphasized enough. Besides the many safety aspects, sound record-keeping can also have a significant effect on the owner or operator's confidence in your workmanship. So the next time you've completed a job, don't let your hard work be for naught by not documenting it with a proper record entry. "Although properly documenting your actions may sometimes seem less important than the work itself," cautions Keen, "a lack of detail with records may endanger not only the operator of that aircraft, but can endanger and implicate you as well."

The meatloaf can wait.

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Learn More

FAA Safety Briefing, March/April 2011, p. 28, "Read Any Good Logbooks?"

www.faa.gov/news/safety_briefing/2011/media/MarApr2011.pdf

AMT Handbook – FAA-H-8083-30, Chapter 12 - Publications, Forms and Records

www.faa.gov/library/manuals/aircraft/amt_handbook/

Advisory Circular (AC) 43-9, Aircraft Maintenance Records.

[http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/list/AC%2043-9C/\\$FILE/AC43-9C.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/list/AC%2043-9C/$FILE/AC43-9C.pdf)