



U.S. Department of Transportation
Federal Aviation Administration

Advisory Circular

Subject: Part 91 Maintenance and Inspection
Records

Date: DRAFT

AC No: 91-417

Initiated by: AFS-300

Change:

1 PURPOSE OF THIS ADVISORY CIRCULAR (AC).

1.1 This AC describes methods, procedures, and practices that have been determined to be acceptable means of showing compliance with the record-making and maintenance recordkeeping requirements of Title 14 of the Code of Federal Regulations (14 CFR) part [91](#).

1.2 The contents of this document do not have the force and effect of law and are not meant to bind the public in any way, and the document is intended only to provide information to the public regarding existing requirements under the law or agency policies.

2 AUDIENCE.

2.1 The audience of this AC is registered owners and operators of aircraft and FAA personnel tasked with the review and oversight of said entities.

2.2 This AC does not apply to aircraft maintained under continuous airworthiness maintenance programs as provided in 14 CFR parts [121](#), [129](#), or §§ [91.1411](#) or [135.411\(a\)\(2\)](#).

3 WHERE YOU CAN FIND THIS AC. You can find this AC on the FAA’s website at https://www.faa.gov/regulations_policies/advisory_circulars and the Dynamic Regulatory System (DRS) at <https://drs.faa.gov>.

4 WHAT THIS AC CANCELS. This is a new AC created when AC 43-9C, Maintenance Records, dated June 8, 1998, is canceled.

5 RELATED REGULATIONS.

5.1 Part [1](#)—DEFINITIONS AND ABBREVIATIONS

5.2 Part [43](#)—MAINTENANCE, PREVENTIVE MAINTENANCE, REBUILDING, AND ALTERATION

5.3 Part [61](#)—CERTIFICATION: PILOTS, FLIGHT INSTRUCTORS, AND GROUND INSTRUCTORS

5.4 Part [65](#)—CERTIFICATION: AIRMEN OTHER THAN FLIGHT CREWMEMBERS

5.5 Part [91](#)—GENERAL OPERATING AND FLIGHT RULES

5.5.1 Section [91.1](#) Applicability

5.5.2 Section [91.3](#) Responsibility and authority of pilot in command

5.5.3 Section [91.7](#) Civil aircraft airworthiness

5.5.4 Section [91.9](#) Civil aircraft flight manual, marking, and placard requirements

5.5.5 Section [91.213](#) Inoperative instruments and equipment

5.5.6 Subpart [E](#) Maintenance, Preventive Maintenance, and Alterations

6 RELATED ADVISORY CIRCULARS

6.1 AC 20-[106](#) Aircraft Inspection for the General Aviation Aircraft Owner

6.2 [AC 43-9 Maintenance Records](#)

7 **LEGAL INTERPRETATIONS AND NTSB DECISIONS** – The Office of Chief Counsel issues legal interpretations and makes them available in the Dynamic Regulatory System (DRS) at <https://drs.faa.gov>. Decisions and opinions issued by the National Transportation Board can be found at <https://www.nts.gov/legal/alj/Pages/ONOQuery.aspx>. Samples of those that applied at the time this AC was issued include:

7.1 [MacLeod](#) 2009: Determining Life Status of Life Limited Parts.

7.2 [Easter](#) 2016: Clarification regarding correcting aircraft maintenance records required by 14 CFR 91.417(a)(2), documenting compliance with airworthiness directives under 14 CFR 91.417(a)(2)(v), removing unauthorized comments in an aircraft's maintenance records under 14 CFR part 43, and documenting completion of 100-hour inspection required by 14 CFR 91.409(b).

7.3 [Morey](#) 2017: Request for Legal Interpretation of 14 C.F.R. §§ 43.11(a) Concerning Documenting Maintenance and Inspection Records.

7.4 Robert A. Sturgell v. William R. Armstrong, NTSB Order NO. EA-[5320](#), September 2007.

7.5 Thomas C. Richards v. Shepard M. Weinstein, NTSB Order No. EA-[3675](#), September 1992.

7.6 Administrator v. Calavero, 5 NTSB 1099, NTSB Order No. EA-2321, 1986.

8 DISCUSSION.

8.1 Terms and Conditions for Airworthiness. Title 14 CFR states that a U.S. Standard Airworthiness Certificate is effective until it is surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator.

8.1.1 A U.S. Standard Airworthiness Certificate is effective only as long as the aircraft is registered in the United States and the inspections, maintenance, preventive maintenance, and alterations are performed in accordance with parts 91 and 43.

8.1.2 Under § 91.[403](#) the owner or operator of the aircraft is primarily responsible for ensuring the aircraft remains in an airworthy condition. The responsibility includes—

8.1.2.1 Ensuring only qualified persons perform the required inspections, maintenance, preventive maintenance, and alterations and that the proper maintenance record entries are made.

8.1.2.2 Creating [time in service](#), requirements for time between overhaul (for products or components that must be overhauled), and [life status](#) records for [life-limited parts](#) and obtaining adequate maintenance records for the aircraft records to provide tangible evidence that the aircraft complies with the appropriate airworthiness requirements.

8.1.2.3 In accordance with the terms and conditions listed in block 6 of FAA Form 8100-[2](#), insufficient or nonexistent aircraft records may render the Standard Airworthiness Certificate invalid.

9 MAINTENANCE REQUIREMENTS. Under § 91.405, each owner or operator of an aircraft shall:

- 9.1** Have that aircraft inspected as prescribed in subpart E of part 91.
- 9.2** Between required inspections, have discrepancies repaired as prescribed in part 43, except for placarded inoperative equipment as provided in § 91.405(c).
- 9.3** Ensure that maintenance personnel are authorized and make appropriate entries in the aircraft maintenance records indicating the aircraft has been approved for return to service.
 - 9.3.1** The persons that are authorized to perform inspections, maintenance, preventive maintenance, and alterations and approve the work for return to service can be found in §§ 43.3 and 43.7.
 - 9.3.2** To accomplish inspections and other appropriate maintenance, the aircraft maintenance records, time in service, requirements for time between overhaul (for products or components that must be overhauled), and life status records for life-limited parts must be available to maintenance and inspection personnel.
- 9.4** Have any inoperative instrument or item of equipment, permitted to be inoperative by § 91.213(d)(2), repaired, replaced, removed, or inspected at the next required inspection.
- 9.5** Ensure that a placard has been installed as required by § 43.11 when listed discrepancies include inoperative instruments or equipment. (§ 91.405(d)).

10 MAINTENANCE RECORD RESPONSIBILITIES AND REQUIREMENTS

- 10.1 Responsibilities.** Under § 91.405, all owner/operators of civil aircraft registered in the United States that wish to maintain an airworthiness certificate issued under part 21, subparts H and I are responsible for ensuring the appropriate maintenance records are created to comply with 91.417((a)(2) that establishes the airworthiness of the aircraft under § 91.7.
- 10.2** Under § 91.417 an aircraft owner/operator is primarily responsible for ensuring the proper records are created and maintained for the aircraft, airframe, aircraft engine, propeller, appliance, or component part maintenance. Some of the required records are created under §§ 43.9 and 43.11; however, information on time in service, time since last overhaul (if the product or component is required to be overhauled), and the life status of life-limited parts must be created and maintained by the owner/operator.
 - 10.2.1** Owner/operators may choose any recordkeeping system that ensures compliance with the creation, maintenance, and transfer requirements of §§ 91.417 and 91.419.
 - 10.2.2** Maintenance records may be kept in any accessible and discernible format that provides the required content, including signatures in the English language. While commercially-available computerized maintenance record systems are widespread, they may not meet the requirements of §§ 43.9, 43.11, or 91.417.
 - 10.2.3** The inspection status, time between overhauls (for items required to be overhauled), time in service, life status of life-limited parts, and maintenance records do not have to be kept separately for each aircraft, airframe, aircraft engine, propeller, appliance, or component. Some owners and operators find it advantageous to keep separate or individual records to facilitate transfer of ownership.
 - 10.2.4** If separate maintenance records are kept for the aircraft, airframe, aircraft engine, propeller, appliance, or component part, the entry for the 100-hour inspection

is entered in each, while the annual inspection is only required to be entered into the airframe record.

10.3 Maintenance records under § 43.9 are created by persons authorized to perform maintenance, preventive maintenance, rebuilding, and alterations under § 43.3.

10.3.1 Section 43.9 states that each person who maintains, performs preventive maintenance, rebuilds, or alters an aircraft, airframe, aircraft engine, propeller, appliance, or component part shall make an entry in the maintenance record of that equipment.

10.3.2 Preventive Maintenance. Under § 43.3(g), persons with pilot certificates issued under part 61 (e.g., private pilot (PP), commercial pilot (CP), or airline transport pilot (ATP)) may perform preventive maintenance on any aircraft owned or operated by that pilot which is not used under part 121, 129, or 135 of this chapter.

10.3.2.1 Preventive maintenance is defined in § 1.1 and is limited to those items listed in Part 43 appendix A, paragraph (c). AC 43-12, Preventive Maintenance, contains further information on this subject.

10.3.2.2 A maintenance record must be completed under § 43.9 when preventive maintenance is performed by a pilot.

10.3.3 Maintenance records for work performed on the aircraft must be entered into the owner/operator's chosen record keeping system. Maintenance records for removed products and component parts may take any form that complies with the elements of § 43.9

10.4 Section 43.11 states that the person approving or disapproving for return to service an aircraft, airframe, aircraft engine, propeller, appliance, or component part after any inspection performed in accordance with 14 CFR part 91; 125; 135, § 135.411(a)(1); or § 135.419 shall make an entry in the maintenance record of that equipment. Inspections records will be entered in the recordkeeping system chosen by the owner/operator.

10.5 Content of Records Required by § 91.417(a)

10.5.1 Records of the maintenance, preventive maintenance, and alteration and records of the 100-hour, annual, progressive, and other required or approved inspections, as appropriate, for the aircraft, airframe, engine, propeller, appliance, or component part of an aircraft must be created and maintained.

10.5.2 To comply with § 91.417(a)(1), each maintenance record must include the information required by §§ 43.9. For a full explanation of what maintenance personnel should be providing, reference AC 43-9D. In summary, maintenance, preventive maintenance, and alteration maintenance entries are to include—

10.5.2.1 A description (or reference to data acceptable to the Administrator) of the work performed. The description should be in sufficient detail to permit a person unfamiliar with the work (but familiar with the industry and the regulatory requirements) to understand what was done, and the methods, techniques and practices used.

10.5.2.2 The date of completion of the work performed. This is the date upon which the maintenance, preventive maintenance, and alterations have been completed, and after a determine the work was performed satisfactorily. An extensive work scope may include many dates and even times, but the maintenance record needs to reflect the date a person found that all the work

was performed satisfactorily, all maintenance records are complete, and the approval for return to service can be issued (see, § 43.9(a)(4)).

10.5.2.3 The signature, and certificate number of the person approving the aircraft for return to service. After the work performed has been determined satisfactorily accomplished (see, § 43.9(a)(4)), the person approving the work shall affix—

- A signature, which constitutes an approval for return to service only for the work performed (and described under § 43.9(a)(1)). The person approving the work scope for return to service is responsible for:
 - Being appropriately authorized under § 43.7.
 - Determining the work was performed satisfactorily.
 - If required—
 - Executing a FAA Form 337 for any major repair or alteration accomplished.
 - Revising the operating limitations or flight data in the approved aircraft flight manual.
- The certificate number under which the work was performed.
- Kind of certificate held, for example, Mechanic w/A &/or P, or Certificated Repair Station.

10.5.3 To comply with 91.417(a)(2), the owner or operator must ensure the following records are created or obtained, and maintained—

10.5.3.1 The total time in service of the airframe, each engine, each propeller, and each rotor.

10.5.3.2 The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.

10.5.3.3 The time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis. Overhaul requirements are driven by the owner/operator’s maintenance requirements. Most inspection programs under part 91 do not have a requirement for maintenance other than correcting deficiencies between required inspections.

10.5.3.4 The current inspection status of the aircraft, including the time since the last inspection required by the inspection program under which the aircraft and its appliances are maintained.

10.5.3.5 The current status of applicable airworthiness directives (AD) and safety directives including, for each, the method of compliance, the AD or safety directive number and revision date. If the AD or safety directive involves recurring action, the time and date when the next action is required.

10.5.3.6 Copies of the forms prescribed by § 43.9(d) (FAA Form 337) for each major alteration to the airframe and currently installed engines, rotors, propellers, and appliances.

10.5.3.7 A list of defects furnished to a registered owner or operator under § 43.11 of this chapter shall be retained until the defects are repaired and the aircraft is approved for return to service. If the list of discrepancies includes unairworthy conditions, such as failure to comply with an AD, a ferry permit will be necessary.

10.5.4 When a fuel tank is installed within the passenger compartment or a baggage compartment pursuant to part 43 of this chapter, a copy of FAA Form 337 shall be kept on board the modified aircraft by the owner or operator.

10.5.5 Maintenance personnel must have access to the owner/operator’s records of the [time in service](#), time since the last overhaul if an item is required to be overhauled, current status of [life-limited parts](#), the inspection status, airworthiness directives, and FAA form 337s of the aircraft and its airframe, engine(s), propeller(s), rotor(s), and appliance(s).

10.5.5.1 The owner/operator is responsible for ensuring that the [time in service](#) for each item is created and maintained accurately. Section 43.9 does not require this to be part of the entries for maintenance, preventive maintenance, rebuilding, or alterations. However, § 43.11 requires maintenance personnel to enter [time in service](#) and [life status](#) for [life-limited part](#) in the maintenance record required by parts 91 and 125 and § 43.10.

10.5.5.2 [Time in service](#) with respect to maintenance time records means the time from the moment an aircraft leaves the surface of the earth until it touches it at the next point of landing. Recording devices that collect data for electrical power on, oil pressure, and/or wheels on the ground provide an approximate time in service. Although devices that collect wheels up to wheels down may be accurate, the data must be entered in the maintenance record; the device’s information does not meet the requirements of § 91.417.

10.5.5.3 The use of conservative measurements to create and maintain total time, such as provided by Hobbs meters or recording tachometers are acceptable if the timeframe for any required inspection, airworthiness limitation, or airworthiness directive is not exceeded.

10.5.5.4 In the absence of technical measures for creating and maintaining total time in service, the owner/operator must create a manual method of recording total time in service for each item in the measurement required, *e.g.*, cycles, landings, hours, days, etc.

10.6 Maintenance Records Retention. Section 91.417(b) requires—

10.6.1 Maintenance records associated with § 91.411 Altimeter system and altitude reporting equipment tests and inspections. and 91.413 ATC transponder tests and inspections are to be maintained for 24 months.

10.6.2 Records of the maintenance, preventive maintenance, and alteration and records of the 100-hour, annual, progressive, and other required or approved inspections, as appropriate, for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft shall be retained—

10.6.2.1 Until the work is repeated or superseded by other work or

10.6.2.2 For 1 year after the work is performed.

10.7 Section 91.417(a)(2). Requires six items to be created, made a part of the maintenance record, and maintained as such. Sections 43.9 and 43.11 do not require maintenance personnel to enter all the information required to be kept by the owner or operator. It is ultimately the responsibility of the owner or operator to require, verify, and validate all maintenance record entries are created, maintained, and transferred with the aircraft. The six items are:

10.7.1 Section 91.417(a)(2)(i). Requires a record of total [time in service](#) to be created and kept for the airframe, each engine, each propeller, and each rotor. Paragraph 8.3.6 discussed the owner or operator responsibilities; the maintenance provider depends upon the information provided by that source to complete 43.9, 43.10, and 43.11.

10.7.1.1 Part 1, § 1.1 defines time in service, with respect to maintenance time records, as that time from the moment an aircraft leaves the surface of the earth until it touches down at the next point of landing. Section 43.10(a) defines [life-limited part](#) and [life status](#).

10.7.1.2 In the case of rebuilt engines, § 91.421 permits the maintenance record to be discontinued and the engine time to be started at zero. The manufacturer or an agency approved by the manufacturer that rebuilds and grants zero time to an engine is required by § 91.421 to provide a signed statement containing:

- The date the engine was rebuilt.
- Accomplishment of ADs, see paragraph 8.6.5.
- Accomplishment of SBs.

10.7.1.3 Items put into service before the requirements to keep maintenance records were established must derive [time in service](#) using the procedures described in paragraph 8 or if records prior to the regulatory requirements are just not available from any source, [time in service](#) may be kept since last complete overhaul. Neither of these procedures is acceptable when life-limited parts [life status](#) is involved or for AD compliance. Only the actual records establishing [time in service](#) or life status may be used for life limited part [life status](#) and AD compliance requirements.

10.7.1.4 When engines are assembled from modules (turbojet and some turbopropeller engines) and a total time in service for the entire aircraft engine is unattainable. Thus, the total [time in service](#) for each module must be maintained as required by § 91.417(a)(2).

10.7.2 Section 91.417(a)(2)(ii). Requires the current status of [life-limited parts](#) of each airframe, engine, propeller, rotor, and appliance.

10.7.2.1 Life limits may be expressed in hours, cycles of operation, or calendar time. They are set forth in type certificate data sheets (TCDS), ADs, maintenance manuals, or the limitations section of FAA-approved Airplane Flight Manual (AFM) or Rotorcraft Flight Manual (RFM). Additionally, instructions for continued airworthiness (ICA) require life limits to be specified, refer to 14 CFR part 23 appendix A and part 27 appendix A.

10.7.2.2 Since 2002, each person removing [life limited parts](#) from an aircraft, aircraft engine, or propeller is to provide a record of the part's [life status](#). The information is obtained from the maintenance records and time in

service information provided by the owner or operator. When a [life-limited part](#) is installed and its [life status](#) is provided, the addition of the time in service automatically provides the [life-limited part](#)'s current status.

10.7.3 Section 91.417(a)(2)(iii). Requires a record of the time since last overhaul of all items installed on the aircraft that are required to be overhauled on a specified time basis. Overhaul requirements are determined by the owner/operator usually through a continuous airworthiness maintenance program, or other approved requirements. See, for example, § 135.422.

10.7.4 Section 91.417(a)(2)(iv). Requires the aircraft's current inspection status be created and maintained. While the § 43.11 maintenance record will reflect the type and a brief description of the inspection, the total time in service on the aircraft, and the date of the inspection, it may not reflect the aircraft's current inspection status.

10.7.4.1 When an owner maintains a single record for the aircraft and its installed products and appliances, the entry of the 100-hour or annual inspection is made in that record.

10.7.4.2 When an owner maintains separate records for the airframe, powerplants, and propellers, the entry for the 100-hour inspection is entered in each, while the annual inspection is only required to be entered into the airframe record.

10.7.5 Section 91.417(a)(2)(v). Requires a record of the current status of applicable ADs to be created and maintained. The accomplishment record is to include, at minimum, the method used to comply with the AD, the AD number, and revision date; and if the AD has requirements for recurring action, the time and date when that action is required.

10.7.6 Section 91.417(a)(2)(vi). Prescribes that copies of FAA Form [337](#), Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance) for each major repair or alteration be made a part of the maintenance record. Repair stations do not have to provide an FAA Form [337](#) for major repairs, but if one is requested, it should be provided.

11 LOST OR DESTROYED RECORDS. To reconstruct lost or destroyed records, each element of § 91.417 must be evaluated.

11.1 Total time in service. This element may be done by reference to other records that reflect the time in service; research records maintained by maintenance providers, *e.g.*, repair stations and mechanics. If the research is unsuccessful, the owner/operator may make a notarized statement in the new record describing the loss and establishing the time in service based on the research and the best estimate.

11.2 AD Status. Re-establishing the current status of applicable ADs may present a more formidable problem. If research cannot reestablish status, compliance may require a detailed inspection by maintenance personnel to establish that the applicable ADs have been accomplished.

11.3 Other Records. Other information required by § 91.417(a)(2), includes the current status of [life-limited parts](#), time since last overhaul, current inspection status, and current list of major alterations. Some of these elements may be easier to reestablish than others, losing maintenance records results in troublesome, costly, and time-consuming efforts.

DATE

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AC 91-417

12 AC FEEDBACK FORM. For your convenience, the AC Feedback Form is the last page of this AC. Note any deficiencies found, clarifications needed, or suggested improvements regarding the contents of this AC on the Feedback Form.

Lawrence Fields

Executive Director, Flight Standards Service

DATE

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AC 91.417
Appendix A

APPENDIX A. AIRWORTHINESS DIRECTIVE COMPLIANCE RECORD (SAMPLE FORMAT)

AD Number or Amendment Number	Revision Date	Subject	Method of Compliance	Date of Compliance	Total Time in Service at Compliance	Compliance Due Date Hours/Other	One Time or Recurring	Next Compliance Due Date Hours/Other

Aircraft, Aircraft Engine, Propeller, or Appliance (Circle one.) Make _____ Model _____ S/N _____