



AC NO: 43-9A

DATE: 9/9/77

ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

SUBJECT: MAINTENANCE RECORDS: GENERAL AVIATION AIRCRAFT

1. PURPOSE. To discuss the responsibilities of:
 - a. The owner or operator to keep maintenance records.
 - b. The owner or operator to transfer certain maintenance records to the purchaser.
 - c. Maintenance personnel to make entries in maintenance records.
 2. CANCELLATION. AC 43-9, Maintenance Records: General Aviation Aircraft, dated 2/19/75, is canceled.
 3. REFERENCES. Federal Aviation Regulations (FAR) Parts 43, 91 (various sections), and Advisory Circular AC 43-5.
 4. BACKGROUND. The subject of maintenance records (often referred to as logbooks) is one which is considerably misunderstood by the aviation community. We believe the following discussion will present maintenance records in their proper perspective and clarify several points. Section 91.173 contains the requirement for the owner or operator to keep maintenance records and, among other things, provides that certain records may be disposed of after serving their purpose.
 5. DISCUSSION. Proper management of aircraft operation begins with a good system of maintenance records. A properly completed maintenance record provides the information needed by the owner/operator and maintenance personnel to determine when scheduled maintenance is to be performed. It is the owner's/operator's responsibility to make this determination and to present the aircraft and records when maintenance is to be performed. A properly executed set of maintenance records will save the owner/operator money since maintenance personnel will spend less time in research to establish the status of the item to be worked on. Good records are also
-

Initiated by: AFS-830

71-101-1A01110271 A01
invaluable to maintenance personnel in troubleshooting. Only that information required by Section 91.173 should be included, since irrelevant information tends to clutter up the records and hamper maintenance research.

6. REQUIREMENTS FOR KEEPING MAINTENANCE RECORDS. FAR 91, Section 91.173 (a)(1), sets forth the types of records to be kept and the information to be included (see Appendix 1). Section 91.173, which became effective September 8, 1972, specifically requires records for each propeller, rotor, and appliance in addition to the aircraft and each engine. This does NOT mean that a separate record must be kept for each of these components, although this may prove to be the easiest method. (Since the retention times for the various records will vary, separate records may prove advantageous.) It DOES mean the maintenance records must contain the required information for each item.

7. RESPONSIBILITIES. The information required to be kept in maintenance records is listed in Section 91.173. Carefully study this section and ensure that your records comply (see Appendix 1). Many owners and operators are under the mistaken belief that maintenance records are not their responsibility but rather, that of the person maintaining the aircraft. While it is true that maintenance personnel must make entries for work they perform, the responsibility for seeing that the requirements listed in Section 91.173 are met lies with the owner/operator (see Section 91.165). Maintenance personnel must be thoroughly familiar with the provisions of Sections 43.9 and 43.11 (see Appendix 2), since it is their responsibility to make the proper entries when maintenance, rebuilding, or alteration has been performed. The importance of maintenance records cannot be overemphasized, since they are a prime method of making maintenance personnel responsible for the work they do. They also prevent maintenance personnel being held responsible for work they DID NOT do.

8. TOTAL TIME IN SERVICE. Section 91.173 specifically requires total time in service be kept for the airframe. However, it may be necessary to keep total time in service for other items. For example in the case of life-limited parts, time in service is needed to establish life times (reference Section 91.173(a)(2)(ii)). Other examples would be to establish due dates for AD compliance (reference Section 91.173(a)(2)(v)) or due dates for inspections under an inspection program (reference Section 91.173(a)(2)(iv)).

9. REBUILT ENGINE MAINTENANCE RECORDS. Old maintenance records may be discarded when an engine is REBUILT by the manufacturer or an agency approved by the manufacturer (ref. Section 91.175). It should be noted that the word listed in the rule is REBUILT. The provisions of Section 91.175 DO NOT apply to those engines which are "remanufactured" or "reconditioned" or when other terms coined by various aviation enterprises are used.

10. ALTIMETER SYSTEM AND INSPECTION. Section 91.170 requires that certain aircraft have each static pressure system and each altimeter tested and inspected in accordance with Appendix E of Part 43. When this is accomplished, Section 43.9 requires that maintenance personnel, among other things, describe the work performed and obtain the signature of the person approving the work for return to service. In addition, Part 43, Appendix E, paragraph (c), requires the person approving the aircraft for return to service to record the maximum altitude to which the altimeter has been tested. Section 91.173 (a)(1) requires the owner/operator to have this information in the maintenance records.

11. FAR SECTION 91.217 INSPECTIONS.

a. Misunderstandings continue to exist over the entry to be made following an inspection conducted under the provisions of Section 91.217. These inspections are a part of maintenance and may be performed by any person authorized to approve an aircraft for return to service following maintenance. Entries must be made by maintenance personnel, in accordance with Section 43.9. Special attention must be given to 43.9(a)(5). The owner/operator is required by Section 91.165 to ensure that maintenance personnel make the appropriate entry in the maintenance records. (Not to be confused with the annual, 100-hour, or progressive inspection record entries, which are made under Section 43.11.)

b. It should be noted that the person making the entry is required to name the kind of inspection conducted. In addition, a statement must be made that the inspection was performed in accordance with the instructions and procedures for the kind of inspection program selected by the owner or operator of the airplane. If defects are found during the inspection, a signed and dated list of these defects must be given to the owner/operator.

12. PREVENTIVE MAINTENANCE. Neither Section 91.173 nor Section 43.9 specifically requires "preventive maintenance," as such, to be entered in the maintenance records. However, Section 43.5 prohibits return to service after preventive maintenance unless the item is approved for return to service under Section 43.7. Section 43.5(b) excepts preventive maintenance from this requirement when it is accomplished by a pilot. A mechanic or repair station is authorized, under Section 43.3, to accomplish preventive maintenance but they are not exempt under Section 43.5. Simply stated, preventive maintenance, when accomplished by a pilot, does not require an entry; when accomplished by a mechanic or repair station, it requires an entry.

13. RECORDING TACHOMETERS. Many aircraft have recording tachometers or engine hour meters that record certain conditions which indicate time in service. Some owners/operators are under the mistaken belief that these devices can be used in place of maintenance records. While they may be helpful to the owner in arriving at the total time in service, they do not fulfill the requirement of Section 91.173.

14. AD COMPLIANCE. This subject is covered in Advisory Circular 43-5, Airworthiness Directives for General Aviation Aircraft. Additional information is included herein (see Appendix 3). A separate record may be kept for the airframe and each engine, propeller, rotor, and appliance. This will facilitate record searches when an inspection is needed and if an engine, propeller, rotor, or appliance is removed, the record may be transferred with it. This type of record can also be used as a schedule for recurring inspections. The format is a suggested one, and adherence is not mandatory. Any format that works may be used. Owners should be aware that they may be responsible for noncompliance with ADs when their aircraft are leased to foreign operators. They should, therefore, ensure that ADs are passed on to all their foreign lessees.

15. LIFE-LIMITED PARTS.

a. Present day aircraft and powerplants commonly have life-limited parts installed. These life limits may be referred to as retirement times, service life limitations, parts retirement limitations, retirement life limits, life limitations, or other such terminology and may be expressed in hours, cycles of operation, or calendar time. They will be set forth in Type Certificate Data Sheets, Airworthiness Directives, an operator's Operations Specifications, an FAA approved maintenance or inspection program, the limitations section of the FAA approved airplane or rotorcraft Flight Manual, or other manual required by an operating rule.

b. Section 91.173(a)(2)(ii) requires the owner or operator who has such parts on an aircraft to have records which contain the current status of such parts. Many owners/operators have found it to be advantageous to have a separate record for such parts which shows the name of the part, part number, serial number, date of installation, total time in service, date removed, and signature and certificate number of person installing or removing the part. A separate record, as described, facilitates transferring the record with the part in the event the part is removed and later installed on another aircraft or engine. If a separate record is not kept, the aircraft records are required to contain sufficient information to clearly establish the status of the life-limited parts which are installed.

16. MAINTENANCE RELEASE. Section 43.9 requires certain information to be entered in the maintenance record by the person maintaining, altering, or rebuilding the aircraft or component. In addition to that entry, FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller or Appliance, OMB 04-R0060) is to be executed when a major repair or alteration is accomplished. Certificated repair stations are authorized to issue a Maintenance Release in lieu of the Form 337 for major repairs ONLY. The Maintenance Release may be included on the customer's copy of the work order, or it may be a separate item.

17. MAINTENANCE RECORD ENTRIES. There are two distinct types of maintenance record entries required when maintenance personnel perform maintenance. Section 43.9 contains the requirements for maintenance, repair, and alteration records entries while Section 43.11 prescribes entries which are required to be made for the annual, 100-hour, and progressive inspections. A study of Section 43.11 shows these entries to be quite different from the entries required by Section 43.9. Of particular interest is the entry required when an aircraft IS NOT approved for return to service following an annual inspection. The person making such an inspection and maintenance entry is required to give a list of discrepancies to the owner or lessee. Thereafter, the owner may have the discrepancies corrected by any appropriately rated maintenance facility and have proper entries made in the maintenance record. The owner may then return the aircraft to service. This provision is not made for the 100-hour inspection. The aircraft, after a 100-hour inspection, is either approved or disapproved for return to service. When it is disapproved, another inspection must be conducted to ensure that the items disapproved have been corrected.

18. FORMAT. There is no specified format for maintenance records. As stated before, a separate record is not required. Many owners and operators, however, have found it advantageous to keep separate records for the airframe, engine, and propeller, particularly on multiengine aircraft. Any system that works is acceptable. The important thing is to have a system that will provide the necessary information. There is no requirement that the records be bound; however, bound records or records which have some system of page control normally have greater credibility. Many Airworthiness Directives require repetitive inspections after a specified time in service or number of cycles. This alone could create a need for separate records. In addition, engines, propellers, rotors, and appliances may be changed from one aircraft to another, making separate records a necessity. The use of separate records requires proper identification. The inclusion of minimum information will assist in identification and in keeping confusion to a minimum when maintenance entries are made. This will result in savings to the owner/operator, and more orderly records. Minimum information would be:

a. Aircraft registration number, make, model, and serial numbers, for identification.

b. Make, model, and, when available, serial number of components removed or installed.

c. Installation location.

d. Other items required by FAR 91, such as repetitive inspection requirements, ELT battery due date, altimeter and static system accuracy check, inspection intervals for components, etc.

19. RETENTION OF RECORDS. Section 91.173(b)(1) allows for some records to be discarded after they have served their purpose (see Appendix 1). If a single record is used, care should be taken to discard only those records allowed by Section 91.173 (b)(1). The rule does not make it mandatory that certain records be discarded; rather, it allows them to be discarded. Many owners/operators may find it desirable to retain all their records.

20. LOST OR DESTROYED RECORDS. Occasionally, the records for an aircraft are lost or destroyed. This can create a considerable problem in reconstructing the aircraft records. First, it will be necessary to reestablish the total time in service of the airframe. This can be done by: reference to other records that reflect the total time in service; research of records maintained by a repair facility; and reference to records maintained by individual mechanics, etc. One acceptable method of starting a new record would be for the owner/operator to make a notarized statement in the new record describing the loss and establishing the time in service.

a. The current status of applicable Airworthiness Directives may present a more formidable problem. This may require a detailed inspection by maintenance personnel to establish that the applicable Airworthiness Directives have been complied with. It can readily be seen that this could entail considerable time, expense, and in some instances, might require recompliance with the Airworthiness Directive.

b. Other items required by Section 91.173(a)(2), such as the current status of life-limited parts, time since last overhaul, current inspection status, and current list of major alterations, may present difficult problems. Some items may be easier to reestablish than others, but all are problems. It can readily be seen that losing maintenance records can be troublesome, costly, and time-consuming. Safekeeping of the records is an integral part of a good record system.

21. COMPUTERIZED RECORDS. There is a growing trend toward computerized maintenance records. Many of these systems are offered to owners/operators on a commercial basis. While these are excellent scheduling systems, they normally do not fulfill the requirements of Sections 43.9 or 91.173. The owner/operator who uses such a system is required to ensure it provides the information required by Section 91.173, including signatures. If they do not, modification to make them complete is the owners/operators responsibility. The owner/operator is responsible for compliance with record requirements and may not delegate that responsibility.

22. PUBLIC AIRCRAFT. Prospective purchasers of aircraft, that have been used as public aircraft, should be aware that public aircraft are not subject to the certification and maintenance requirements in the FARs and may not have records which meet the requirements of Section 91.173. Considerable research may be involved in establishing these required records.

23. BEFORE YOU BUY. This is the proper time to take a close look at the maintenance records of any used aircraft you expect to purchase. A well-kept set of maintenance records, which properly identifies all previously performed maintenance, alterations, and AD compliances, is generally a good indicator of the aircraft condition. This is not always the case, but in any event, before you buy, require the owner to produce the maintenance records for your examination, and require correction of any discrepancies found on the aircraft or in the records. Many prospective owners have found it advantageous to have a reliable unbiased maintenance person examine the maintenance records, as well as the aircraft, before negotiations have progressed too far. If the aircraft is purchased, take the time to review and learn the system of the previous owner to ensure compliance and continuity when you modify or continue that system.



R. P. SKULLY
Director, Flight Standards Service

MAINTENANCE RECORDS

Retained until work is repeated, superseded by other work, or one year after the work is performed	Retained and transferred with aircraft when sold
<p>(1) Records of the 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). The records must include--</p> <p>(i) A description (or reference to data acceptable to the Administrator) of the work performed;</p> <p>(ii) The date of completion of the work performed; and</p> <p>(iii) The signature and certificate number of the person approving the aircraft for return to service.</p>	<p>(2) Records containing the following information:</p> <p>(i) The total time in service of the airframe.</p> <p>(ii) The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.</p> <p>(iii) The time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis.</p> <p>(iv) The identification of the current inspection status of the aircraft, including the times since the last inspections required by the inspection program under which the aircraft and its appliances are maintained.</p> <p>(v) The current status of applicable airworthiness directives, including the method of compliance.</p> <p>(vi) A list of current major alterations to each airframe engine, propeller, rotor, and appliance.</p>

9/9/77

APPENDIX 1. MAINTENANCE RECORDS - FAR 91

AC 43-9A
Appendix 1

MAINTENANCE RECORDS

Maintenance Personnel

§ 43.9

Content, form and disposition of maintenance, rebuilding and alteration records (except 100-hour, annual, and progressive inspections).

- (a) Maintenance record entries. Except as provided in paragraphs (b) and (c) of this section, each person who maintains, rebuilds, or alters an aircraft, airframe, aircraft engine, propeller, or appliance shall make an entry in the maintenance record of that equipment containing the following information:
- (1) A description (or reference to data acceptable to the Administrator) of the work performed.
 - (2) The date of completion of the work performed.
 - (3) The name of the person performing the work.
 - (4) If the aircraft, airframe, aircraft engine, propeller, or appliance is approved for return to service, the signature (and if a certified mechanic, the certificate number) of the person who approved it.
 - (5) If the work performed is an inspection required under § 91.217 of this chapter for a large airplane, or a turbo-jet or turbopropeller-powered multi-engine airplane, the entry must name the kind of inspection conducted (continuous airworthiness inspection program, approved inspection program, etc.) and include a statement that -
 - (i) The inspection was performed in accordance with the instructions and procedures for the kind of inspection program selected by the owner or operator of the airplane; and
 - (ii) A signed and dated list of the defects, if any, found during the inspection was given to the owner or operator of the airplane.

§ 43.11

Content, form, and disposition of annual, 100-hour, and progressive inspection records.

- (a) Maintenance record entries. The person approving or disapproving for return to service an aircraft, airframe, aircraft engine, propeller, or appliance after any annual, 100-hour, or progressive inspection required by Part 91 of this chapter shall make an entry in the maintenance record of that equipment, containing the following information:
- (1) The type of inspection (and for progressive inspections, a brief description of the extent of the inspection).
 - (2) The date of the inspection and aircraft time in service.
 - (3) The signature (and if a certified mechanic, the certificate number) of the person approving or disapproving for return to service; the aircraft, airframe, aircraft engine, propeller, or appliance.
 - (4) For annual or 100-hour inspections if the aircraft is approved for return to service, the following or a similarly worded statement-"I certify that this aircraft has been inspected in accordance with (insert type) inspection and was determined to be in airworthy condition".
 - (5) For annual inspections, if the aircraft is not approved for return to service because of needed maintenance, noncompliance with applicable specifications, airworthiness directives or other approved data, the following or a similarly worded statement-"I certify that this aircraft has been inspected in accordance with an annual inspection and a list of discrepancies and unairworthy items dated

APPENDIX 2. MAINTENANCE RECORDS - FAR 43

AC 43-9A
Appendix 2

9/9/77

§ 43.9

In addition to the entry required by this paragraph, major repairs and major alterations shall be entered on a form and the form disposed of, in the manner prescribed in Appendix B, by the person performing the work.

- (b) Each holder of an air carrier or commercial operator certificate that is required by its operating certificate or by approved operations specifications to provide for a continuous airworthiness maintenance program, shall make a record of the maintenance, rebuilding, and alteration, on aircraft, airframes, aircraft engines, propellers, appliances, or parts thereof, which it operates, in accordance with the provisions of Part 121 or Part 127 of this chapter, as appropriate.
- (c) This section does not apply to persons performing the annual, 100-hour, and progressive inspections required by Part 91 of this chapter.

§ 43.11

(date) has been provided for the aircraft owner or lessee".

- (6) For progressive inspections, the following or a similarly worded statement--"I certify that in accordance with a progressive inspection program, a routine inspection of (identify whether aircraft, or components) and a detailed inspection of (identify components) were performed in accordance with a progressive inspection and the aircraft is approved for return to service".
- (b) Listing of discrepancies. If the person performing an annual inspection finds that the aircraft is unairworthy or does not meet the applicable type certificate data, airworthiness directives, or other approved data upon which airworthiness depends, he shall give the owner or lessee a signed and dated copy of a list of discrepancies. If the aircraft is not approved for return to service, he shall send the list of discrepancies to the local FAA District Office, within 48 hours after completing the inspection.

APPENDIX 3. AIRMORTHNESS DIRECTIVE COMPLIANCE RECORD
(SUGGESTED FORMAT)

[illegible]



DOA TECHNICAL UNIT
JUN 3 1983

DOT LIBRARY 1493.2

AC NO: 43-9A

DATE: 9/9/77

ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

SUBJECT: MAINTENANCE RECORDS: GENERAL AVIATION AIRCRAFT

1. PURPOSE. To discuss the responsibilities of:
 - a. The owner or operator to keep maintenance records.
 - b. The owner or operator to transfer certain maintenance records to the purchaser.
 - c. Maintenance personnel to make entries in maintenance records.
 2. CANCELLATION. AC 43-9, Maintenance Records: General Aviation Aircraft, dated 2/19/75, is canceled.
 3. REFERENCES. Federal Aviation Regulations (FAR) Parts 43, 91 (various sections), and Advisory Circular AC 43-5.
 4. BACKGROUND. The subject of maintenance records (often referred to as logbooks) is one which is considerably misunderstood by the aviation community. We believe the following discussion will present maintenance records in their proper perspective and clarify several points. Section 91.173 contains the requirement for the owner or operator to keep maintenance records and, among other things, provides that certain records may be disposed of after serving their purpose.
 5. DISCUSSION. Proper management of aircraft operation begins with a good system of maintenance records. A properly completed maintenance record provides the information needed by the owner/operator and maintenance personnel to determine when scheduled maintenance is to be performed. It is the owner's/operator's responsibility to make this determination and to present the aircraft and records when maintenance is to be performed. A properly executed set of maintenance records will save the owner/operator money since maintenance personnel will spend less time in research to establish the status of the item to be worked on. Good records are also
-

Initiated by: AFS-830

invaluable to maintenance personnel in troubleshooting. Only that information required by Section 91.173 should be included, since irrelevant information tends to clutter up the records and hamper maintenance research.

6. REQUIREMENTS FOR KEEPING MAINTENANCE RECORDS. FAR 91, Section 91.173 (a)(1), sets forth the types of records to be kept and the information to be included (see Appendix 1). Section 91.173, which became effective September 8, 1972, specifically requires records for each propeller, rotor, and appliance in addition to the aircraft and each engine. This does NOT mean that a separate record must be kept for each of these components, although this may prove to be the easiest method. (Since the retention times for the various records will vary, separate records may prove advantageous.) It DOES mean the maintenance records must contain the required information for each item.

7. RESPONSIBILITIES. The information required to be kept in maintenance records is listed in Section 91.173. Carefully study this section and ensure that your records comply (see Appendix 1). Many owners and operators are under the mistaken belief that maintenance records are not their responsibility but rather, that of the person maintaining the aircraft. While it is true that maintenance personnel must make entries for work they perform, the responsibility for seeing that the requirements listed in Section 91.173 are met lies with the owner/operator (see Section 91.165). Maintenance personnel must be thoroughly familiar with the provisions of Sections 43.9 and 43.11 (see Appendix 2), since it is their responsibility to make the proper entries when maintenance, rebuilding, or alteration has been performed. The importance of maintenance records cannot be overemphasized, since they are a prime method of making maintenance personnel responsible for the work they do. They also prevent maintenance personnel being held responsible for work they DID NOT do.

8. TOTAL TIME IN SERVICE. Section 91.173 specifically requires total time in service be kept for the airframe. However, it may be necessary to keep total time in service for other items. For example in the case of life-limited parts, time in service is needed to establish life times (reference Section 91.173(a)(2)(ii)). Other examples would be to establish due dates for AD compliance (reference Section 91.173(a)(2)(v)) or due dates for inspections under an inspection program (reference Section 91.173(a)(2)(iv)).

9. REBUILT ENGINE MAINTENANCE RECORDS. Old maintenance records may be discarded when an engine is REBUILT by the manufacturer or an agency approved by the manufacturer (ref. Section 91.175). It should be noted that the word listed in the rule is REBUILT. The provisions of Section 91.175 DO NOT apply to those engines which are "remanufactured" or "reconditioned" or when other terms coined by various aviation enterprises are used.

10. ALTIMETER SYSTEM AND INSPECTION. Section 91.170 requires that certain aircraft have each static pressure system and each altimeter tested and inspected in accordance with Appendix E of Part 43. When this is accomplished, Section 43.9 requires that maintenance personnel, among other things, describe the work performed and obtain the signature of the person approving the work for return to service. In addition, Part 43, Appendix E, paragraph (c), requires the person approving the aircraft for return to service to record the maximum altitude to which the altimeter has been tested. Section 91.173 (a)(1) requires the owner/operator to have this information in the maintenance records.

11. FAR SECTION 91.217 INSPECTIONS.

a. Misunderstandings continue to exist over the entry to be made following an inspection conducted under the provisions of Section 91.217. These inspections are a part of maintenance and may be performed by any person authorized to approve an aircraft for return to service following maintenance. Entries must be made by maintenance personnel, in accordance with Section 43.9. Special attention must be given to 43.9(a)(5). The owner/operator is required by Section 91.165 to ensure that maintenance personnel make the appropriate entry in the maintenance records. (Not to be confused with the annual, 100-hour, or progressive inspection record entries, which are made under Section 43.11.)

b. It should be noted that the person making the entry is required to name the kind of inspection conducted. In addition, a statement must be made that the inspection was performed in accordance with the instructions and procedures for the kind of inspection program selected by the owner or operator of the airplane. If defects are found during the inspection, a signed and dated list of these defects must be given to the owner/operator.

12. PREVENTIVE MAINTENANCE. Neither Section 91.173 nor Section 43.9 specifically requires "preventive maintenance," as such, to be entered in the maintenance records. However, Section 43.5 prohibits return to service after preventive maintenance unless the item is approved for return to service under Section 43.7. Section 43.5(b) excepts preventive maintenance from this requirement when it is accomplished by a pilot. A mechanic or repair station is authorized, under Section 43.3, to accomplish preventive maintenance but they are not exempt under Section 43.5. Simply stated, preventive maintenance, when accomplished by a pilot, does not require an entry; when accomplished by a mechanic or repair station, it requires an entry.

13. RECORDING TACHOMETERS. Many aircraft have recording tachometers or engine hour meters that record certain conditions which indicate time in service. Some owners/operators are under the mistaken belief that these devices can be used in place of maintenance records. While they may be helpful to the owner in arriving at the total time in service, they do not fulfill the requirement of Section 91.173.

14. AD COMPLIANCE. This subject is covered in Advisory Circular 43-5, Airworthiness Directives for General Aviation Aircraft. Additional information is included herein (see Appendix 3). A separate record may be kept for the airframe and each engine, propeller, rotor, and appliance. This will facilitate record searches when an inspection is needed and if an engine, propeller, rotor, or appliance is removed, the record may be transferred with it. This type of record can also be used as a schedule for recurring inspections. The format is a suggested one, and adherence is not mandatory. Any format that works may be used. Owners should be aware that they may be responsible for noncompliance with ADs when their aircraft are leased to foreign operators. They should, therefore, ensure that ADs are passed on to all their foreign lessees.

15. LIFE-LIMITED PARTS.

a. Present day aircraft and powerplants commonly have life-limited parts installed. These life limits may be referred to as retirement times, service life limitations, parts retirement limitations, retirement life limits, life limitations, or other such terminology and may be expressed in hours, cycles of operation, or calendar time. They will be set forth in Type Certificate Data Sheets, Airworthiness Directives, an operator's Operations Specifications, an FAA approved maintenance or inspection program, the limitations section of the FAA approved airplane or rotorcraft Flight Manual, or other manual required by an operating rule.

b. Section 91.173(a)(2)(ii) requires the owner or operator who has such parts on an aircraft to have records which contain the current status of such parts. Many owners/operators have found it to be advantageous to have a separate record for such parts which shows the name of the part, part number, serial number, date of installation, total time in service, date removed, and signature and certificate number of person installing or removing the part. A separate record, as described, facilitates transferring the record with the part in the event the part is removed and later installed on another aircraft or engine. If a separate record is not kept, the aircraft records are required to contain sufficient information to clearly establish the status of the life-limited parts which are installed.

16. MAINTENANCE RELEASE. Section 43.9 requires certain information to be entered in the maintenance record by the person maintaining, altering, or rebuilding the aircraft or component. In addition to that entry, FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller or Appliance, OMB 04-R0060) is to be executed when a major repair or alteration is accomplished. Certificated repair stations are authorized to issue a Maintenance Release in lieu of the Form 337 for major repairs ONLY. The Maintenance Release may be included on the customer's copy of the work order, or it may be a separate item.

17. MAINTENANCE RECORD ENTRIES. There are two distinct types of maintenance record entries required when maintenance personnel perform maintenance. Section 43.9 contains the requirements for maintenance, repair, and alteration records entries while Section 43.11 prescribes entries which are required to be made for the annual, 100-hour, and progressive inspections. A study of Section 43.11 shows these entries to be quite different from the entries required by Section 43.9. Of particular interest is the entry required when an aircraft IS NOT approved for return to service following an annual inspection. The person making such an inspection and maintenance entry is required to give a list of discrepancies to the owner or lessee. Thereafter, the owner may have the discrepancies corrected by any appropriately rated maintenance facility and have proper entries made in the maintenance record. The owner may then return the aircraft to service. This provision is not made for the 100-hour inspection. The aircraft, after a 100-hour inspection, is either approved or disapproved for return to service. When it is disapproved, another inspection must be conducted to ensure that the items disapproved have been corrected.

18. FORMAT. There is no specified format for maintenance records. As stated before, a separate record is not required. Many owners and operators, however, have found it advantageous to keep separate records for the airframe, engine, and propeller, particularly on multiengine aircraft. Any system that works is acceptable. The important thing is to have a system that will provide the necessary information. There is no requirement that the records be bound; however, bound records or records which have some system of page control normally have greater credibility. Many Airworthiness Directives require repetitive inspections after a specified time in service or number of cycles. This alone could create a need for separate records. In addition, engines, propellers, rotors, and appliances may be changed from one aircraft to another, making separate records a necessity. The use of separate records requires proper identification. The inclusion of minimum information will assist in identification and in keeping confusion to a minimum when maintenance entries are made. This will result in savings to the owner/operator, and more orderly records. Minimum information would be:

- a. Aircraft registration number, make, model, and serial numbers, for identification.
- b. Make, model, and, when available, serial number of components removed or installed.
- c. Installation location.
- d. Other items required by FAR 91, such as repetitive inspection requirements, ELT battery due date, altimeter and static system accuracy check, inspection intervals for components, etc.

19. RETENTION OF RECORDS. Section 91.173(b)(1) allows for some records to be discarded after they have served their purpose (see Appendix 1). If a single record is used, care should be taken to discard only those records allowed by Section 91.173 (b)(1). The rule does not make it mandatory that certain records be discarded; rather, it allows them to be discarded. Many owners/operators may find it desirable to retain all their records.

20. LOST OR DESTROYED RECORDS. Occasionally, the records for an aircraft are lost or destroyed. This can create a considerable problem in reconstructing the aircraft records. First, it will be necessary to reestablish the total time in service of the airframe. This can be done by: reference to other records that reflect the total time in service; research of records maintained by a repair facility; and reference to records maintained by individual mechanics, etc. One acceptable method of starting a new record would be for the owner/operator to make a notarized statement in the new record describing the loss and establishing the time in service.

a. The current status of applicable Airworthiness Directives may present a more formidable problem. This may require a detailed inspection by maintenance personnel to establish that the applicable Airworthiness Directives have been complied with. It can readily be seen that this could entail considerable time, expense, and in some instances, might require recompliance with the Airworthiness Directive.

b. Other items required by Section 91.173(a)(2), such as the current status of life-limited parts, time since last overhaul, current inspection status, and current list of major alterations, may present difficult problems. Some items may be easier to reestablish than others, but all are problems. It can readily be seen that losing maintenance records can be troublesome, costly, and time-consuming. Safekeeping of the records is an integral part of a good record system.

21. COMPUTERIZED RECORDS. There is a growing trend toward computerized maintenance records. Many of these systems are offered to owners/operators on a commercial basis. While these are excellent scheduling systems, they normally do not fulfill the requirements of Sections 43.9 or 91.173. The owner/operator who uses such a system is required to ensure it provides the information required by Section 91.173, including signatures. If they do not, modification to make them complete is the owners/operators responsibility. The owner/operator is responsible for compliance with record requirements and may not delegate that responsibility.

22. PUBLIC AIRCRAFT. Prospective purchasers of aircraft, that have been used as public aircraft, should be aware that public aircraft are not subject to the certification and maintenance requirements in the FARs and may not have records which meet the requirements of Section 91.173. Considerable research may be involved in establishing these required records.

23. BEFORE YOU BUY. This is the proper time to take a close look at the maintenance records of any used aircraft you expect to purchase. A well-kept set of maintenance records, which properly identifies all previously performed maintenance, alterations, and AD compliances, is generally a good indicator of the aircraft condition. This is not always the case, but in any event, before you buy, require the owner to produce the maintenance records for your examination, and require correction of any discrepancies found on the aircraft or in the records. Many prospective owners have found it advantageous to have a reliable unbiased maintenance person examine the maintenance records, as well as the aircraft, before negotiations have progressed too far. If the aircraft is purchased, take the time to review and learn the system of the previous owner to ensure compliance and continuity when you modify or continue that system.



R. P. SKULLY
Director, Flight Standards Service

MAINTENANCE RECORDS

Retained until work is repeated, superseded by other work, or one year after the work is performed	Retained and transferred with aircraft when sold
<p>(1) Records of the 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). The records must include--</p> <p>(i) A description (or reference to data acceptable to the Administrator) of the work performed;</p> <p>(ii) The date of completion of the work performed; and</p> <p>(iii) The signature and certificate number of the person approving the aircraft for return to service.</p>	<p>(2) Records containing the following information:</p> <p>(i) The total time in service of the airframe.</p> <p>(ii) The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.</p> <p>(iii) The time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis.</p> <p>(iv) The identification of the current inspection status of the aircraft, including the times since the last inspections required by the inspection program under which the aircraft and its appliances are maintained.</p> <p>(v) The current status of applicable airworthiness directives, including the method of compliance.</p> <p>(vi) A list of current major alterations to each airframe engine, propeller, rotor, and appliance.</p>

9/9/77

APPENDIX 1. MAINTENANCE RECORDS - FAR 91

AC 43-9A
Appendix 1

Maintenance Personnel

§ 43.9

Content, form and disposition of maintenance, rebuilding and alteration records (except 100-hour, annual, and progressive inspections).

- (a) Maintenance record entries. Except as provided in paragraphs (b) and (c) of this section, each person who maintains, rebuilds, or alters an aircraft, airframe, aircraft engine, propeller, or appliance shall make an entry in the maintenance record of that equipment containing the following information:
- (1) A description (or reference to data acceptable to the Administrator) of the work performed.
 - (2) The date of completion of the work performed.
 - (3) The name of the person performing the work.
 - (4) If the aircraft, airframe, aircraft engine, propeller, or appliance is approved for return to service, the signature (and if a certified mechanic, the certificate number) of the person who approved it.
 - (5) If the work performed is an inspection required under § 91.217 of this chapter for a large airplane, or a turbo-jet or turbopropeller-powered multi-engine airplane, the entry must name the kind of inspection conducted (continuous airworthiness inspection program, approved inspection program, etc.) and include a statement that -
 - (i) The inspection was performed in accordance with the instructions and procedures for the kind of inspection program selected by the owner or operator of the airplane; and
 - (ii) A signed and dated list of the defects, if any, found during the inspection was given to the owner or operator of the airplane.

§ 43.11

Content, form, and disposition of annual, 100-hour, and progressive inspection records.

- (a) Maintenance record entries. The person approving or disapproving for return to service an aircraft, airframe, aircraft engine, propeller, or appliance after any annual, 100-hour, or progressive inspection required by Part 91 of this chapter shall make an entry in the maintenance record of that equipment, containing the following information:
- (1) The type of inspection (and for progressive inspections, a brief description of the extent of the inspection).
 - (2) The date of the inspection and aircraft time in service.
 - (3) The signature (and if a certified mechanic, the certificate number) of the person approving or disapproving for return to service; the aircraft, airframe, aircraft engine, propeller, or appliance.
 - (4) For annual or 100-hour inspections if the aircraft is approved for return to service, the following or a similarly worded statement-"I certify that this aircraft has been inspected in accordance with (insert type) inspection and was determined to be in air-worthy condition".
 - (5) For annual inspections, if the aircraft is not approved for return to service because of needed maintenance, noncompliance with applicable specifications, airworthiness directives or other approved data, the following or a similarly worded statement-"I certify that this aircraft has been inspected in accordance with an annual inspection and a list of discrepancies and unairworthy items dated

§ 43.9

In addition to the entry required by this paragraph, major repairs and major alterations shall be entered on a form and the form disposed of, in the manner prescribed in Appendix B, by the person performing the work.

- (b) Each holder of an air carrier or commercial operator certificate that is required by its operating certificate or by approved operations specifications to provide for a continuous airworthiness maintenance program, shall make a record of the maintenance, rebuilding, and alteration, on aircraft, airframes, aircraft engines, propellers, appliances, or parts thereof, which it operates, in accordance with the provisions of Part 121 or Part 127 of this chapter, as appropriate.
- (c) This section does not apply to persons performing the annual, 100-hour, and progressive inspections required by Part 91 of this chapter.

§ 43.11

(date) has been provided for the aircraft owner or lessee".

- (6) For progressive inspections, the following or a similarly worded statement--"I certify that in accordance with a progressive inspection program, a routine inspection of (identify whether aircraft, or components) and a detailed inspection of (identify components) were performed in accordance with a progressive inspection and the aircraft is approved for return to service".
- (b) Listing of discrepancies. If the person performing an annual inspection finds that the aircraft is unairworthy or does not meet the applicable type certificate data, airworthiness directives, or other approved data upon which airworthiness depends, he shall give the owner or lessee a signed and dated copy of a list of discrepancies. If the aircraft is not approved for return to service, he shall send the list of discrepancies to the local FAA District Office, within 48 hours after completing the inspection.

APPENDIX 3. AIRWORTHINESS DIRECTIVE COMPLIANCE RECORD
(SUGGESTED FORMAT)

[illegible]