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(with Change 1)

INSPECTION AUTHORIZATION INFORMATION GUIDE

U.S. Department of Transportation
Federal Aviation Administration

RECORD OF CHANGES

Change 1 (July 19, 2024)

- Removed references to the Government Printing Office (GPO) throughout.
- Replaced all links and references to the Regulatory Guidance Library (RGL) with the Dynamic Regulatory System (DRS) throughout.
- Updated broken hyperlinks throughout.
- Updated APPROVING MAJOR REPAIRS AND MAJOR ALTERATIONS: “What To Look for During an Inspection” section (pages 6–7).
- Updated “Condition” section (page 14).
- Updated “Malfunction or Defect Reports” section (page 17).
- Updated title of AC 43-210A (page A-17).
- Added FAA ORDERS AND JOB AIDS section (page A-18).

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PREFACE

This publication provides guidance for persons who conduct annual and progressive inspections and approve major repairs and/or major alterations of aircraft holding or eligible to hold a U.S. type certificate. The Federal Aviation Administration (FAA) intends this information for mechanics who hold an Inspection Authorization (IA). This manual stresses the important role that certificated mechanics who hold an inspection authorization have in air safety.

Since inspection requirements and regulations change, the FAA recommends that you contact your local Flight Standards District Office (FSDO) for help with questions regarding inspection, alteration, and repair of aircraft.

Title 14 of the Code of Federal Regulations (14 CFR) part 65, Certification: Airmen Other Than Flight Crewmembers, describes the privileges of mechanics holding an inspection authorization. 14 CFR part 43, Maintenance, Preventive Maintenance, Rebuilding, and Alteration, describes maintenance rules and standards of performance.

This publication is available free of charge for download, in PDF format on the FAA website at www.faa.gov.

Send comments in email form to: afs630comments@faa.gov.

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RENEWAL AND CHANGE OF FIXED BASE

NOTIFICATION OF CHANGE OF FIXED BASE

When the holder of an inspection authorization (IA) moves the base of operation to a different Flight Standards District Office (FSDO) or International Field Office (IFO) area, the receiving office must be notified in writing before exercising the privileges of the authorization.

EXPIRATION OF AN INSPECTION AUTHORIZATION

The IA expires every odd-numbered year (2015, 2017, etc.) on March 31. An IA holder must continue to meet the yearly requirements of Title 14 Code of Federal Regulations (14 CFR) part 65, section (§) 65.93 in order to retain the authorization. Yearly means April 1 through March 31.

RENEWAL OF INSPECTION AUTHORIZATION

Renewal Application Paperwork

Application for renewal requires the following:

1. Evidence the applicant still meets the requirements of 14 CFR § 65.91(c)(1) through (4).
2. Completed Federal Aviation Administration (FAA) Form 8610-1, Mechanic's Application for Inspection Authorization, in duplicate. (Refer to appendix 1, figure 1.)
3. Evidence the applicant meets the requirements of 14 CFR § 65.93(a) for both the first and second year in the form of an activity sheet or log, training certificates, and/or oral test results, as applicable.

4. Verification of the applicant's activities by the jurisdictional FSDO or IFO for renewal at an office other than the jurisdictional office.
5. Evidence that an applicant employed by a repair station personally inspected, performed, and returned aircraft to service (in addition to the signed application).

Eligibility

Meeting the requirements of 14 CFR § 65.93(a) does not mean that the applicant must meet all 5 of the listed requirements. To be eligible for renewal of an IA for a 2-year period, "the applicant must show completion of one of the activities" by March 31 of the first year and completion of one during the second year. For instance, the applicant may show evidence of having "performed at least one annual inspection for each 90 days" during the first year and meet the same requirement for the second year for a total of eight annuals prior to the renewal date to qualify for renewal. The same logic applies to major repairs and major alterations or training. The number of annual inspections, major repairs, and major alterations performed cannot be mixed to meet a *single year's requirement* simply because 14 CFR § 65.93(a) does not provide for such combinations. However, the applicant can meet one requirement of 14 CFR § 65.93(a) for the first year and a different requirement for the second year to qualify for renewal.

NOTE: An inspection program required under 14 CFR part 91, § 91.409(e) is not acceptable as IA activity. Partial inspections such as phases or events on more than one aircraft are not acceptable as activity. A progressive inspection is a complete inspection on one identified aircraft that completes a cycle each 12 calendar months.

Approved Training Renewal Option

Successful completion of an 8-hour refresher course, acceptable to the Administrator, in one of the 12-month periods preceding the renewal application includes the following requirements:

1. The refresher course must contain subjects directly related to aircraft maintenance, inspection, repairs, and alterations. In addition, some nontechnical subjects, such as human factors or professionalism as they relate to aviation maintenance personnel, may be acceptable. Training must not be used to promote a new or existing product.
2. The instructional requirements of § 65.93(a)(4) may be met by accumulating at least 8 hours of maintenance training each year.
3. Each person who intends to use 8 hours of instruction each year to meet § 65.93(a)(4) must, at the time of renewal, provide proof of attendance for instruction received. Acceptable proof of attendance consists of a certificate of training or similar document showing the name of the course, name of attendee, course identification number, expiration date, description of the course content, time in hours, the date, location, and course instructor's name and signature.

   All FSDOs and IFOs must accept, without further showing maintenance, technical training conducted by a manufacturer or its authorized representative on its type-certificated (TC), Supplemental Type Certificate (STC), Technical Standard Order (TSO), or Parts Manufacturer Approval (PMA) product, component, or accessory that is considered acceptable to the Administrator and in compliance with this policy.

Oral Test Requirement

If an IA holder does not meet the renewal requirements at the end of the first year, the holder must take and pass an oral test

administered at their local Flight Standards District Office or International Field Office prior to exercising the privileges of their certificate in the second year.

The oral test given by an aviation safety inspector (ASI) is to ensure that the applicant's knowledge of regulations and standards are current (requires a passing grade of 70 percent). A failure of the oral test will result in nonrenewal of the IA. The ASI administering the oral test will provide the IA with evidence of passing or failing the test in the form of written documentation. The applicant should retain the oral test results.

Renewal Notes

1st YEAR NOTE: The holder of an IA issued less than 90 days before March 31 of the first year (even year) need not comply with § 65.93(a)(1) through (5) for the first year of the 2-year authorization period.

2nd YEAR NOTE: The holder of an IA issued less than 90 days before the expiration date March 31 (odd year) does not need to comply with § 65.93(a)(1) through (5) for that quarter, but the IA holder still needs to apply for a renewal.

A completed example of the IA authorization card, FAA Form 8310-5, is shown in appendix 1, figure 2.

Chapter 2
BASIC FUNCTIONS OF THE INSPECTION AUTHORIZATION

GENERAL

The basic functions of the holder of an inspection authorization (IA) are set forth in Title 14 of the Code of Federal Regulations (14 CFR) part 65, § 65.95. With the exception of aircraft maintained in accordance with a Continuous Airworthiness Maintenance Program under part 121, an IA may inspect and approve for return to service any aircraft or related part or appliance after a major repair or major alteration. Also, the holder of an IA may perform an annual inspection and he or she may supervise or perform a progressive inspection.

APPROVING MAJOR REPAIRS AND MAJOR ALTERATIONS

What To Look for During an Inspection

A primary responsibility of the holder of an IA is to determine airworthiness by inspecting repairs or alterations for conformity to approved data, and assuring that the aircraft is in a condition for safe operation. During inspection of major repairs or major alterations, the holder of an IA must also determine that they are compatible with previous repairs and alterations that have been made to the aircraft.

The holder of an IA must personally perform the inspection. The regulations do not provide for delegation of this responsibility. Approving major repairs and major alterations is a serious responsibility. The approval action should consist of a detailed investigation to establish at least that:

1. All replacement parts installed conform to approved design and/or have traceability to the original equipment manufacturer (OEM).

2. As installed, the installation conforms to approved data that is applicable to the installation.
3. Workmanship meets the requirements of 14 CFR part 43, § 43.13 (the aircraft or product is equal to its original or properly altered condition).
4. The data used is appropriate to the aircraft certification rule (CAR 3, 14 CFR part 23, etc.).
5. Work is complete and compatible with other structures/systems and previously accomplished alterations.
6. Aircraft Safety Alerts including Special Airworthiness Information Bulletins (SAIB) have been reviewed.

The holder of an IA *cannot* approve the *data* for major repairs or major alterations. He or she may, however, inspect to see that alterations conform to data previously approved by the Administrator (14 CFR part 65, § 65.95). This means the holder of an IA ensures that approved data is available and is used as the basis for the approval. This availability determination should be made prior to beginning the repair or alteration.

The applicant (IA) should use FAA Order 8300.16 (as revised), Major Repair Alteration and Data Approval, and FAA field approval job aid(s) when providing approved data for major alterations, not associated with a supplemental type certification (STC). These documents may be found on the FAA Dynamic Regulatory System website.

The purpose of this order is to provide guidance applicable to the data approval process for major repairs and alterations, including field approvals. The source basis for this order is Title 14 of the Code of Federal Regulations (14 CFR) part 43.

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This order defines the process for the approval of technical data for major repairs and major alterations. This order does not provide guidance for making decisions on major or minor changes in type design.

Definitions; The use of the terms “major” and “minor” are sometimes inappropriately applied or misunderstood. A major change in type design can be approved only by an ACO or an ODA holder with Supplemental Type Certificate (STC) or type certificate (TC) authorization. A major alteration requires the use of FAA-approved technical data. Minor alterations only require data that is acceptable to the FAA. During an evaluation, an anticipated major alteration may be subsequently classified as a major change in type design, and thus would require application for an amended TC or STC.

Job Aid; In order to assist the applicant, the Major Repair and Alteration Data Approval Job Aid associated with this order may be used. The job aid lists those alterations that fall within the authority of this order and those that the FAA has determined must be processed as major changes in type design. The job aid includes description of a reclassification request process applicants may use if they believe a specific change does not warrant the STC process.

If data is unavailable, or if the holder of an IA is unsure of the acceptability of the available data, the local Aviation Safety Inspector (ASI) should be consulted. The ASI may, as the circumstances warrant, be able to:

1. Establish an acceptable basis for approval,
2. Approve the data, or
3. Recommend application for a supplemental type certificate.

Quite often major repairs are performed that are eventually covered by fabric, metal skin, or another structure. When this situation exists, the holder of an IA should have a clear understanding with the mechanic performing the repair that a precover inspection is necessary. The inspection should assure that the repair was made in accordance with acceptable methods, techniques, and practices prescribed by 14 CFR part 43 and that the structure to be covered is free from defects, corrosion, or wood rot, and is protected from the elements. In addition, the holder of an IA should inspect other affected areas for hidden damage if the aircraft has been involved in an accident or incident. An entry is required to be made in the maintenance record and FAA Form 337, Major Repair and Alteration, must be completed. (Refer to appendix 1, figure 3, showing typical entries on the front and back of FAA Form 337.)

Minor deviation from approved data is permissible if the change is one that could be approved as a minor alteration when considered alone. Be sure to list the deviations on FAA Form 337 and make an entry in the maintenance record when completing the aircraft records. When in doubt, contact the local ASI who may decide the change is not minor and would need specific approval or an amendment of the original approval.

Approved Data

Substantiating and descriptive technical data sources used to make a major repair or alteration that is approved by the Administrator include those on the following list:

1. Type Certificate Data Sheets (TCDS).
2. Supplemental Type Certificate (STC) data, provided it specifically applies to the item being repaired/altered. Such data may be used in whole or part as included within the design data associated with the STC.

3. Appliance manufacturer's manuals or instructions, unless specifically not approved by the Administrator, are approved for major repairs.
4. Airworthiness Directives (ADs).
5. FAA Form 337, which has been used to approve multiple identical aircraft (only by the original modifier).

   NOTE: Aviation safety inspectors (ASI) no longer approve data for use on multiple aircraft.
6. U.S. Civil Aviation Authority (CAA) Form 337, dated before October 1, 1955.
7. FAA-approved portions of SRMs.
8. Designated Engineering Representative (DER)-approved data, only when approval is authorized under his or her specific delegation.
9. Organization Designation Authorization (ODA)-approved data, when the major alteration is performed specific to the authorization granted.
10. Data in the form of an Appliance Type Approval issued by the Minister of Transport Canada for those parts or appliances for which there is no current Technical Standard Order (TSO) available. The installation manual provided with the appliance includes the Transport Canada certificate as well as the date of issuance and an environmental qualification statement.
11. Foreign bulletins, for use on U.S.-certificated foreign aircraft, when approved by the foreign authority.
12. Data describing an article or appliance used in an alteration which is FAA-approved under a TSO. As such, the conditions and tests required for TSO approval of an article are minimum performance standards. The article may be installed only if further evaluation by the operator (applicant) documents an acceptable installation which may be approved by the Administrator.

13. Data describing a part or appliance used in an alteration which is FAA-approved under a Parts Manufacturer Approval (PMA). An STC may be required to obtain a PMA as a means of assessing Airworthiness and/or performance of the part.

    NOTE: Installation eligibility for subsequent installation or reinstallation of such part or appliance in a type-certificated (TC) aircraft, other than the aircraft for which airworthiness was originally demonstrated, is acceptable, provided the part or appliance meets its performance requirements and is operationally compatible for installation. The operator/applicant must provide evidence of previously approved installation by TC, STC, or field approval on FAA Form 337 that will serve as a basis for follow-on field approval.

14. Any FAA-approved Service Bulletins (SB) and letters or similar documents, including DER approvals.

15. Foreign bulletins as apply to a U.S.-certificated product made by a foreign manufacturer located within a country with whom a Bilateral Agreement (BA) is in place and by letter of specific authorization issued by the foreign civil air authority. The Bilateral Web site is located at https://www.faa.gov/aircraft/air_cert/international/bilateral_agreements/baa_basa_listing.

16. Other data approved by the Administrator.

17. Advisory Circular (AC) 43.13-1, current edition, for FAA-approved major repairs on nonpressurized areas of aircraft only when the user determines that it is:

    a. Appropriate to the product being repaired;

    b. Directly applicable to the repair being made; and

    c. Not contrary to the airframe, engine, propeller, product, or appliance manufacturer's data.

18. AC 43.13-2, current edition, for FAA-approved major alterations on nonpressurized areas of aircraft 12,500 pounds gross weight or less only when the user determines that it is:
    a. Appropriate to the product being repaired;
    b. Directly applicable to the alteration being made; and
    c. Not contrary to the airframe, engine, propeller, product, or appliance manufacturer's data.
19. Service and repair data provided by small airplane manufacturers (although, in most cases, not specifically approved) has provided for continued airworthiness of their product. Service experience in using this data when performing major repairs to nonpressurized small airplanes that were originally type certificated before January 1, 1980, has proven to be very reliable if followed with no deviations. When the data is used in this manner, the manufacturer's data (with page, paragraph, etc.) must be referenced on FAA Form 337 in block 8.

Components of the Inspection

Inspecting repairs or alterations consists of these basic operations:

1. Determine that the repair or alteration data has FAA approval.
2. Inspect the configuration of the repair or alteration for conformity to the approved data and the performance standards of 14 CFR part 43. At the same time, the aircraft should still comply with applicable airworthiness requirements, and the repair or alteration should be compatible with all other installations.
3. Ensure that all operating limitations affected by an alteration are appropriately revised. Sometimes, limitations are in the form of flight manual supplements, instrument range

markings, placards, or combinations of these. See the local ASI for limitations on changes which can be made.

4. Determine that aircraft record entries have been made and the weight and balance data and equipment list have been revised, when appropriate. There should be a statement on the FAA Form 337 to the effect that the weight and balance data and equipment list have been revised. When an alteration results in a change in the center-of-gravity (CG) position, the affected CG limit should be investigated under adverse loading conditions unless the new CG falls within an approved empty CG range. For instance, if the CG has shifted aft, the loading conditions should be computed to see that the aircraft does not exceed the aft CG limit. It is the pilot's responsibility to have the aircraft correctly loaded.

   However, when approving an alteration, it is the IA's responsibility to see that weight and balance data have been revised. The aircraft record entries may refer to the FAA Form 337 for details, such as: "Installed STOL kit in accordance with STC SA 940 CE drawing number 5084 dated April 24, 1996. See FAA Form 337, this date, for details."

5. Indicate approval in block 7 of FAA Form 337, and return both copies to the person who performed the work, for disposition in accordance with 14 CFR part 43, appendix B.

ANNUAL AND PROGRESSIVE INSPECTIONS

The procedures and scope for annual inspections are set forth in 14 CFR part 43, appendix D, and should be followed in detail. The scope and detail for a progressive inspection is established by the owner or operator in accordance with 14 CFR part 91, § 91.409(d). There are additional requirements for annual and progressive inspections listed in 14 CFR part 43, § 43.15. The scope and detail of 100-hour and annual inspections are the same. Record entries are very important as they are the only evidence an aircraft owner has to show compliance with the

inspection requirements of 14 CFR part 91, § 91.409. (Refer to appendix 1, figure 4, of this manual.)

The following reminders should help determine aircraft compliance with all airworthiness requirements. (Refer to 14 CFR part 43, § 43.15.)

Configuration

The aircraft should conform to the aircraft specification or type certificate data sheet, any changes by supplemental type certificates, and/or its properly altered condition. When the aircraft does not conform, use the procedures for "unairworthy" items listed in 14 CFR part 43, § 43.11(a)(5).

1. Alterations to the product may have changed some of the operating limitations.
2. Unrecorded alterations or repairs may have been made in the past and warrant one of the following:
    a. Contacting the owner for pertinent information
    b. Conducting an inspection and personally approving for return to service by completing FAA Form 337, if approved data is available
    c. Contacting the local ASI for assistance
3. The aircraft specification or type certificate data sheet indicates when a flight manual is required. It also identifies limitations which must be displayed in the form of markings and placards.
4. Unlike the specifications, type certificate data sheets do not contain a list of equipment approved for a particular aircraft. The list of required and optional equipment can be found in the equipment list furnished by the manufacturer of the aircraft. Sometimes a later issue of the list is needed to cover recently approved items. Serial number eligibility should always be considered.

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Condition

The holder of an IA may use the checklist in 14 CFR part 43, appendix D, the manufacturer's inspection sheets, or a checklist designed by the holder of an IA, that includes the scope and detail of the items listed in appendix D, to check the condition of

the entire aircraft. This includes checks of the various systems listed in 14 CFR part 43, § 43.15.

Routine servicing is *not* a part of the annual inspection. The inspection itself is essentially a visual evaluation of the condition of the aircraft and its components and certain operational checks. The manufacturer may recommend certain services to be performed at various operating intervals. These services can often—in fact, should—be done conveniently during an annual inspection, but are not considered to be a part of the inspection itself.

It is very important that the holder of an IA be familiar with the manufacturer's service manuals, bulletins, and letters for the product being inspected. Use these publications to avoid overlooking problem areas.

When the holder of an IA approves an aircraft for return to service, he or she will be held responsible for the condition of the aircraft *as of the time of approval*.

Minimum Equipment List

The minimum equipment list (MEL) is intended to permit operations with certain inoperative items of equipment for the minimum period of time necessary until repairs can be accomplished. It is important that repairs are accomplished at the earliest opportunity in order to return the aircraft to its design

level of safety and reliability. Be mindful of the following points with respect to MELs:

1. When inspecting aircraft operating with an MEL, the holder of an IA should review the document where inoperative items are recorded (aircraft maintenance record, logbook, discrepancy record, etc.) to determine the state of airworthiness with regard to those recorded discrepancies. Inspections of aircraft with approved MELs will be in accordance with 14 CFR under which the MEL was issued.
2. Those MELs specifying repair intervals through the use of A, B. C, D codes require repairs of deferred items at or prior to the repair times established by the letter designated category. In such instances, some items previously deferred may not be eligible for continued deference at the inspection or may require additional maintenance. Where repair intervals are not specified by codes in the MEL, all MEL-authorized inoperative instruments and/or equipment should be repaired or inspected and deferred before approval for return to service.
3. Aircraft established on a progressive inspection program require that all MEL-authorized inoperative items be repaired or inspected and deferred at each inspection whether or not the item is encompassed in that particular segment.
4. When inspecting aircraft operating without an MEL, 14 CFR part 91, § 91.213(d), allows certain aircraft not having an approved MEL to be flown with inoperative instruments and/or equipment. These aircraft may be presented for annual or progressive inspection with such items previously deferred or may have inoperative instruments and equipment deferred during an inspection. In either case, the holder of an IA is required by 14 CFR part 43, § 43.13(b) to determine that:
    a. The deferrals are eligible within the guidelines of that rule.

b. All conditions for deferral are met, including proper recordation in accordance with 14 CFR part 43, sections (§§) 43.9 and 43.11.

c. Deferral of any item or combination of items will not affect the intended function of any other operable instruments and/or equipment, or in any manner constitute a hazard to the aircraft. When these requirements are met, such an aircraft is considered to be in a properly altered condition with regard to those deferred items.

Airworthiness Directives

The holder of an IA is required by 14 CFR part 43, § 43.13, to determine that all applicable ADs for aircraft, powerplants, propellers, instruments, and appliances have been accomplished. You must consider the following:

1. If the maintenance records indicate compliance with an AD, the holder of an IA should make a reasonable attempt to verify the compliance. It is not uncommon for a component to have compliance with an AD accomplished and properly recorded then later be replaced by another component on which the AD has not been accomplished. The holder of an IA is not expected to disassemble major components (cylinders, crankcases, etc.) if adequate records of compliance exist.
2. When the maintenance records *do not* contain indications of AD compliance, the holder of an IA should:
   a. Make the AD an item on a discrepancy list provided to the owner, in accordance with 14 CFR part 43, § 43.11(b);
   b. With the owner's concurrence, do whatever disassembly is required to determine the status of compliance; or
   c. Obtain concurrence of the owner to comply with the AD.
3. Often, an AD calls for an inspection, with a modification or inspection required at a later date. It is very important to

4. identify, in the maintenance record entry, the portion of the AD complied with and the exact method of compliance.
5. 14 CFR part 91, § 91.417(a)(2)(v) requires each registered owner or operator to keep a record of the current status of applicable ADs. This status includes for each the method of compliance, AD number, and revision date. If the AD involves recurring action, the time and date should be recorded when the next action is required. As a vital part of the services performed, the holder of an IA may wish to provide the owner with information he or she is expected to keep. (Refer to appendix 1, figure 5.)
6. The owner should also be informed of any subsequent requirements of an AD or whether a reinspection is required at operating intervals other than at annual inspections. Often, the subsequent requirements are at 100-hour intervals and will need to be done whether or not the aircraft is required to have 100-hour inspections. Where a progressive inspection is involved, the approved program should state how and when the AD review will be accomplished. However, as a mechanic or IA, you should be aware of an AD that is pending or due, and is not in the area you are inspecting. It is good customer relations to inform the owner or pilot of the situation.

Malfunction or Defect Reports

Malfunctions or Defect Reports are an important source of service experience. All malfunctions or defects that come to the attention of the holder of an IA should be reported. Prompt reporting will contribute much toward improving air safety by helping correct unsafe conditions. Service difficulties, malfunctions and defects are reported to the FAA though the Service Difficulty Reporting System (SDRS). This system is used for the reporting of findings for both Malfunction or Defect

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Reports and Service Difficulty Reports. This system also contains a searchable report data base of archived and current submissions. The (SDRS) website is found at: https://sdrs.faa.gov/.

Paperwork Review

The owner or operator is responsible for maintaining the equipment list, CG and weight distribution computations, and loading schedules, if necessary. The following items must be considered:

1. The holder of an IA as required by 14 CFR part 43, § 43.13, determines that the required placards and documents set forth in the aircraft specification or type certificate data sheet are available and current. The aircraft should be reported as being in an unairworthy condition if these placards and documents are not available. A missing, incorrect, or improperly located placard is considered an unairworthy item, and the owner or operator should be informed that, under the requirements of 14 CFR part 91, § 91.9, the aircraft may not be operated until a correct and properly placed placard is available.
2. The holder of an IA should refer to the registration and airworthiness certificates for the owner's name and address; the aircraft make, model, registration, and serial numbers needed for recording purposes. Be sure not to use manufacturer trade names as they do not always coincide with the actual model designation (Cessna Skylane model designation is 182, Piper Seneca III is PA 34 220T, etc.). If registration and airworthiness certificates are not available, the aircraft does not need to be reported in unairworthy condition; however, the owner or operator should be informed that the documents required by 14 CFR part 91, § 91.203(a)(2),

should be in the aircraft and the airworthiness certificate displayed *when the aircraft is operated.*

3. On aircraft for which no approved flight manual is required, the operating limitations prescribed during original certification, and as required by 14 CFR part 91, § 91.9, must be carried in or be affixed to the aircraft. Range markings on the instruments, placards, and listings must be worded and located as specified in the type certificate data sheet. (Refer to appendix 1, figure 7.)

Aircraft Markings

Required aircraft identification markings are discussed in 14 CFR part 45. It is the owner's or operator's responsibility to have the nationality and registration markings properly displayed on the aircraft (14 CFR part 91, § 91.9(c)). The holder of an IA can and should offer advisory service to owners and operators in regard to any deficiencies in markings; however, such deficiencies are not cause to report an aircraft in "unairworthy" condition.

Aircraft With Discrepancies or Unairworthy Conditions

If the aircraft is not approved for return to service after a required inspection, use the procedures specified in 14 CFR part 43, § 43.11. This will permit an owner to assume responsibility for having the discrepancies corrected prior to operating the aircraft. Discrepancies or unairworthy conditions can be resolved in the following ways:

1. The discrepancies can be cleared by a person who is authorized by 14 CFR part 43 to do the work. Preventive maintenance items could be cleared by a pilot who owns or operates the aircraft, provided the aircraft is not used under 14 CFR part 121, 129, or 135; except that approval may be granted to allow a pilot operating a rotorcraft in a remote area under 14 CFR part 135 to perform preventive maintenance.

2. The owner may want the aircraft flown to another location to have repairs completed, in which case the owner should be advised that the issuance of FAA Form 8130-7, Special Flight Permit, is required. This form is commonly called a ferry permit and is detailed in 14 CFR part 21, § 21.197. The certificate may be obtained in person or by fax at the local FSDO or from a Designated Airworthiness Representative.
3. If the aircraft is found to be in an unairworthy condition, an entry will be made in the maintenance records that the inspection was completed and a list of unairworthy items was provided to the owner. When all unairworthy items are corrected by a person authorized to perform maintenance and that person makes an entry in the maintenance record for the correction of those items, the aircraft is approved for return to service. (Refer to appendix 1, figures 8 and 9.)

Incomplete Inspection

If an annual inspection is not completed, the holder of an IA should:

1. Indicate any discrepancies found in the aircraft records.
2. *Not* indicate that an annual inspection was completed.
3. Indicate in the aircraft records the extent to which the inspection was completed and all work accomplished.

Chapter 3
MAINTENANCE RECORDS

REQUIRED RECORDATION

The holder of an IA and other maintenance personnel or agencies are required to record maintenance, inspections, or alterations performed or approved in accordance with the requirements of 14 CFR part 43, §§ 43.9 and 43.11. The owner or operator is required by 14 CFR part 91, § 91.417 to keep maintenance records. The holder of an IA is also required to indicate the total aircraft time in service when a required inspection is done.

Responsibility for maintenance work performed rests with the person whose signature and certificate number is entered on the appropriate maintenance record and/or forms. The responsibility for annual and progressive inspections and approval for return to service after major repairs or major alterations is assumed by the holder of an IA whose signature and certificate number appears on the appropriate maintenance records.

FAA FORM 337

FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance), serves two purpose. It provides:

1. Owners and operators with a record of major repairs and major alterations, indicating details and approval.
2. The FAA with a copy for the aircraft records.

An example of a typical completed FAA Form 337 is provided in appendix 1, figure 3.

Completion

The person who performed or supervised the major repair or major alteration prepares the original FAA Form 337 (two originals). Instructions for the completion of FAA Form 337 appear in AC 43.9-1 (as revised), Instructions for Completion of FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance). The holder of an IA then further processes the forms when they are presented for approval. If the IA holder finds a major alteration or a major repair to be in conformity with FAA-approved data, the IA holder must review the FAA Form 337 for completeness and accuracy, and complete item 7. The IA holder should ensure that the duplicate is an exact and legible reproduction of the original. Signatures should be original in ink, and not carbon copies.

Disposition

In accordance with 14 CFR part 43, the person performing a major repair or major alteration must make the proper entry in the maintenance records and distribute the originals of the completed and signed FAA Form 337 to the:

1. Aircraft owner and,
2. FAA in one of the following two forms:
    a. One completed hardcopy form within 48 hours to:

        Federal Aviation Administration
        Aircraft Registration Branch, AFS-751
        PO Box 25724
        Oklahoma City, OK 73125

    b. An electronic form (with electronic signature) automatically through the Web site at https://www.faa.gov/documentLibrary/media/Form/FAA_Form_337_PRA_extension_July_31_2026.pdf.

If the FAA Form 337 is completed for extended-range fuel tanks installed within the passenger compartment or a baggage compartment, the person who performs the work and the person authorized to approve the work by 14 CFR part 43, § 43.7, must execute an FAA Form 337 in at least triplicate, as required by 14 CFR part 43, appendix B. One copy of the FAA Form 337 must be placed on board the aircraft, as specified in 14 CFR part 91, § 91.417(d). The remaining copies are distributed as previously mentioned.

If FAA Form 337 has been completed for engines, propellers, spare parts or components, both copies of the form, with the approval portion completed, should be attached to the part or component until it is installed on an aircraft. The mechanic who makes the installation will, in accordance with 14 CFR part 43, § 43.9(a)(4), complete both copies of FAA Form 337 by filling in blocks 1 and 2, and sign for the installation in the aircraft records, making reference to the FAA Form 337 in the record entry. The copies are distributed as previously mentioned.

WEIGHT AND BALANCE

Weight and balance data is not required on the FAA Form 337. However, it is imperative that weight and balance checks be made very carefully. Since aircraft manufacturers use varying methods of weight and balance control, it not feasible to provide a universally adaptable method. The example provided in appendix 1, figure 10, of this guide is general in nature and can be modified to suit the aircraft involved. When revising weight and balance data, the following general guidelines should be used:

1. The weight and balance data should be kept together in the aircraft records.
2. When making revisions, use a permanent, easily identified method with full-size sheets of paper large enough to contain

complete computations and to minimize the possibility of becoming detached or lost.

3. Each page should be identified with the aircraft by make, model, serial number, and registration number.
4. The pages should be signed and dated by the person making the revision.
5. The nature of the weight change should be described.
6. The old weight and balance data should be marked “superseded” and dated.
7. A new page should show the date of the old figures it supersedes.
8. Appropriate fore and/or aft extreme loading conditions should be investigated and the computations shown.
9. Example loading computations may be helpful.
10. On large aircraft, be careful to distinguish between empty weight and operating weights that may include commissary supplies, spare parts, lavatory water, etc.
11. On small aircraft, it is often convenient to post a placard in the aircraft indicating the empty weight, useful load, empty CG, and example loadings or general instructions to cover the most likely loading conditions. (Refer to 14 CFR § 91.9(b)(2).) AC 120-27 (as revised), Aircraft Weight and Balance Control, and FAA-H-8083-1 (as revised), Aircraft Weight and Balance Handbook, contain useful information applicable to the functions performed by the holder of an IA on general aviation aircraft.

Chapter 4
SUGGESTIONS FOR DEVELOPING GOOD OWNER/IA RELATIONS

Be sure to come to a mutual agreement with the aircraft owner concerning exactly what work is to be performed. Misunderstandings usually result from a lack of clear communication. Get it straight. Attention to the following details will usually avoid the ill will a later disagreement could generate.

1. Itemize the work to be done so the owner will have a clear understanding of the work order.
2. Establish a firm understanding about the cost, or range of cost, anticipated for the job.
3. If an annual inspection is involved, indicate that certain maintenance is required to perform the inspection, such as:
    a. Removing cowling and fairing, and opening inspection plates.
    b. Cleaning the aircraft and engine.
    c. Disassembling wheels and other components to determine their condition.
4. Advise the owner that an annual inspection involves determination of compliance with aircraft specifications and ADs.
5. Agree whether routine servicing is to be included as part of the inspection or if it is to be performed separately. Such servicing is not a part of the inspection, but may be conveniently done while conducting the inspection. Items might include:
    a. Cleaning spark plugs,
    b. Servicing landing gear shock struts,
    c. Changing oil,

d. Making minor adjustments,

e. Servicing brakes,

f. Dressing nicked propeller blades,

g. Lubricating where necessary, or

h. Stop-drilling small cracks and minor patching of cowling and baffles.

6. The owner should be made aware that the annual or progressive inspection does not include correction of discrepancies or unairworthy items and that such maintenance will be additional to the inspection. Maintenance and repairs may be accomplished simultaneously with the inspection by a person authorized to perform maintenance if the owner and the IA holder agree. This method would result in an aircraft that is approved for return to service upon completion of the inspection. A written list of discrepancies and unairworthy items not repaired concurrently with the inspection must be made and given to the owner. Record uncorrected discrepancies and unairworthy items in the maintenance records. The owner must make arrangement for correction or deferral of items on the list of discrepancies and unairworthy items with a person authorized to perform maintenance prior to returning the aircraft to service. The holder of the IA ensures that any item permitted to be inoperative by a MEL or under 14 CFR part 91, § 91.213(d)(2) is properly placarded and any maintenance for deferral has been performed. Any deferred items are to be included on the list of discrepancies and unairworthy items. The owner should be informed that the aircraft should not be operated until the discrepancies and unairworthy items are corrected or are appropriately deferred.

7. Establish a reasonable time frame to accomplish the inspection.

8. Request the owner to supply the complete aircraft records (airframe, engines, and propellers) for study, review, and entries.

Point out that this is necessary to conduct an annual inspection properly.

9. Complete the inspection as soon as practicable. An aircraft can sit idle in a shop waiting for parts, even though the inspection has actually been completed. In this case, it is advisable to officially report the aircraft unairworthy. (Refer to 14 CFR part 43, § 43.11(a)(5).) When the parts arrive, the repairs can be completed and the aircraft approved for return to service in the usual manner by the person who makes the repairs. The time lapse may represent several weeks or months, and conditions can deteriorate on the aircraft. Also, there is the chance that an AD involving some part of the aircraft may have been issued in the interim. In these cases, it might be unwise to complete the repairs originally intended and sign off the aircraft as airworthy without doing another complete inspection.

10. Complete the aircraft record entries as required by 14 CFR part 43, §§ 43.9 and 43.11 and provide sufficient information for the owner to comply with 14 CFR part 91, § 91.417(a)(2)(i). Make adequate descriptions of repairs or alterations if accomplished along with the inspection.

11. Record compliance with all ADs actually accomplished. Provide sufficient information for the owner to comply with 14 CFR part 91, § 91.417(a)(2)(v). A general statement such as “All ADs complied with” is *not* an adequate entry and should be avoided. Many owners keep a separate record of AD compliance in the back of the logbook or in a section specifically provided for this record. This is a good place to identify the ADs of a recurring nature and show when the next compliance is required. (Refer to appendix 1, figures 12 and 13, for typical entries.)

12. When approving repairs and alterations, the IA holder should be available as work progresses on major jobs; affected areas and structures can be seen and repairs can be inspected and improved more readily than after completion of the entire job.

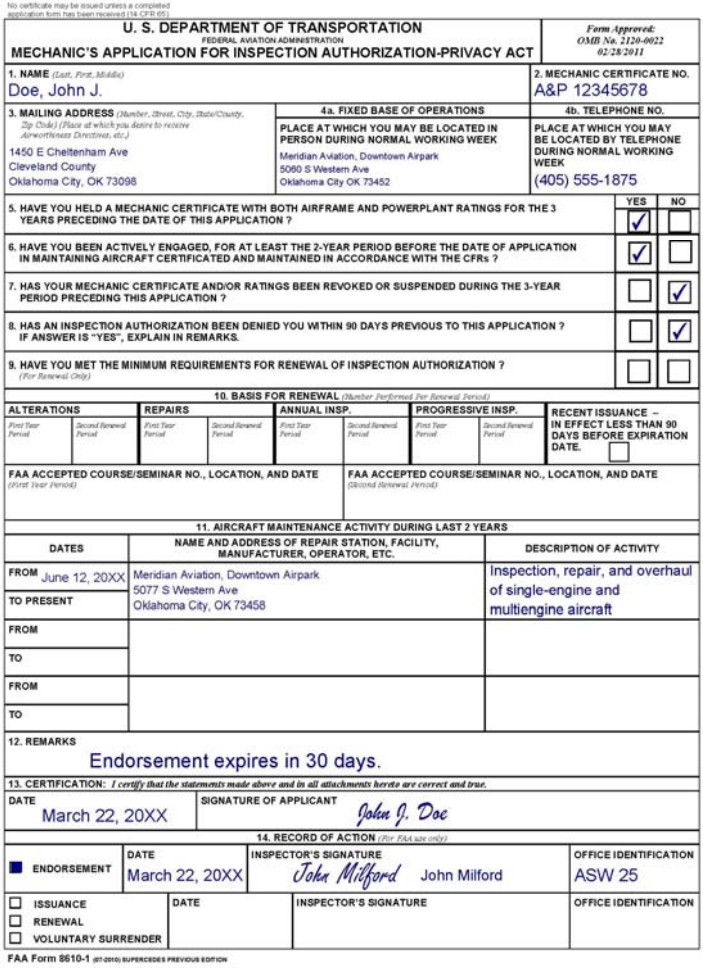
13. Remind the owners or operators that they are responsible for operational requirements, such as:

    a. Very high frequency (VHF) omnidirectional range (VOR) equipment checked in accordance with 14 CFR part 91, § 91.171.

    b. Altimeter and altitude reporting equipment test and inspections in accordance with 14 CFR part 91, § 91.411.

    c. Air traffic control (ATC) transponder inspection in accordance with 14 CFR part 91, § 91.413. These tests and inspections are not part of the annual inspection.

Appendix 1
SAMPLE FORMS AND RECORDS



No certificate may be issued unless a completed application form has been received (14 CFR 65).

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
MECHANIC'S APPLICATION FOR INSPECTION AUTHORIZATION-PRIVACY ACT

Form Approved: OMB No. 2120-0022 02/28/2011

1. NAME (Last, First, Middle)	2. MECHANIC CERTIFICATE NO.
Doe, John J.	A&P 12345678

3. MAILING ADDRESS (Number, Street, City, State/County, Zip Code) (Place at which you desire to receive Airworthiness Directives, etc.)	4a. FIXED BASE OF OPERATIONS	4b. TELEPHONE NO.
1450 E Cheltenham Ave Cleveland County Oklahoma City, OK 73098	PLACE AT WHICH YOU MAY BE LOCATED IN PERSON DURING NORMAL WORKING WEEK Meridian Aviation, Downtown Airpark 5060 S Western Ave Oklahoma City OK 73452	PLACE AT WHICH YOU MAY BE LOCATED BY TELEPHONE DURING NORMAL WORKING WEEK (405) 555-1875

	YES	NO
5. HAVE YOU HELD A MECHANIC CERTIFICATE WITH BOTH AIRFRAME AND POWERPLANT RATINGS FOR THE 3 YEARS PRECEDING THE DATE OF THIS APPLICATION ?	✓	
6. HAVE YOU BEEN ACTIVELY ENGAGED, FOR AT LEAST THE 2-YEAR PERIOD BEFORE THE DATE OF APPLICATION IN MAINTAINING AIRCRAFT CERTIFICATED AND MAINTAINED IN ACCORDANCE WITH THE CFRs ?	✓	
7. HAS YOUR MECHANIC CERTIFICATE AND/OR RATINGS BEEN REVOKED OR SUSPENDED DURING THE 3-YEAR PERIOD PRECEDING THIS APPLICATION ?		✓
8. HAS AN INSPECTION AUTHORIZATION BEEN DENIED YOU WITHIN 90 DAYS PREVIOUS TO THIS APPLICATION ? IF ANSWER IS "YES", EXPLAIN IN REMARKS.		✓
9. HAVE YOU MET THE MINIMUM REQUIREMENTS FOR RENEWAL OF INSPECTION AUTHORIZATION ? (For Renewal Only)		

10. BASIS FOR RENEWAL (Number Performed Per Renewal Period)

ALTERATIONS		REPAIRS		ANNUAL INSP.		PROGRESSIVE INSP.		RECENT ISSUANCE – IN EFFECT LESS THAN 90 DAYS BEFORE EXPIRATION DATE.
First Year Period	Second Renewal Period	First Year Period	Second Renewal Period	First Year Period	Second Renewal Period	First Year Period	Second Renewal Period	
								☐

FAA ACCEPTED COURSE/SEMINAR NO., LOCATION, AND DATE (First Year Period)	FAA ACCEPTED COURSE/SEMINAR NO., LOCATION, AND DATE (Second Renewal Period)

11. AIRCRAFT MAINTENANCE ACTIVITY DURING LAST 2 YEARS

DATES	NAME AND ADDRESS OF REPAIR STATION, FACILITY, MANUFACTURER, OPERATOR, ETC.	DESCRIPTION OF ACTIVITY
FROM June 12, 20XX TO PRESENT	Meridian Aviation, Downtown Airpark 5077 S Western Ave Oklahoma City, OK 73458	Inspection, repair, and overhaul of single-engine and multiengine aircraft
FROM TO		
FROM TO		

12. REMARKS
Endorsement expires in 30 days.

13. CERTIFICATION: *I certify that the statements made above and in all attachments hereto are correct and true.*

DATE	SIGNATURE OF APPLICANT
March 22, 20XX	John J. Doe

14. RECORD OF ACTION (For FAA use only)

	DATE	INSPECTOR'S SIGNATURE	OFFICE IDENTIFICATION
■ ENDORSEMENT	March 22, 20XX	John Milford John Milford	ASW 25
☐ ISSUANCE ☐ RENEWAL ☐ VOLUNTARY SURRENDER	DATE	INSPECTOR'S SIGNATURE	OFFICE IDENTIFICATION

FAA Form 8610-1 (07-2010) SUPERCEDES PREVIOUS EDITION

Figure 1. FAA Form 8610-1, Mechanic's Application for Inspection Authorization.

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

INSPECTION AUTHORIZATION

This certifies that Robert D. Burge

holder of Mechanic Certificate No. 222442345 has been authorized to exercise the privileges of Federal Aviation Regulation 65.95.

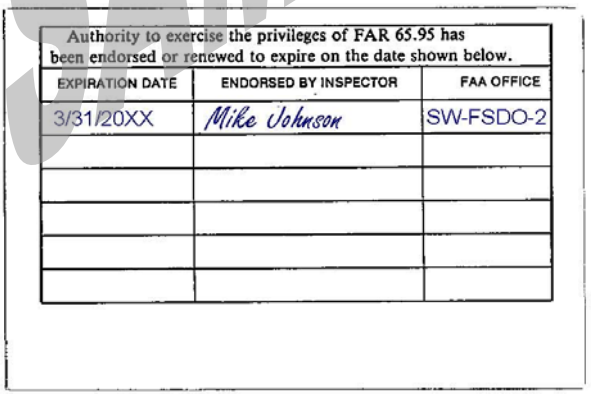
This authority expires March 31, 20XX unless sooner revoked by the Administrator of the Federal Aviation Administration or extended by endorsement on the reverse of this card.

DATE ISSUED	SIGNATURE, FLT. STDS. INSPECTOR
3/16/20XX	Mike Johnson Mike Johnson

SIGNATURE OF AUTHORIZED MECHANIC
Robert D. Burge

FAA FORM 8310-5 (8-80) SUPERSEDES PREVIOUS EDITION

front

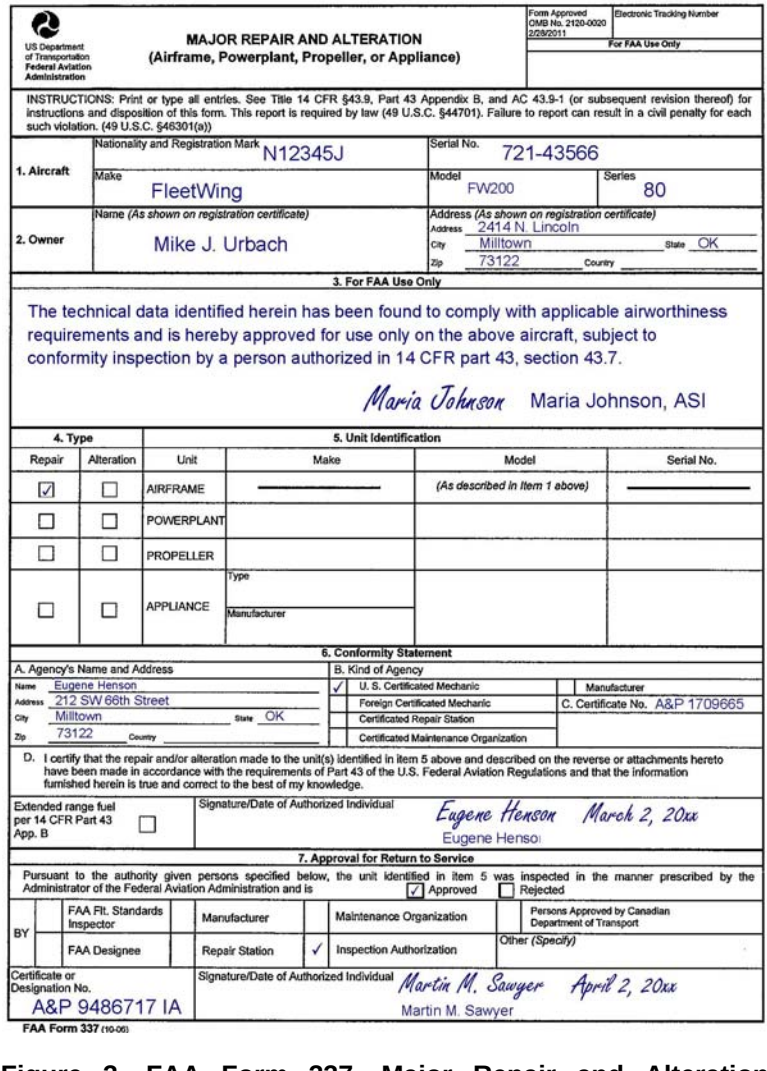


Authority to exercise the privileges of FAR 65.95 has been endorsed or renewed to expire on the date shown below.

EXPIRATION DATE	ENDORSED BY INSPECTOR	FAA OFFICE
3/31/20XX	Mike Johnson	SW-FSDO-2

back

Figure 2. FAA Form 8310-5, Inspection Authorization.



US Department of Transportation Federal Aviation Administration

MAJOR REPAIR AND ALTERATION
(Airframe, Powerplant, Propeller, or Appliance)

Form Approved OMB No. 2120-0020 2/28/2011 | Electronic Tracking Number | For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft
- Nationality and Registration Mark: N12345J
- Serial No.: 721-43566
- Make: FleetWing
- Model: FW200
- Series: 80

2. Owner
- Name (*As shown on registration certificate*): Mike J. Urbach
- Address (*As shown on registration certificate*): 2414 N. Lincoln
- City: Milltown
- State: OK
- Zip: 73122
- Country:

3. For FAA Use Only

The technical data identified herein has been found to comply with applicable airworthiness requirements and is hereby approved for use only on the above aircraft, subject to conformity inspection by a person authorized in 14 CFR part 43, section 43.7.

Maria Johnson Maria Johnson, ASI

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
☑	☐	AIRFRAME	—	(As described in Item 1 above)	—
☐	☐	POWERPLANT			
☐	☐	PROPELLER			
☐	☐	APPLIANCE	Type / Manufacturer		

6. Conformity Statement

A. Agency's Name and Address
- Name: Eugene Henson
- Address: 212 SW 66th Street
- City: Milltown
- State: OK
- Zip: 73122
- Country:

B. Kind of Agency
- ☑ U. S. Certificated Mechanic
- ☐ Foreign Certificated Mechanic
- ☐ Certificated Repair Station
- ☐ Certificated Maintenance Organization
- ☐ Manufacturer

C. Certificate No. A&P 1709665

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Extended range fuel per 14 CFR Part 43 App. B ☐

Signature/Date of Authorized Individual: Eugene Henson March 2, 20xx
Eugene Henson

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is ☑ Approved ☐ Rejected

BY
- ☐ FAA Flt. Standards Inspector
- ☐ FAA Designee
- ☐ Manufacturer
- ☐ Repair Station
- ☐ Maintenance Organization
- ☑ Inspection Authorization
- ☐ Persons Approved by Canadian Department of Transport
- Other (*Specify*)

Certificate or Designation No.: A&P 9486717 IA

Signature/Date of Authorized Individual: Martin M. Sawyer April 2, 20xx
Martin M. Sawyer

FAA Form 337 (10-06)

Figure 3. FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance) (front view). Note the FAA inspector's data approval for a major repair (block 3).

NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

8. Description of Work Accomplished
(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

N12345J	03/02/20XX
Nationality and Registration Mark	Date

Aircraft Total Time 6,210 hours

1. Removed horizontal stabilizer from aircraft and opened top and bottom skin at rear spar. Removed cracked rear spar and replaced with new spar (part number FW10204-56) in accordance with FleetWing structural repair manual No. 410, chapter 2, and figure 9-12. Original rivet pattern and type (MS20470AD3-4) were maintained.

   DATE: 02/25/20XX, inspected repair work to interior of horizontal stabilizer prior to closure of top skin. Found repair to be in accordance with data indicated and ready for final closure. An inspection of the complete interior of the stabilizer for hidden damage and condition at this time revealed no damage and good structural condition.

Martin M. Sawyer

Martin M. Sawyer, A&P 9486717 IA

2. Primed interior of stabilizer and closed upper skin. Installed on aircraft, rigged elevator and operationally checked in accordance with manufacturer's maintenance manual (FW4490).

3. No change in weight and balance.

END

☐ Additional Sheets Are Attached

FAA Form 337 (10-06)

Figure 3 (cont'd). FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance) (back view).

March 22, 20XX

Total Aircraft Time 1,502.0 Hours

Tach Time 972.4 Hours

I certify that this aircraft has been inspected in accordance with an annual inspection as per Air Tractor AT502 owner's manual and was determined to be in an airworthy condition.

Joseph P. Kline
A&P 123467899 IA

NOTE: This is an example of a record entry for an **annual inspection** determining the aircraft to be in airworthy condition. The date, aircraft total time, and tachometer (tach) or recorder reading are included. The tach or recorder readings should not be confused with the total time and should only be shown in **addition** to the total time entry. The mechanic's certificate number is suffixed by the letters "IA" indicating that the mechanic is the holder of an inspection authorization. Maintenance done in conjunction with the inspection should be entered as a separate entry.

Figure 4. Example of an airworthy annual inspection maintenance record entry.

Page 1 of 1 Date 12/02/2000
Registration Number N937JM Aircraft Make/Model FleetWing FW-25-200 Serial Number 2842015
Aircraft Certification Date 07/12/2000
Engine Model Lycoming 0-320-D3G Serial Number L-7656-38A

AD Number	Revision Date	Applicable S.B. Number and Subject	Date and Hours at Compliance	Method of Compliance	One Time	Recurring	Next Compliance at Hours/Date	Authorized Signature, Type, and Number
2008-26-13		Inspect Oil Cooler Hose	5/27/1996 3,102 hours	Replaced hose assembly with TSO 53a, type D hose. 100-hour recurrent inspection or longer required.			NA	Bill Jenkins A&P 23453322 IA
2005-20-R1	Oct. 10, 2005	Inspect fuel cells IAW SB 1134	12/14/2005 2,823 hours	Inspected IAW FleetWing service bulletin 1134 sections A and B.	X		No further action required	Joe Kline A&P 123467899 IA
2001-02-03		Fuel quantity indicators.	02/15/2001 502 hours	Replaced right and left fuel quantity indicators per AD paragraph B2.	X		No further action required	Jimmy Miller A&P 23244411
2000-26-01		Inspect flap jackscrew IAW SB 1002	02/15/2001 502 hours	Inspected IAW FleetWing SB 1002.		X	Inspection required each 3,000 hours	Jimmy Miller A&P 23244411

Figure 5. Airworthiness Directive Compliance Record (suggested format).

OMB No. 2120-0003
08/31/2008

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

MALFUNCTION OR DEFECT REPORT

OPER. Control No.:
ATA Code: 8120
1. A/C Reg. No.: N- 6696J

Enter pertinent data	MANUFACTURER	MODEL/SERIES	SERIAL NUMBER
2. AIRCRAFT	Cessna	421B	421B79485
3. POWERPLANT	Continental	GTSIO520L	C216977
4. PROPELLER	McCauley	3AF34C92	42279

5. SPECIFIC PART (of component) CAUSING TROUBLE

Part Name	MFG. Model or Part No.	Serial No.	Part/Defect Location
Wastegate shaft	Garrett PN 4166952	NA	Left engine wastegate

6. APPLIANCE/COMPONENT (Assembly that includes part)

Comp/Appl Name	Manufacturer	Model or Part No.	Serial Number
Wastegate	Garrett	480164-10	1121

Part TT	Part TSO	Part Condition	7. Date Sub.
1,222 hrs	NA	warped	1/22/20XX

8. Comments (Describe the malfunction or defect and the circumstances under which it occurred. State probable cause and recommendations to prevent recurrence.)

Pilot reported loss in aircraft's critical altitude. Inspection revealed the left engine's wastegate shaft warped and binding. The shaft's freedom of travel was also found to be partially restricted due to carbon buildup in the bearings. This is possibly a contributing factor in the warping. Recommend lubricating wastegate valve with approved lubricant such as Mouse Milk or WD-40 when shaft is cool.

Optional Information:

Check a box below, if this report is related to an aircraft

☐ Accident; Date _____ ☐ Incident; Date _____

DIRECT OPER. | OTHER | COMMUTER | FAA | MFG. | AIR TAXI | MECH. X | OWER | REPAIR STA.

OPERATOR DESIGNATOR

SUBMITTED BY: Mike Monroe

TELEPHONE NUMBER: (429) 555 — 6219

FAA FORM 8010-4 (10-92) SUPERSEDES PREVIOUS EDITIONS

NOTE: This is a typical FAA Form 8010-4 (revised 10-92). The holder of an IA is urged to use this form for all malfunctions or defects that cannot be attributed to poor maintenance procedures. Provide the information requested on the form. Note that item 8 requests information concerning how the defect can be corrected. The form may be obtained at the local Flight Standards District Office or online at the FAA's web site (FAA.gov). At the web site the form is found under the Aircraft tab and under the Advisories & Guidance—Service Difficulty Reports (SDR) heading. The form may be e-mailed, faxed, or mailed to the addresses or telephone fax number noted under Service Difficulty Reporting System (SDRS) Submissions on the web site.

Figure 6. FAA Form 8010-4, Malfunction or Defect Report.

Operating Limitations:	**Zeph-Air 63-1A N40023**
RPM	Do not exceed 2,300
Oil temperature	212 ºF max.
Airspeed limits—do not exceed:	
Level flight or climb	95 knots
Glide or dive	130 knots
Gross weight	1,200 lb
Empty CG	14.4 inches aft of datum
Useful load	453 lb
Kinds of operation	VFR—day

Figure 7. Operating limitations placard.

March 22, 20XX

Total Aircraft Time 3,202.5 hours

Hobbs Meter Reading 975.5 hours

I certify that this aircraft has been inspected in accordance with an annual inspection, and a list of discrepancies and unairworthy items dated March 22, 20XX, have been provided for the aircraft owner.

Joseph P. Kline
A&P 1123456789 IA

Figure 8. Example of an unairworthy annual inspection maintenance record entry.

Academy Aviation
Hangar 4
North Philadelphia Airport
Philadelphia, PA 19114

Mr. Morris McCall
1450 W. Cheltenham Ave.
Philadelphia, PA 19125

Mr. McCall:

This is to certify that on March 22, 20XX, I completed an annual inspection on your aircraft, Condor 191B, S/N 3945, N1234, and found the following unairworthy items:

Compression in No. 3 cylinder read 30 over 80, which is below the manufacturer's recommended limits.

The muffler has a broken baffle plate which is blocking the engine exhaust outlet.

There is a 6-inch crack on bottom of the left wing just aft of the main landing gear attach point.

Jospeh P. Kline
A&P 123456789 IA

Figure 9. Discrepancy list to be provided to an aircraft owner when reporting an aircraft with unairworthy items after completing an annual inspection.

Weight and Balance Revision **Date: 05/06/20XX**

N44933 Cessna 182L

Serial Number 18234329

Supersedes Computations found on FAA Form 337, dated 10/22/20XX.

Removed the following equipment:	Weight	Arm	Moment
1. Turn coordinator P/N C661003-0211	2.50 lb	15.0	37.50
2. Directional gyro P/N 0760099	+3.12	13.5	+42.12
Total	5.62		79.62
	1,709.60	35.26	60,282.20
	–5.62		–79.62
Aircraft after removal	1,703.98	35.20	60,202.58

Installed the following equipment:	Weight	Arm	Moment
1. Vector2 Autopilot system including turn coordinator and directional gyro.	13.0 lb	32.7	425.13
	1,703.98		60,202.20
	+13.00		+425.13
***REVISED LICENSED EMPTY WEIGHT**	**1,716.98**		**60,627.71**

***NEW USEFUL LOAD: 1,083.02**

Forward Limit Check (Limit +38.4)				Rearward Limit Check (Limit +47.4)			
	Wt	**Arm**	**Moment**		**Wt**	**Arm**	**Moment**
A/C Empty	1,716.98	35.31	60,627.21	**A/C Empty**	1,716.98	35.31	60,627.21
Fwd Seats	170.00	36.00	6,120.00	**Fwd Seats**	170.00	36.00	6,120.00
Aft Seats				**Aft Seats**	340.00	71.00	24,140.00
Fuel (min.)	115.00	48.00	5,520.00	**Fuel (max.)**	360.00	48.00	17,280.00
Oil	22.00	–15.00	–330.00	**Oil**	22.00	–15.00	–330.00
Baggage				**Baggage**	120.00	97.00	11,640.00
	2,023.98	35.50	71,937.71		2,728.98	43.78	119,477.71

Joseph P Kline

Joseph P Kline
A&P 123456789 IA

NOTE: Computations are shown. Form is signed, dated, and identifies the computations or figures it supersedes. It is recommended that the manufacturer's weight and balance data forms be used for specific aircraft.

Figure 10. Weight and balance revision for a typical light, single-engine aircraft.

July 12, 20XX

Aircraft Total Time: 1,566 hours

Complied with Airworthiness Directive (AD) 20XX-12-10R1, effective date June 30, 20XX. Modified the airplane by compliance with paragraph 2(b) of AD. Installed FleetWing Service Kit SK 1910 as required by AD. No recurring action required.

Bill Quinlan
A&P 143298671

Figure 11. One-time Airworthiness Directive compliance entry.

May 23, 20XX

Engine Total Time: 720 hours

Complied with Airworthiness Directive (AD) 20XX-10-12, Alcon Turbo Chargers by inspection as required by paragraphs (b) through (g) of AD. Turbine housing found satisfactory, next inspection due at 920 hours.

Joe Knight
A&P 279387792

Figure 12. Recurrent Airworthiness Directive compliance entry.

Appendix 2
PUBLICATIONS AND TECHNICAL DATA

The following publications and technical data provide information for aircraft inspection.

1. TITLE 14 OF THE CODE OF FEDERAL REGULATIONS

The Code of Federal Regulations is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government. The Code is divided into 50 titles, which represent broad areas subject to Federal regulation. Each title is divided into chapters, which usually bear the name of the issuing agency. Title 14—Aeronautics and Space (14 CFR) is composed of four chapters. Chapter 1 of this title is the Federal Aviation Administration (FAA), Department of Transportation (DOT). This chapter contains parts 1–199. The following 14 CFR parts are of particular interest to the holder of an Inspection Authorization.

14 CFR PART NUMBER	TITLE
1	Definitions and Abbreviations
11	General Rulemaking Procedures
21	Certification Procedures for Products and Parts
23	Airworthiness Standards: Normal, Utility, Acrobatic, and Commuter Category Airplanes
25	Airworthiness Standards: Transport Category Airplanes
27	Airworthiness Standards: Normal Category Rotorcraft
29	Airworthiness Standards: Transport Category Rotorcraft
31	Airworthiness Standards: Manned Free Balloons
33	Airworthiness Standards: Aircraft Engines
35	Airworthiness Standards: Propellers
39	Airworthiness Directives

43	Maintenance, Preventive Maintenance, Rebuilding, and Alteration
45	Identification and Registration Marking
47	Aircraft Registration
65	Certification: Airmen Other Than Flight Crewmembers
91	General Operating and Flight Rules
119	Certification: Air Carriers and Commercial Operators
125	Certification and Operations: Airplanes Having a Seating Capacity of 20 or More Passengers or a Maximum Payload Capacity of 6,000 Pounds or More
135	Operating Requirements: Commuter and On-Demand Operations and Rules Governing Persons on Board Such Aircraft
183	Representatives of the Administrator

The Code of Federal Regulations may be obtained from the Dynamic Regulatory System (DRS) at the FAA website, www.faa.gov, for the official FAA copy.

2. TYPE CERTIFICATE DATA SHEETS AND SPECIFICATIONS

Type Certificate Data Sheets and Specifications (TCDS) set forth essential factors and other conditions, which are necessary for U.S. airworthiness certification. Aircraft, engines, and propellers which conform to a U.S. type certificate (TC) are eligible for U.S. airworthiness certification when found to be in a condition for safe operation and ownership requisites are fulfilled.

There are two kinds of certification documents contained in the TCDS file: (1) Type Certificate Data Sheets and (2) Specifications.

Type Certificate Data Sheets were originated and first published in January 1958. 14 CFR part 21, section 21.41, indicates they are part of the type certificate. As such, a type certificate data sheet is evidence the product has been type certificated.

Generally, type certificate data sheets are compiled from details supplied by the type certificate holder; however, the FAA may

request and incorporate additional details when conditions warrant.

Specifications were originated during implementation of the Air Commerce Act of 1926. Specifications are FAA recordkeeping document issued for both type certificated and non-type certificated products which have been found eligible for U.S. airworthiness certification. Although they are no longer issued, specifications remain in effect and will be further amended. Specifications covering type-certificated products may be converted to type certificate data sheets at the option of the type certificate holder. However, to do so requires the type certificate holder to provide an equipment list. A specification is not part of a type certificate.

The official FAA copy is available on the Internet at the FAA website under Dynamic Regulatory System (DRS) at https://drs.faa.gov/browse.

3. SUMMARY OF AIRWORTHINESS DIRECTIVES FOR SMALL AIRCRAFT AND ROTORCRAFT

An airworthiness directive (AD) contains information regarding an unsafe condition that exists in an aircraft, aircraft engine, propeller, or appliance when that condition is likely to exist or develop in other products of the same type design. No person may operate a product to which an AD applies, except in accordance with the requirements of the AD.

All ADs are summarized and issued by the FAA. New and revised ADs are published biweekly and mailed to registered owners of affected equipment and to subscription holders. ADs are issued in two weight categories:

1. Small aircraft with a maximum certificated takeoff weight aircraft of 12,500 pounds or less, and all rotorcraft regardless of weight.
2. Large aircraft over 12,500 pounds maximum certificated takeoff weight.

The official FAA copy is available on the Internet at the FAA website under Dynamic Regulatory System (DRS) at https://drs.faa.gov/browse.

The ADs are totally searchable and easily located. The individual airworthiness directives and the AD biweeklies on the website are considered approved FAA copies and may be used in lieu of purchasing paper copies. This is a free service. Questions concerning the DRS may be directed to AIR-140, Delegation and Airworthiness Programs Branch.

4. ADVISORY CIRCULARS

The Federal Aviation Administration issues Advisory Circulars (ACs) to inform the aviation public in a systematic way of nonregulatory material. Unless incorporated into a regulation by reference, the contents of an Advisory Circular are not binding on the public. Advisory Circulars are issued in a numbered-subject system corresponding to the numerical part of the subject regulation (FAA AC 39-7 would deal with a subject related to 14 CFR part 39, Airworthiness Directives).

An Advisory Circular is issued to provide guidance and information in a designated subject area or to show a method acceptable to the Administrator for complying with a related Federal Aviation Regulation. Electronic versions are available on the Internet at the FAA website.

Change 1 (July 19, 2024)

The following Advisory Circulars are of interest to mechanics:

AC 39-7, Airworthiness Directives

AC 43-4, Corrosion Control for Aircraft

AC 43-11, Reciprocating Engine Overhaul Terminology and Standards

AC 43.13-1, Acceptable Methods, Techniques and Practices—Aircraft Inspection and Repair

AC 43.13-2, Acceptable Methods, Techniques, and Practices—Aircraft Alterations

AC 43-9, Maintenance Records

AC 43.9-1, Instructions for Completion of FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance)

AC 43-18, Fabrication of Aircraft Parts by Maintenance Personnel

AC 43-210A, Standardized Procedures for Obtaining Approval of Data Used in the Performance of Major Repairs and Major Alterations - Change 1

AC 91-67, Minimum Equipment Requirements for General Aviation Operations Under FAR Part 91

Additional information of particular interest to the holder of an inspection authorization is found in FAA-H-8083-1, Aircraft Weight and Balance Handbook.

5. FAA ORDERS AND JOB AIDS

FAA Order 8300.16A (as revised) Major Repair and Alteration and Data Approval.

Change 1 (July 19, 2024)

Major Repair and Alteration and Data Approval Online Job Aid.

6. ADDITIONAL SOURCES OF INSPECTION DATA

Several commercial publishers offer subscription services that include the Airworthiness Directives, Advisory Circulars, and Type Certificate Data Sheets, along with other inspection data. They may be found in aviation trade paper and magazines.