

INSPECTION AUTHORIZATION KNOWLEDGE TEST GUIDE

INSPECTION AUTHORIZATION KNOWLEDGE TEST GUIDE

2004

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Flight Standards Service

PREFACE

FAA-G-8082-11A, Inspection Authorization Knowledge Test Guide, provides information for preparing to take the Inspection Authorization Knowledge Test. Appendix 1 provides sample forms. Appendix 2 provides publication and technical data. Appendix 3 provides lists of reference materials and subject matter knowledge codes.

Changes to the subject matter knowledge codes will be published in AC 60-25, Reference Materials and Subject Matter Knowledge Codes for Airman Knowledge Testing.

The current Flight Standards Service subject matter knowledge codes for all airman certificates and ratings can be obtained from the Regulatory Support Division, AFS-600, home page on the Internet.

The Regulatory Support Division's Internet address is: <http://afs600.faa.gov>

FAA-G-8082-11A supersedes FAA-G-8082-11, dated 1999.

Comments regarding this guide should be sent in e-mail form to AFS630Comments@faa.gov.

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INSPECTION AUTHORIZATION KNOWLEDGE TEST GUIDE

INTRODUCTION

The Federal Aviation Administration (FAA) initiated the issuance of the Inspection Authorization (IA) more than 35 years ago. This system of allowing qualified mechanics the privilege of performing certain inspections has served well in the maintenance of the U.S. Civil Fleet. The attainment of an IA and performance of the duties of that certificate greatly enhance the privileges and responsibilities of the aircraft mechanic. The IA permits the airframe and powerplant (A&P) mechanic to perform a greater variety of maintenance and alterations than any other single maintenance entity.

The determination of airworthiness during an inspection is a serious responsibility. For many general aviation aircraft, the annual inspection could be the only in-depth inspection it receives throughout the year. In view of the wide ranging authority conveyed with the authorization, the test examines a broader field of knowledge than required for the A&P certificate and reflects the emphasis that is placed on the holder of the certificate in perpetuating air safety.

This guide is not offered as an easy way to obtain the necessary information for passing the inspection authorization knowledge test. Rather, the intent of this guide is to define and narrow the field of study to the required knowledge areas included in the test.

KNOWLEDGE TEST ELIGIBILITY REQUIREMENTS

Eligibility is established at the local FAA Flight Standards District Office (FSDO) prior to taking the Inspection Authorization Knowledge Test.

You are eligible for the Inspection Authorization Knowledge Test if you meet the requirements of Title 14 of the Code of Federal Regulations (14 CFR) part 65, section 65.91(c).

“Sec. 65.91 Inspection Authorization....”

- (1) Hold a currently effective mechanic certificate with both an airframe rating and a powerplant rating, each of which is currently effective and has been in effect for a total of at least 3 years;
- (2) Have been actively engaged, for at least the 2-year period before the date he applies, in maintaining aircraft certificated and maintained in accordance with this chapter;
- (3) Have a fixed base of operations at which he may be located in person or by telephone during a normal working week, but it need not be the place where he will exercise his inspection authority;
- (4) Have available to him the equipment, facilities, and inspection data necessary to properly inspect airframes, powerplants, propellers, or any related part or appliance; and
- (5) Pass a written test on his ability to inspect according to safety standards for returning aircraft to service after major repairs and major alterations and annual and progressive inspection performed under Part 43 of this chapter....”

KNOWLEDGE AREAS ON THE TEST

The Inspection Authorization Knowledge Test is comprehensive as it must test your knowledge in many subject areas. When applying for an IA you should review 14 CFR part 65, section 65.91(c)(5) for the knowledge areas on the test.

DESCRIPTION OF THE TEST

All test questions are the objective, multiple-choice type. The test contains 50 questions, numbered 1 through 50. Each question can be answered by the selection of a single response. Each test question is independent of other questions; therefore, a correct response to one does not depend upon, or influence the correct response to another.

The maximum time allowed for the test is 3 hours. The allotted time is based on previous experience and educational statistics. This amount of time is considered more than adequate if you have prepared properly.

The Inspection Authorization Knowledge Test has been considered by some as an open book test because of the use of reference material during the test. To view the test in this manner is a misconception. There has always been a core knowledge requirement for which no reference material was provided. Therefore, it should be noted that, during the tests, there are subject areas for which reference material is not included in the test supplement. These areas will draw on skills acquired as an airframe and powerplant mechanic and which are necessary to properly inspect work performed by others.

The IA test supplement provides appropriate segments of Title 14 of the Code of Federal Regulations, all necessary charts, graphs, and technical data necessary to solve problems contained in the test. Prior to taking the test, you should take a few minutes to look through the supplement to determine what is included.

You should carefully read the information and instructions given with the tests, as well as the statements in each test item.

When taking a test, you should keep the following points in mind:

1. Answer each question in accordance with the latest regulations and procedures.
2. Read each question carefully before looking at the possible answers. You should clearly understand the problem before attempting to solve it.
3. After formulating an answer, determine which of the alternatives most nearly corresponds with that answer. The answer chosen should completely resolve the problem.
4. From the answers given, it may appear that there is more than one possible answer; however, there is only one answer that is correct and complete. The other answers are either incomplete or are derived from popular misconceptions.
5. If a certain question is difficult for you, it is best to mark it for review and proceed to the other questions. After you answer the less difficult questions, return to those which you marked for review and answer them. The review marking procedure will be explained to you prior to starting the test. When you have finished taking the test, make sure an answer has been recorded for each question. However, the computer will alert you to all unanswered questions. This procedure will enable you to use the available time to the maximum advantage.
6. When solving a calculation problem, select the answer nearest your solution. The problem has been checked with various types of calculators; therefore, if you have solved it correctly, your answer will be closer to the correct answer than any of the other choices.

PROCESS FOR TAKING A KNOWLEDGE TEST

The first step in taking the Inspection Authorization Knowledge Test is to contact your local FSDO to make an appointment to interview with an Aviation Safety Inspector (ASI) (airworthiness) to determine eligibility before registering for the knowledge test. At the interview, the inspector will ask you to complete an FAA Form 8610-1, Mechanic's Application for Inspection Authorization (refer to appendix 1, figure 1) and provide positive proof of identification. An acceptable identification document includes your current photograph, signature, and actual residential address, if different from the mailing address. This information may be presented in more than one form of identification.

Acceptable forms of identification include, but are not limited to, drivers' licenses, government identification cards, passports, alien residency cards, and military identification cards. Other forms of identification that meet the requirements of this paragraph are acceptable. Some applicants may not possess the identification documentation described. In any case, you should always check with your local FSDO if you are unsure of what kind of authorization to bring to the interview.

During the interview, you will be asked to demonstrate to the inspector's satisfaction that you meet the requirements for the authorization as specified in 14 CFR part 65, section 65.91(c)(1)through(4).

The inspector will interview to the extent necessary to determine that you clearly understand the inspection authorization privileges, limitations, responsibilities, and the functions in the aviation community. Once your qualifications have been demonstrated, the inspector will sign the 8610-1 form you completed. You must present this form at the test site in order to take the test.

The next step is the actual registration process. This may be done in either of two ways, you may contact the computer testing designees (CTDs) through their national 1-800 number. LaserGrade's phone number is 1-800-211-2753. CATS phone number is 1-800-947-4228. A complete listing of test centers may be found on the Internet at the web address: afs600.faa.gov, and under the heading "Airman Testing Standards (AFS-630)". Once a site is selected you should ensure that the site provides this test, most do, but not all. You will then need to schedule a test date, and make financial arrangements for test payment. You may register for tests several weeks in advance, and you may cancel your appointment according to the CTD's cancellation policy. If you do not follow the CTD's cancellation policies, you could be subject to a cancellation fee.

You will not need to take any of your IA reference material to the test center; however, you will need proper identification.

Before you take the actual test, you will have the option to take a sample test. The actual test is time limited; however, you should have sufficient time to complete and review your test.

Upon completion of the test, you will receive your Airman Test Report, with the testing center's embossed seal, which reflects your score.

The Airman Test Report lists the subject matter knowledge codes for questions answered incorrectly. The total number of subject matter knowledge codes shown on the Airman Test Report is not necessarily an indication of the total number of questions answered incorrectly. These codes refer to a list of subject matter knowledge areas, which can be found in appendix 3 of this guide. Study the subject matter knowledge code references to increase your knowledge of the subject.

The minimum passing score is 70; however, if the test is failed, there will be a 90-day waiting period before retesting is allowed. An attempt to retest prior to the waiting period is contrary to 14 CFR part 65, and could result in revocation of any airman certificates that you hold.

Do not lose the Airman Test Report as you will need to present it at the FSDO if you obtain a passing score to receive your IA, or if the test is failed, it must be presented at the test proctor when you are ready to retest after the 90-day waiting period.

Should you require a duplicate Airman Test Report due to loss or destruction of the original, send a signed request accompanied by a check or money order for \$1 payable to the FAA. Your request should be sent to the Federal Aviation Administration, Airmen Certification Branch, AFS-760, P.O. 25082, Oklahoma City, OK 73125.

After passing the test, present your Airman Test Report to an ASI (A/W) at the FSDO where you interviewed. It is best to return to the original interviewer if possible; however, any available ASI can complete the authorization process. At that time, the ASI will again review your application and discuss any questions you have. When the ASI is satisfied that all requirements are met, the certificate will be issued.

USE OF TEST AIDS AND MATERIALS

Airman knowledge tests require applicants to analyze the relationship between variables needed to solve aviation problems, in addition to testing for accuracy of a mathematical calculation. The intent is that all applicants are tested on concepts rather than rote calculation ability. It is permissible to use certain calculating devices when taking airman knowledge tests, provided they are used within the following guidelines. The term “calculating devices” is interchangeable with such items as calculators, computers, or any similar devices designed for aviation-related activities.

When taking a knowledge test, you may use aids, reference materials, and test materials within the guidelines listed below, if actual test questions or answers are not revealed. All models of aviation-oriented calculators may be used, including small electronic calculators that perform only arithmetic functions (add, subtract, multiply, and divide). Simple programmable memories, which allow addition to, subtraction from, or retrieval of one number from the memory, are permissible. Also, simple functions such as square root and percent keys are permissible. The following guidelines apply.

1. You may use any reference materials provided with the test. In addition, you may use scales, straightedges, protractors, plotters, navigation computers and electronic or mechanical calculators that are directly related to the test.
2. Manufacturer’s permanently inscribed instructions on the front and back of such aids, e.g., formulas, conversions, regulations, and weight and balance formulas are permissible.
3. Testing centers may provide a calculator to you and/or deny you use of your personal calculator based on the following limitations.
 - a. Prior to, and upon completion of the test, while in the presence of the proctor, you must actuate the ON/OFF switch and perform any other function that ensures erasure of any data stored in memory circuits.
 - b. The use of electronic calculators incorporating permanent or continuous type memory circuits without erasure capability is prohibited. The testing center may refuse the use of your calculator when unable to determine the calculator’s erasure capability.
 - c. Printouts of data must be surrendered at the completion of the test if the calculator incorporates this design feature.
 - d. The use of magnetic cards, magnetic tapes, modules, computer chips, or any other device upon which pre-written programs or information related to the test can be stored and retrieved is prohibited.
 - e. You are not permitted to use any booklet or manual containing instructions related to use of test aids.
4. Dictionaries are not allowed in the testing area.
5. The testing center makes the final determination relating to test materials and personal possessions you may take into the testing area.
6. Guidelines for dyslexic applicant’s use of test aids and materials. A dyslexic applicant may request approval from the local Flight Standards District Office (FSDO) to take an airman knowledge test using one of the three options listed in preferential order:
 - a. Option One. Use current testing facilities and procedures whenever possible.
 - b. Option Two. Applicants may use Franklin Speaking Wordmaster© to facilitate the testing process. The Wordmaster© is a self-contained electronic thesaurus that audibly pronounces typed in words and presents them on a display screen. It has a built-in headphone jack for private listening. The headphone feature will be used during testing to avoid disturbing others.

c. Option Three. Applicants who do not choose to use the first or second option may request a test proctor to assist in reading specific words or terms from the test questions and supplement material. In the interest of preventing compromise of the testing process, the test proctor should be someone who is non-aviation oriented. The test proctor will provide reading assistance only, with no explanation of words or terms. The Airman Testing Standards Branch, AFS-630, will assist in the selection of a test site and test proctor.

CHEATING OR OTHER UNAUTHORIZED CONDUCT

Computer testing centers follow strict security procedures to avoid test compromise. These procedures are established by the FAA and are covered in FAA Order 8080.6, Conduct of Airman Knowledge Tests. The FAA has directed all testing centers to terminate a test at any time a test proctor suspects a cheating incident has occurred. An FAA investigation will then follow. If the investigation determines that cheating or other unauthorized conduct has occurred, any airman certificate that you hold may be revoked, and you may not be allowed to take a test for 1 year.

RETESTING PROCEDURES

If you fail the Inspection Authorization Knowledge Test, you may not apply for retesting until 90 days after the date that you failed the test. Any attempt to retest prior to the 90-day waiting period is contrary to 14 CFR part 65, and could result in revocation of any airman certificates that you hold.

After the 90-day waiting period simply present the failed Airman Test Report along with required ID at the test center to retest. There is no need to return to the FSDO until the test is passed.

BASIC FUNCTIONS OF AN IA

GENERAL

The basic functions of the holder of an Inspection Authorization (IA) are set forth in 14 CFR part 65, section 65.95. With the exception of aircraft maintained in accordance with a Continuous Airworthiness Maintenance Program, 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

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 Code of Federal Regulations (CFRs) 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) (14 CFR section 21.303).
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, section 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 (e.g. CAR 3, 14 CFR part 23).
5. Work is complete and compatible with other structures or systems.
6. The holder of an IA CANNOT approve the DATA for major repairs or major alterations. He/she may, however, inspect to see that alterations conform to data previously approved by the Administrator (14 CFR part 65, section 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. 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:
 - a. establish an acceptable basis for approval;
 - b. approve the data; or
 - c. 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, be completed. (Refer to appendix 1, figure 4, showing typical entries on the 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 by itself. 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 to be used for major repairs and major alterations may be one or more of the following.

1. Type Certificate Data Sheets
2. Aircraft Specifications
3. Supplemental Type Certificates (STCs)
4. Airworthiness Directives (ADs)
5. Manufacturer's FAA Approved Data (DOA)
6. Designated Engineering Representative (DER)
7. Approved Data With FAA Form 8110-3, Statement of Compliance (Note: This type of data usually requires additional approval.)
8. Designated Alteration Station (DAS) Approved Data
9. Appliance Manufacturer's Manuals (Excluding Installation Instructions)
10. FAA-approved chapters of the Structural Repair Manuals.

AC 43.13-1A, Acceptable Methods, Techniques, and Practices—Aircraft Inspection and Repair is acceptable to the Administrator for the inspection and repair of nonpressurized areas of civil aircraft, only when there are no manufacturer repair or maintenance instructions. This data generally pertains to minor repairs. The repairs identified in this AC may also be used as a basis for major repairs. The repair data may also be used as approved data, and the AC chapter, page, and paragraph listed in block 8 of FAA Form 337 when:

1. the user has determined that it is appropriate to the product being repaired;
2. it is directly applicable to the repair being made; and
3. it is not contrary to manufacturer's data.

FAA FIELD APPROVAL (FAA FORM 337) issued for duplication of identical aircraft may be used as approved data only when the identical alteration is performed on an aircraft of identical make, model, and series by the original modifier. FAA Form 337s approved prior to Oct. 1, 1955 may be used as approved data.

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 be compatible with all other installations.
3. All operating limitations affected by an alteration should be 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, 2002. 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, section 91.409(d). There are additional requirements for annual and progressive inspections listed in 14 CFR part 43, section 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, section 91.409 (refer to appendix 1, figure 5).

The following reminders should help in determining that the aircraft complies with all airworthiness requirements (Refer to 14 CFR part 43, section 43.15(a)).

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, section 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. Contact owner for pertinent information.
 - b. If approved data is available, conduct inspection and personally approve for return to service by completing FAA Form 337.
 - c. Contact 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.

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, section 43.15.

1. 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 can often be done conveniently during an annual inspection, and in fact should be done, but are not considered to be a part of the inspection itself.

2. 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.

3. AC 43-16, Aviation Maintenance Alerts, is also an important source of service experience. The articles for the alerts are taken from selected service difficulties reported to the FAA on FAA Form 8010-4, Malfunction or Defect Reports. Monthly copies of the alerts are provided on the Internet at <http://av-info.faa.gov>. Select from "Aircraft Information" heading, then select the subheading "General Aviation Airworthiness Alerts." Comments may be sent by letter, with name and address typed or legibly printed to the Federal Aviation Administration, Aviation Systems Data Branch, AFS-620, P.O. Box 25082, Oklahoma City, OK 73125.

4. 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.

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.

Deferring Inoperative Instruments or Equipment

1. When inspecting aircraft operating without an MEL, the rule "14 CFR part 91, section 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, section 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; and
- 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, section 43.13, to determine that all applicable airworthiness directives (ADs) for aircraft, powerplants, propellers, instruments, and appliances have been accomplished.

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 such as 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, section 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 at one time with a modification or inspection required at a later date. It is very important to identify, in the maintenance record entry, the portion of the AD complied with and the exact method of compliance.

4. 14 CFR section 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/she is expected to keep. (Refer to appendix 1, figure 6.)

5. 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

All malfunctions or defects that come to the attention of the holder of an IA should be reported on FAA Form 8010-4. (Refer to appendix 1, figure 7.) Copies of the self-addressed form are available at all Flight Standards District Offices (FSDOs), easy to fill out and require no postage. Prompt reporting will contribute much toward improving air safety by helping correct unsafe conditions.

Paperwork Review

The owner or operator is responsible for maintaining the equipment list, CG and weight distribution computations, and loading schedules, if necessary.

1. The holder of an IA, as required by 14 CFR part 43, section 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. Missing, incorrect, or improperly located placards are regarded as an unairworthy item, and the owner or operator should be informed that, under the requirements of 14 CFR part 91, section 91.9, the aircraft may not be operated until they are 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 manufacturers' trade names as they do not always coincide with the actual model designation (Cessna Skylane 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, section 91.203(a)(i)(2)(b), 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, section 91.9, must be carried in or be affixed to the aircraft. Range markings on the instruments, placards, and listings are required to be worded and located as specified in the type certificate data sheet. (Refer to appendix 1, figure 8.)

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, section 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, section 43.11. This will permit an owner to assume responsibility for having the discrepancies corrected prior to operating the aircraft.

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 parts 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, section 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 9 and 10.)

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 conducted.
3. Indicate the extent of the inspection and all work accomplished in the aircraft records.

AIRCRAFT RECORDS

MAINTENANCE RECORDS

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, sections 43.9 and 43.11. The owner or operator is required by 14 CFR part 91, section 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.

Significance of Maintenance Record Entries

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 of major repairs or major alterations is assumed by the holder of an IA whose signature and certificate number appears on the appropriate maintenance records.

COMPLETION OF FAA FORM 337, MAJOR REPAIR AND ALTERATION (AIRFRAME, POWERPLANT, PROPELLER, OR APPLIANCE)

FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance), serves two purposes. One is to provide owners and operators a record of major repairs and major alterations indicating details and approval. The other purpose is to provide the FAA with a copy for the aircraft records. An example of a typical completed FAA Form 337 is provided in appendix 1, figures 3 and 4.

1. The person who performed or supervised the major repair or major alteration prepares the original FAA Form 337 (two copies). The holder of an IA then further processes the forms when they are presented for approval.

2. Instructions for the completion of FAA Form 337 appear in AC 43.9-1E, Instructions for Completion of FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance).

3. Disposition of FAA Form 337.

a. The holder of an IA who has found a major alteration or a major repair to be in conformity with FAA-approved data should review the FAA Form 337 for completeness and accuracy, and complete item 7.

b. The person performing a major repair or major alteration shall in accordance with 14 CFR part 43:

(1) Give a signed copy of FAA Form 337 to the aircraft owner.

(2) Make the proper entry in the maintenance records.

(3) Forward the duplicate copy to the local FAA FSDO within 48 hours after the form is signed.

c. The holder of an IA should ensure that the duplicate copy is an exact and legible reproduction of the original. The signatures should not be carbon copies but original signatures written in ink.

d. 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 section 43.7 shall execute an FAA Form 337 in at least triplicate, as required by 14 CFR part 43, appendix B. One (1) copy of the FAA Form 337 shall be placed on board the aircraft as specified in 14 CFR section 91.417 of the rules. The remaining forms shall be distributed as previously noted.

e. 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.

(1) The mechanic who makes the installation will, in accordance with 14 CFR part 43, section 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.

(2) Give a copy to the owner and forward a copy to the FAA FSDO for the area where the installing mechanic is operating.

WEIGHT AND BALANCE

Weight and balance data are no longer required to be entered on FAA Form 337. However, it is imperative that weight and balance checks and computations be made very carefully. Since practically every aircraft manufacturer uses a different method of weight and balance control, it would be impossible to provide a universally adaptable method. The example provided in appendix 1, figure 11, of this guide is general in nature and can be modified or revised as needed to fit the aircraft involved. When revising weight and balance data, these general guidelines should be followed.

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 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 items, such as 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, and empty CG, along with example loadings or general instructions, to cover the most likely loading conditions. (Refer to 14 CFR section 91.9(b)(2).) AC 120-27, Aircraft Weight and Balance Control, and FAA-H-8083-1, Aircraft Weight and Balance Handbook contain useful information applicable to the functions performed by the holder of an IA on general aviation aircraft.

GET IT STRAIGHT

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. Attention to the following details will usually avoid the ill will a later disagreement may generate.

SUGGESTIONS FOR DEVELOPING GOOD OWNER/IA RELATIONS

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, opening inspection plates, etc.
 - 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 airworthiness directives (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. Such items might be:
 - 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.
 - 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 agreed on by the owner and holder of the IA. This method would result in an aircraft that is approved for return to service with the 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, section 91.213(d)(2) are properly placarded and any maintenance for deferral has been carried out. 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 properly conduct an annual inspection.
9. Complete the inspection as soon as practicable. Often, an aircraft will sit around the shops waiting for parts, even though the inspection has actually been completed. In these cases, it is advisable to officially report the aircraft unairworthy. (Refer to 14 CFR part 43, section 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 even months, and things 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, sections 43.9 and 43.11 and provide sufficient information for the owner to comply with 14 CFR part 91, section 91.417(a)(2)(i). Make adequate descriptions of repairs or alterations if accomplished along with the inspection.

11. Record compliance with all AD's actually accomplished. Provide sufficient information for the owner to comply with 14 CFR part 91, section 91.417(a)(2)(v). A general statement, such as "All AD's 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 AD's 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 holder of an IA should be available as work progresses on major jobs. In this way, affected areas and structures can be seen more readily than after completion of the entire job. In many cases, the workmanship can be inspected and improved easier during the process of the job rather than having to redo it later.

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

- a. VOR equipment checked in accordance with 14 CFR part 91, section 91.171.
- b. Altimeter and altitude reporting equipment test and inspections in accordance with 14 CFR part 91, section 91.411.
- c. ATC transponder inspection in accordance with 14 CFR part 91, section 91.413. These tests and inspections are not part of the annual inspection.
- d. Elt inspection in accordance with 14 CFR part 91, section 91.207.

SAMPLE TEST QUESTIONS AND ANSWERS

1. What ignition system is approved for a Lycoming engine model 0-540-A4A5?

- A—Bendix magneto model D6LN-3031.
- B—Slick magnetos models 662 and 663.
- C—Bendix magnetos models S6LN-20 and S6LN-21.

Answer C—Subject Matter Knowledge Code: Y303. Type Certificate Data Sheet No. E-295, Note 8.

2. A lower horizontal stabilizer streamlined brace is to be repaired by welding. The brace size is 1¼ inch. The repair should be accomplished using which of the following materials?

- A—A round insert tube of the same material, one gauge thicker than the original streamlined tube and a minimum length of 5.01 inch.
- B—An outside sleeve of at least the same gauge with a minimum length of 9.128 inches.
- C—An inside sleeve of the same streamlined tubing as original with a maximum insert length of 6.43 inches.

Answer B—Subject Matter Knowledge Code: K49. AC 43.13-1B, Chapter 2, Paragraph 81; and figure 2.13.

3. Use Airworthiness Directive (AD) AD 80-10-02 to answer this question.

Known Information: Messerschmitt-Bolkow-Blohm Model BO-105 helicopter with tail rotor blade grips P/N 105-31722 installed.

While performing a progressive inspection on this helicopter, you note in the aircraft's records that the last compliance with AD 80-10-02 was at an aircraft time of 5402 hours. The records further indicate that the tail rotor blade grips were replaced at an aircraft time of 4902. What action is required at this inspection with a time of 5502?

- A—Compliance is required for paragraph (c)(1)(2).
- B—Compliance is required for paragraph (e).
- C—Compliance is required for paragraphs (b)(d) and (e).

Answer C—Subject Matter Knowledge Code: A14. AD80-10-02.

4. Where can the major items to be inspected be found that must be included in a checklist used while performing an annual inspection on a fixed-wing aircraft?

- A—FAA Form 8130-10.
- B—14 CFR part 43, Appendix D.
- C—Advisory Circular 43.13-1B.

Answer B—Subject Matter Knowledge Code: K49. 14 CFR part 43, section 43.15(c) states:

“Sec. 43.15 Additional performance rules for inspections....”

(c) Annual and 100-hour inspections.

(1) Each person performing an annual or 100-hour inspection shall use a checklist while performing the inspection. The checklist may be of the person's own design, one provided by the manufacturer of the equipment being inspected or one obtained from another source. This checklist must include the scope and detail of the items contained in appendix D to this part and paragraph (b) of this section....”

5. Airworthiness Approval Tags (FAA Form 8130-3) may be used by which maintenance entity for approving products for return to service after maintenance or alteration?

- A—Inspection Authorizations.
- B—14 CFR part 145, Certified Repair Stations.
- C—Either A or B.

Answer B—Subject Matter Knowledge Code K05. Order 8130.21C.

The work must be accomplished by a certificate holder under 14 CFR part 121 or 135, having a continuous airworthiness maintenance program or by a repair station certificated under part 145.

6. When installing additional equipment in an aircraft, if not otherwise specified, the ultimate load factor used in the static load test is

- A—four times the weight of the equipment.
- B—variable, depending on the direction of applied force.
- C—the limit load factor multiplied by 1.5.

Answer C—Subject Matter Knowledge Code: K50. AC 43.13-2A, Chapter 1, Paragraph 3.

Ultimate load factors are limit load factors multiplied by a 1.5 safety factor.

7. Which Code of Federal Regulations (CFR's) provides for the fabrication of aircraft replacement and modification parts?

- A—14 CFR part 21.303.
- B—14 CFR part 23, appendix B.
- C—14 CFR part 45.21.

Answer A—Subject Matter Knowledge Code A112. 14 CFR part 21, subpart K, section 21.303, defines who may produce modification and replacement parts for sale and those persons to which the part does not apply.

8. A proposed airframe alteration will require a section of Mil-H-8788-10 hydraulic hose to flex through 60° of travel. The system will operate at 210° centigrade and 1200 psi. What is the minimum bend radius for this installation?

- A—3¼ inches.
- B—5½ inches.
- C—7¾ inches.

Answer B—Subject Matter Knowledge Code: K49. Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair, Chapter 10, Paragraph d; and figure 10.5.

9. Where would you find the marking and placards required for Cessna Model 208, serial number 20800044?

- A—Type Certificate Data Sheet No. A37CE.
- B—Airplane Flight Manual, Cessna P/N D1286-13PH.
- C—Model 208 Series Maintenance Manual.

Answer B—Subject Matter Knowledge Code: A157. 14 CFR part 23, Subpart G “Operating limitations and Information.”

10. Which of the following aircraft, operating under 14 CFR part 91, could the holder of an inspection authorization approve for return-to-service after a major alteration has been made in accordance with technical data approved by the administrator?

A—A commuter category, multiengine, turbopeller airplane.

B—A transport category, multiengine, turbojet airplane.

C—Either A or B.

Answer C—Subject Matter Knowledge Code: A45. 14 CFR part 65, section 65.95(a).

“Sec. 65.95 Inspection authorization: privileges and limitations.

(a) The holder of an inspection authorization may—

(1) Inspect and approve for return to service any aircraft or related part or appliance (except any aircraft maintained in accordance with a continuous airworthiness program under Part 121 or 127 of this chapter) after a major repair or major alteration to it in accordance with Part 43 of this chapter, if the work was done in accordance with technical data approved by the Administrator; and

(2) Perform an annual or perform or supervise a progressive inspection according to §§43.13 and 43.15 of this chapter.”

SUGGESTIONS FOR STUDYING FOR THE IA TEST

The following should not be considered to be an all inclusive study outline. It is intended only to highlight some major areas. The test draws on the entire spectrum of aircraft technology, with emphasis on maintenance and inspection.

1. Be familiar with the parts of Title 14 Code of Federal Regulations (14 CFR) as listed in appendix 2.
2. Study 14 CFR parts 91 and 135 aircraft maintenance and inspection requirements.
3. Be familiar with aircraft type certificate data sheets and specifications. This should include the differences and history of these documents. Applicant should know how revisions are noted.
4. Study 14 CFR part 43, appendixes A, B, and D for detailed information regarding major repairs, major alterations, and annual inspections.
5. Learn to use the graphs and tables in AC 43.13-1B, (or most current revision) Acceptable Methods, Techniques and Practices - Aircraft Inspection and Repair; and AC 43.13-2A, (or most current revision) Acceptable Methods, Techniques, and Practices - Aircraft Alterations.
6. Be familiar with airworthiness directives for small aircraft and rotorcraft. This should include knowledge of the rule, 14 CFR part 39.
7. Be familiar with the completion of FAA Form 337 (Major Repair and Alteration - Airframe, powerplant, Propeller, or Appliance). Guidance in this area is provided in AC 43.9-1E, Instructions for Completion of FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance).
8. Know the requirements for maintenance and inspection record entries for 14 CFR parts 43, and 91. Guidance in this area is provided in AC 43.9C, Maintenance Records; also AC 39-7C, Airworthiness Directives.
9. Be familiar with minimum equipment list for general aviation aircraft. Guidance in this area is provided in AC 91-67, Minimum Equipment Requirements for General Aviation Operations under FAR Part 91.
10. Be familiar with all aspects of weight and balance computations. Applicant must be able to:
 - a. calculate basic empty weight and center of gravity in both inches and percent of mean aerodynamic chord (MAC).
 - b. conduct adverse loading checks for extreme forward and rearward CG positions.

Applicants should practice making changes to an aircraft weight and balance report by simulating installing or removing equipment and then computing the forward, aft, and empty weight center of gravity (CG). Guidance in this area is provided in AC 65-9, Airframe and Powerplant Mechanics General Handbook and FAA-H-8083-1, Aircraft Weight and Balance Handbook. Also, many commercial publications are available on this subject.

NOTE: You should use the most current versions of the referenced documents.

APPENDIX 1

SAMPLE FORMS

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

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION MECHANIC'S APPLICATION FOR INSPECTION AUTHORIZATION		Form Approved: OMB No. 04-R0110	
1. NAME (Last, first, middle) Doe, John J.		2. MECHANIC CERTIFICATE NO. A&P 123455678	
3. MAILING ADDRESS (Number, street, city, State/County; ZIP Code) (Place at which you desire to receive Airworthiness Directives, etc.) 1450 E. Cheltenham Ave. Cleveland County Oklahoma City, OK 73098	4a. FIXED BASE OF OPERATIONS PLACE AT WHICH YOU MAY BE LOCATED IN PERSON DURING NORMAL WORKING WEEK Meridian Aviation Downtown Airpark 5060 S. Western Oklahoma City, OK 73452		4b. TELEPHONE NO. PLACE AT WHICH YOU MAY BE LOCATED BY TELEPHONE DURING NORMAL WORKING WEEK (405) 555-1842
	5. HAVE YOU HELD A MECHANIC CERTIFICATE WITH BOTH AIRFRAME AND POWERPLANT RATINGS FOR THE 3 YEARS PRECEDING THE DATE OF THIS APPLICATION?		YES NO X
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 FARs?		YES NO X	
7. HAS YOUR MECHANIC CERTIFICATE AND/OR RATINGS BEEN REVOKED OR SUSPENDED DURING THE 3-YEAR PERIOD PRECEDING THIS APPLICATION?		YES NO X	
8. HAS AN INSPECTION AUTHORIZATION BEEN DENIED YOU WITHIN 90 DAYS PREVIOUS TO THIS APPLICATION? IF ANSWER IS "YES", EXPLAIN IN REMARKS.		YES NO X	
9. HAVE YOU MET THE MINIMUM REQUIREMENTS FOR RENEWAL OF INSPECTION AUTHORIZATION? (For Renewal Only)		YES NO X	
10. BASIS FOR RENEWAL (Number Performed)			
ALTERATIONS	REPAIRS	ANNUAL INSPECTIONS	PROGRESSIVE INSPECTIONS
			RECENT ISSUANCE-IN EFFECT LESS THAN 90 DAYS BEFORE EXPIRATION DATE
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	Meridian Aviation Downtown Airpark 5060 S. Western Oklahoma City, OK 73452	Inspection, repair and overhaul of single-engine and multiengine aircraft.	
TO PRESENT			
FROM			
TO			
FROM			
TO			
FROM			
TO			
12. REMARKS			
13. CERTIFICATION: I certify that the statements made above and in all attachments hereto are correct and true.			
DATE March 19, 20XX	SIGNATURE OF APPLICANT 		
14. RECORD OF ACTION (For FAA Use Only)			
<input type="checkbox"/> ISSUANCE <input type="checkbox"/> VOLUNTARY SURRENDER <input type="checkbox"/> ENDORSEMENT <input type="checkbox"/> RENEWAL		INSPECTOR'S SIGNATURE	OFFICE IDENTIFICATION

FAA Form 8610-1 (2-78) SUPERSEDES 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. 123456789
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
03-16-20XX	JOHN J. DOE <i>John Doe</i>

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

SIGNATURE OF AUTHORIZED MECHANIC
Robert D. Burge

Front view showing initial date of authorization.

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
03-30-20XX	<i>John Doe</i>	SW-FSDO-2

Back view showing new expiration.

FIGURE 2.—FAA Form 8310-5, Inspection Authorization, (front and back view).

 U.S. Department of Transportation Federal Aviation Administration		MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)		Form Approved OMB No. 2120-0020	
				For FAA Use Only	
Office Identification					
INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 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. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each violation (Section 901 Federal Aviation Act of 1958).					
1. Aircraft	Make Cessna		Model 182L		
	Serial No. 18259080		Nationality and Registration Mark N42565		
2. Owner	Name (As shown on registration certificate) B.J. & P., Inc.		Address (As shown on registration certificate) 1888 N.W. 92 St. Oklahoma City, OK 73405		
	3. For FAA Use Only				
The data identified herein complies with the applicable airworthiness requirements and is approved for the above described aircraft, subject to conformity inspection by a person authorized by 14 CFR Part 43, Section 43.7.					
SW-FSDO-23		April 6, 20XX		John J. Doe	
District Office		Date		Signature of FAA Inspector	
4. Unit Identification					
Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	~~~~~ (As described in Item 1 above) ~~~~~			X	
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				
6. Conformity Statement					
A. Agency's Name and Address		B. Kind of Agency		C. Certificate No.	
Katy M. Johnson 411 Riverview Dr. Norman, OK 72091		<input checked="" type="checkbox"/> U.S. Certificated Mechanic <input type="checkbox"/> Foreign Certificated Mechanic <input type="checkbox"/> Certificated Repair Station <input type="checkbox"/> Manufacturer		130598865	
D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.					
Date March 23, 20XX		Signature of Authorized Individual <i>Katy M. Johnson</i> Katy M. Johnson			
7. Approval for Return To Service					
Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED					
BY	FAA Fit. Standards Inspector	Manufacturer	<input checked="" type="checkbox"/>	Inspection Authorization	Other (Specify)
	FAA Designee	Repair Station		Person Approved by Transport Canada Airworthiness Group	
Date of Approval or Rejection April 12, 20XX		Certificate or Designation No. 233346566		Signature of Authorized Individual Mike J. Woodham <i>Mike J Woodham</i>	

FAA Form 337 (12-88)

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). Detailed instructions for the use of FAA Form 337 are in 14 CFR part 43, and AC 43.9-1E.

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 <i>(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)</i> N42565 April 12, 20XX Aircraft Total Time 4,218 hours 1. Removed right wing from aircraft and removed skin from outer 6 feet. Repaired buckled spar 49 inches from tip in accordance with attached photographs and figure 1 of drawing dated March 23, 1998. DATE: March 26, 20XX, inspected splice in Item 1 and found it to be in accordance with data indicated. Splice is okay to cover. Inspected internal wing assembly for hidden damage and condition. <i>Mike J Woodham</i> Mike J. Woodham, A&P 233346566 IA 2. Primed interior wing structure and replaced skin P/N's 63-0085,63-0086, and 63-00878 with same skin 2024-T3, .025 inches thick. Rivet size and spacing all the same as original and using procedures in Chapter 2, Section 3, of AC 43.13-1A, dated 1972. 3. Replaced stringers as required and installed 6 splices as per attached drawing and photographs. 4. Installed wing, rigged aileron, and operationally checked in accordance with manufacturer's maintenance manual. 5. No change in weight or balance. ----- END <input type="checkbox"/> Additional Sheets Are Attached

FIGURE 4.—FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance), (back view).

NOTE: Please note the specific references which identify FAA approved or acceptable data. Also note entry regarding inspection of the repair by the holder of an IA prior to the cover being applied and an inspection of the wing assembly for hidden damage and condition.

March 22, 2002

Total Aircraft Time 1502.0 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 123456789 IA

FIGURE 5.—Example of a maintenance record entry.

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 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.

AD NOTES COMPLIANCE RECORD

Page 2 of 3 Date _____

Reg # N1234 A/C Make/Model CESSNA C-182-L S/N 18266080

A/C Cert. Date 4-21-68 Eng. Model CONT. 0470B Prop. Model M^CCAULEY 2A34-66N

S/N 1022 S/N 6297

AD#	Rev. Date	Applicable S.B. # & Subject	Date & Hours @ Comp.	Method of Compliance	One Time	Recurring	Next Comp. @ Hrs/Date	Authorized Signature & Number
79-08-03		ELEC. SYSTEM FAILURE	11-4-79 2176 HRS	C/V PER PART A3	X			Joe Kline 52977112
79-10-14		FUEL VENTING	10-1-80 2421 HRS	LT & RT VENTED FUEL CAPS INSTALLED	X			Joe Kline 52977117
83-15-01		FUEL QUANTITY INDICATORS	6-26-83 2950 HRS	INSPECT FUEL CAP SEALS		X	EACH ANNUAL	Bill Johnson 91162915
83-17-06		ROBERTSON STOL INST.	NA	NOT INSTALLED ON A/C				Bill Johnson 91162915
84-10-01	B1	INSPECT FUEL BLADDERS	11-10-84 3110 HRS	C/V PARAGRAPHS (A) (B) & (C)			NO FURTHER ACTION REQ	Mike White 66299677

FIGURE 6.—Airworthiness Directive compliance record (suggested format).

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION MALFUNCTION OR DEFECT REPORT				OPER. Control No.		8. Comments (Describe the malfunction or defect and the circumstances under which it occurred. State probable cause and recommendations to prevent recurrence.)		DISTRICT OFFICE	OPERATOR DESIGNATOR
				ATA Code	8120				
				1. A/C Reg. No.	695J	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.		COMPUTER/OTHER	FAA
Enter pertinent data	MANUFACTURER	MODEL/SERIES	SERIAL NUMBER						
2. AIRCRAFT	Cessna	421B	421B79485						
3. POWERPLANT	Continental	GT910520L	C216977						
4. PROPELLER	McCauley	3AF34C92	42279			FAA	MFG.	AIR TAXI	MECH.
5. SPECIFIC PART (of component) CAUSING TROUBLE									
Part Name	MFG. Model or Part No.	Serial No.	Part/Defect Location			MFG.	AIR TAXI	MECH.	OPER.
Wastegate shaft	Garrett PN4166952	NA	Left engine wastegate						
6. APPLIANCE/COMPONENT (Assembly that includes part)						MFG.	AIR TAXI	MECH.	OPER.
Comp/App'l Name	Manufacturer	Model or Part No.	Serial Number						
Wastegate	Garrett	480164-10	1121			MFG.	AIR TAXI	MECH.	OPER.
Part TT	Part TSO	Part Condition	7. Date Sub.						
1222 hrs	NA	warped	1-22-98			Check a box below, if this report is related to an aircraft		SUBMITTED BY: Mike Merritt	TELEPHONE NUMBER (429) 555-6219
						<input type="checkbox"/> Accident; Date _____ <input type="checkbox"/> Incident; Date _____			

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

FIGURE 7.—FAA Form 8010-4, Malfunction or Defect Report, (revised 10-92).

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.

Operating Limitations:	Zeph-Air 63-1A N40023
RPM	Do not exceed 2300
Oil temperature	212° max.
Airspeed limits do not exceed:	
Level flight or climb	95 MPH
Glide or dive	129 MPH
Gross weight	1,200 lbs
Empty CG	14.4" aft of datum
Useful load	453 lb
Kinds of operation	VFR-Day
	40 lb solo front
	20 lb solo rear

FIGURE 8.—Example of an operating limitations placard.

NOTE: Example operating limitations placard for a typical light aircraft certified under 14 CFR part 23.

March 30, 2002

Total Aircraft Time 1853.00 Hours

Tach Reading 975.80

I certify that this aircraft has been inspected in accordance with an annual inspection and a list of discrepancies and unairworthy items dated March 30, 2002, have been provided for the aircraft owner.

Joseph P. Kline
A&P 123456789 IA

FIGURE 9.—Example of a record entry for an annual inspection in which the aircraft was found to be unairworthy.

Academy Aviation
Hangar 4
North Philadelphia Airport
Philadelphia, PA 19114

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

Dear Mr. McCall:

This is to certify that on March 30, 2002, I completed an annual inspection on your aircraft, Condor 191B, S/N 3945, N1234, and found the following unairworthy items:

1. Compression in No. 3 cylinder read 30 over 80, which is below the manufacturer's recommended limits.
2. The muffler has a broken baffle plate which is blocking the engine exhaust outlet.
3. There is a 6-inch crack on bottom of left wing just aft of main landing gear attach point.

Jospeh P. Kline
A&P 123456789 IA

FIGURE 10.—Example of a discrepancy list to be provided to an aircraft owner when reporting an aircraft with unairworthy items after completing an annual inspection.

Weight & Balance				Date: 04/22/20XX			
Cessna 182L							
N42565							
S/N18259080				Supersedes Computations of FAA Form 337, dated 10/02/90.			
<u>Removed the following equipment:</u>							
1. Turn Coordinator P/N C661003-0201		Weight	Arm	Moment			
2. Directional Gyro P/N 0706000		2.5 lbs	15	37.5			
		<u>3.12 lbs</u>	13.5	<u>42.12</u>			
	TOTAL	5.62		79.62			
		1709.60	35.26	60282.2			
		<u>-5.62</u>		<u>-79.62</u>			
	Aircraft after removal:	1703.98	35.3	60202.58			
<u>Installed the following equipment:</u>							
1. S-Tec 40 Autopilot system, includes Turn Coordinator and Directional Gyro.		Weight	Arm	Moment			
		13 lbs	32.7	425.13			
		1703.98		60202.20			
		<u>+13.00</u>		<u>+425.13</u>			
	*REVISED LICENSED EMPTY WEIGHT	1716.98	35.31	60627.71			
	NEW USEFUL LOAD 1083.02						
<u>Forward Check (Limit +38.4)</u>				<u>Rearward Check (Limit +47.4)</u>			
	Wt.	Arm	Moment		Wt.	Arm	Moment
A/C Empty	1716.98	35.31	60627.21	A/C Empty	1716.98	35.31	60627.21
Fwd. Seats	170.00	36.00	6120.00	Fwd. Seats	170.00	36.00	6120.00
Aft. Seats				Aft. Seats	340.00	71.00	24140.00
Fuel (min.)	115.00	48.00	5520.00	Fuel (max.)	360.00	48.00	17280.00
Oil	22.00	-15.00	-330.00	Oil	22.00	-15.00	-330.00
Baggage				Baggage	<u>120.00</u>	<u>97.0</u>	<u>11640.00</u>
	<u>2023.98</u>	<u>35.5</u>	<u>71937.71</u>		2728.98	43.78	119477.71



Joseph P. Kline
A & P 123456789

FIGURE 11.—Example of a weight and balance revision for a typical light, single-engine aircraft.

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

March 30, 2002

Aircraft Total Time 1520 Hours

Complied with AD 90-06-03R1, effective date March 27, 20XX. Modified the airplane by compliance with paragraph (b) of AD. Installed Cessna Service Kit SK 172-10A. No recurring action required.

Bill Quinlan
A&P 143298671

FIGURE 12.—Example of a one-time Airworthiness Directive compliance entry.

April 1, 2002

Engine Total Time 720 Hours

Complied with AD 82-27-03, Roto-Masters Turbo Chargers by inspection as required by paragraph (b) through (g) of the AD. Turbine housing found satisfactory, next inspection due at 920 hours.

Joe Knight
A&P 279862423

FIGURE 13.—Example of a recurrent Airworthiness Directive compliance entry.

APPENDIX 2

PUBLICATIONS AND TECHNICAL DATA

PUBLICATIONS AND TECHNICAL DATA

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

1. TITLE 14 OF THE CODE OF FEDERAL REGULATIONS (CFR).

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 is composed of four chapters. Chapter I of this title is the Federal Aviation Administration, Department of Transportation (DOT). This chapter contains parts 1-199.

The following CFR parts are of particular interest to the holder of an inspection authorization.

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 in either official paper or official electronic copies.

Paper copies are available from the following.

U.S. Government Printing Office (GPO)
 Mail Stop: SDE
 732 N. Capitol Street, NW
 Washington, DC 20401

Toll Free: 888-293-6498

Electronic copies of the Code of Federal Regulations may be found on the Internet at the following addresses.

■ www.airweb.faa.gov/rgl
(Regulatory and Guidance Library) — The official FAA Copy

■ www.faa.gov
(Federal Aviation Administration)

■ www.access.gpo.gov
(Government Printing Office)

■ www.gpo.gov/nara/cfr/index.html
(National Archives and Records Administration)

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.

TCDS background information.

There are two kinds of certification documents contained in the TCDS file:

- (1) Type Certificate Data Sheets
- (2) Specifications

“Type Certificate Data Sheets” were originated and first published in January 1958. CFR subpart 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, 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 in electronic version is available on the Internet at the FAA web site titled “Regulatory and Guidance Library” at – www.airweb.faa.gov/rgl. This is a free service.

3. SUMMARY OF AIRWORTHINESS DIRECTIVES FOR SMALL AIRCRAFT AND ROTORCRAFT (ADS).

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 bi-weekly and mailed to registered owners of effected equipment and subscription holders. Airworthiness directives 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.

Each of these categories is presented in three books. Included in these books are the airframe ADs and the ADs applicable to the engines, propellers, and appliances of the category.

These books may be purchased from:

U.S. Government Printing Office (GPO)
Mail Stop: SDE
732 N. Capitol Street, NW
Washington, DC 20401

Toll Free: 888-293-6498

The official FAA copy in electronic version is available on the Internet at the FAA web site titled "Regulatory and Guidance Library" (RGL) at – www.airweb.faa.gov/rgl.

The ADs are totally searchable and easily located. The individual airworthiness directives and the AD biweeklies on the RGL website are considered official FAA copy and may be used in lieu of purchasing paper copies. This is a free service. Questions concerning the RGL may be directed to the Delegation & Airworthiness Programs Branch (AIR-140) at (405) 954-4103.

4. ADVISORY CIRCULARS.

The Federal Aviation Administration issues advisory circulars 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 (AC 39-7 would therefore deal with a subject related to CFR part 39 or 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 web site.

- AC 39-7C, Airworthiness Directives. (FREE)
- AC 43-4A, Corrosion Control for Aircraft. (FOR SALE)
- AC 43-11, Reciprocating Engine Overhaul Terminology and Standards. (FREE)
- AC 43.13-1B, Acceptable Methods, Techniques and Practices - Aircraft Inspection and Repair. (FOR SALE)
- AC 43.13-2A, Acceptable Methods, Techniques, and Practices - Aircraft Alterations. (FOR SALE)
- AC 43-9C, Maintenance Records. (FREE)

- AC 43.9-1E, Instructions for Completion of FAA Form 337 Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance). (FREE)
- AC 91-67, Minimum Equipment Requirements for General Aviation Operations Under FAR Part 91. (FREE)

ADDITIONAL INFORMATION of particular interest to the holder of an inspection authorization.

- FAA-H-8083-1, Aircraft Weight and Balance Handbook (FOR SALE)

5. HOW TO ORDER PUBLICATIONS.

Refer to AC 00-2.13, Advisory Circular Checklist, for ordering instructions for both free and sale advisory circulars (ACs). AC 00-2.13 also gives stock numbers and prices for ACs sold by the Superintendent of Documents. The checklist is available on the Internet at: http://www.faa.gov/aba/html_policies/ac00_2.html

6. ADDITIONAL SOURCES OF INSPECTION DATA.

Several commercial publisher 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.

APPENDIX 3

LIST OF REFERENCE MATERIALS AND SUBJECT MATTER KNOWLEDGE CODES

LIST OF REFERENCE MATERIALS AND SUBJECT MATTER KNOWLEDGE CODES

The publications listed in the following pages are documents that are used as references in preparing the inspection authorization knowledge tests. The official FAA copy in electronic format is available on the FAA web site titled “Regulatory and Guidance Library (RGL).” (www.airweb.faa.gov/rgl) All of these publications can be purchased through U.S. Government Bookstores, commercial aviation supply houses, or industry organizations. The latest revision of the listed references should be requested. Additional study material is also available through these sources that may be helpful in preparing for knowledge tests.

The subject matter knowledge codes establish the specific reference for the knowledge standard. When reviewing results of your knowledge test, you should compare the subject matter knowledge code(s) on your Airman Test Report to the ones found below.

Title 14 of the Code of Federal Regulations (14 CFR) part 1—Definitions and Abbreviations

- A01 General Definitions
- A02 Abbreviations and Symbols

14 CFR part 21—Certification Procedures for Products and Parts

- A100 General
- A102 Type Certificates
- A104 Supplemental Type Certificates
- A108 Airworthiness Certificates
- A110 Approval of Materials, Parts, Processes, and Appliances
- A112 Export Airworthiness Approvals
- A117 Technical Standard Order Authorizations

14 CFR part 23—Airworthiness Standards: Normal, Utility, Acrobatic and Commuter Category Airplanes

- A150 General
- A151 Flight
- A152 Structure
- A153 Design and Construction
- A154 Powerplant
- A155 Equipment
- A157 Operating Limitations and Information
- A159 Appendix G: Instructions for Continued Airworthiness

14 CFR part 27—Airworthiness Standards: Normal Category Rotorcraft

- A250 General
- A253 Flight
- A255 Strength Requirements
- A257 Design and Construction
- A259 Powerplant
- A261 Equipment
- A263 Operating Limitations and Information
- A265 Appendix A: Instructions for Continued Airworthiness

14 CFR part 39—Airworthiness Directives

A13 Airworthiness Directives

14 CFR part 43—Maintenance, Preventive Maintenance, Rebuilding, and Alteration

A15 Maintenance, Preventive Maintenance, Rebuilding, and Alteration

A16 Appendixes

14 CFR part 45—Identification and Registration Marking

A400 General

A401 Identification of Aircraft and Related Products

A402 Nationality and Registration Marks

14 CFR part 65—Certification: Airmen Other Than Flight Crewmembers

A40 General

A45 Mechanics

A46 Repairmen

14 CFR part 91—General Operating and Flight Rules

B07 General

B11 Equipment, Instrument, and Certificate Requirements

B12 Special Flight Operations

B13 Maintenance, Preventive Maintenance, and Alterations

14 CFR part 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; and Rules Governing Persons on Board Such Aircraft

D30 General

D36 Maintenance

14 CFR part 135—Operating Requirements: Commuter and on Demand Operations and Rules Governing Persons on Board Such Aircraft

E03 Aircraft and Equipment

E09 Airplane Performance Operating Limitations

E10 Maintenance, Preventive Maintenance, and Alterations

E12 Special Federal Aviation Regulations SFAR No. 36

14 CFR part 183—Representatives of the Administrator

E150 General

E151 Certification of Representatives

E152 Kinds of Designations: Privileges

FAA-H-8083-1—Aircraft Weight and Balance Handbook

H108	Equipment for Weighing
H109	Preparation for Weighing
H110	Determining the Center of Gravity
H111	Empty-Weight Center of Gravity Formulas
H112	Determining the Loaded Weight and CG
H113	Multiengine Airplane Weight and Balance Computations
H114	Determining the Loaded CG
H115	Equipment List
H116	Weight and Balance Revision Record
H117	Weight Changes Caused by a Repair or Alteration
H118	Empty-Weight CG Range
H119	Adverse-Loaded CG Checks
H120	Ballast
H121	Weighing Requirements
H122	Locating and Monitoring Weight and CG Location
H123	Determining the Correct Stabilizer Trim Setting
H124	Determining CG Changes Caused by Modifying the Cargo
H125	Determining Cargo Pallet Loads with Regard to Floor Loading Limits
H126	Determining the Maximum Amount of Payload That Can Be carried
H127	Determining the Landing Weight
H128	Determining the Minutes of Fuel Dump Time
H129	Weight and Balance of Commuter Category Airplanes
H130	Determining the Loaded CG of a Helicopter
H131	Using an Electronic Calculator to Solve Weight and Balance Problems
H132	Using an E6-B Flight Computer to Solve Weight and Balance Problems
H133	Using a Dedicated Electronic Computer to Solve Weight and Balance Problems
H134	Typical Weight and Balance Problems
H135	Glossary

ADDITIONAL ADVISORY CIRCULARS

K03	AC 00-34, Aircraft Ground Handling and Servicing
K12	AC 20-32, Carbon Monoxide (CO) Contamination in Aircraft—Detection and Prevention
K13	AC 20-43, Aircraft Fuel Control
K20	AC 20-103, Aircraft Engine Crankshaft Failure
K45	AC 39-7, Airworthiness Directives
K46	AC 43-9, Maintenance Records
K47	AC 43.9-1, Instructions for Completion of FAA Form 337
K48	AC 43-11, Reciprocating Engine Overhaul Terminology and Standards
K49	AC 43.13-1, Acceptable Methods, Techniques, and Practices—Aircraft Inspection and Repair
K50	AC 43.13-2, Acceptable Methods, Techniques, and Practices—Aircraft Alterations
L25	FAA-G-8082-11, Inspection Authorization Knowledge Test Guide
L70	AC 91-67, Minimum Equipment Requirements for General Aviation Operations Under FAR Part 91
M02	AC 120-27, Aircraft Weight and Balance Control
M52	AC 00-2, Advisory Circular Checklist

Type Certificate Data Sheets and Specifications

- Y300 Type Certificate Data Sheets and Specifications Alphabetical Index and Users Guide
- Y301 Type Certificate Data Sheet No. 2A13 Piper
- Y302 Type Certificate Data Sheet No. 3A19 Cessna
- Y303 Type Certificate Data Sheet No. E-295 Textron Lycoming
- Y304 Type Certificate Data Sheet No. A7CE Cessna
- Y305 Type Certificate Data Sheet No. 3A13 Cessna
- Y306 Type Certificate Data Sheet No. A7S0 Piper
- Y307 Type Certificate Data Sheet No. A11EA Tiger Aircraft LLC
- Y308 Type Certificate Data Sheet No. E-273 Teledyne Continental
- Y309 Aircraft Specification No. 1A6 Piper
- Y310 Type Certificate Data Sheet No. P57GL McCauley
- Y311 Type Certificate Data Sheet No. P-920 Hartzell
- Y312 Type Certificate Data Sheet No. 2A4 Twin Commander
- Y313 Type Certificate Data Sheet No. E-284 Textron Lycoming

NOTE: AC 00-2, Advisory Circular Checklist, transmits the status of all FAA advisory circulars (ACs), as well as FAA internal publications and miscellaneous flight information, such as Aeronautical Information Manual, Airport/Facility Directory, knowledge test guides, practical test standards, and other material directly related to a certificate or rating. The checklist is available on the Internet at: <http://www.airweb.faa.gov/rgl>