



Inspection Authorization Test Prep

Eighth Edition

Based on the original text by **Dale Crane** Edited by **Terry Michmerhuizen**

5 FREE
Online Practice Tests

Activation Code Included



Study & Prepare

A comprehensive study tool to prepare
for the FAA Inspection Authorization
Knowledge Exam

Inspection Authorization Test Prep

Eighth Edition



A comprehensive study tool to
prepare for the FAA Inspection
Authorization Knowledge Exam

Based on the original text by **Dale Crane** Edited by **Terry Michmerhuizen**

READER TIP:

The FAA Knowledge Exam can change
throughout the year. Stay current with
test changes; sign up for ASA's free email
update service at www.asa2fly.com/testupdate



Aviation Supplies & Academics, Inc.
Newcastle, Washington

Inspection Authorization Test Prep
Eighth Edition
By Dale Crane
Edited by Terry Michmerhuizen

Aviation Supplies & Academics, Inc.
7005 132nd Place SE
Newcastle, Washington 98059-3153

ASA has online resources for this IA Test Prep:
go to the ASA Product Updates pages to check for the
latest question updates: **www.asa2fly.com/updates**.

See also the “Reader Resources” page at
www.asa2fly.com/reader/ia — this dedicated IA Test Prep
reader webpage will provide additional resources and
information applicable to the IA certificate (see explanation
on Page vii).

© 2018 Aviation Supplies & Academics, Inc.
Front cover photo: ©iStock.com/DavidBGray

No part of the questions or explanations may be
reproduced in any manner whatsoever without the written
permission of the publisher. ASA assumes no responsibility
for any errors or omissions. Neither is any liability assumed
for damages resulting from the use of the information
contained herein. None of the material in this publication
supersedes any documents, procedures or regulations
issued by the Federal Aviation Administration.

ASA-IA-8-PD
ISBN 978-1-61954-824-4

Stay informed of aviation
industry happenings

Website www.asa2fly.com
Updates www.asa2fly.com/testupdate
Twitter www.twitter.com/asa2fly
Facebook www.facebook.com/asa2fly
Blog www.learntoflyblog.com

Contents

Preface: How to Use This IA Test Prep	vii
---	-----

Chapter 1 **Overview of Inspection Authorization**

Introduction	1–3
What You Should Know About IA Certification.....	1–3
<i>Maintenance Airmen</i>	1–3
<i>Basic Privileges of an IA</i>	1–3
<i>Eligibility Requirements for an IA</i>	1–3
<i>Duration of an Inspection Authorization</i>	1–4
<i>Renewal of an Inspection Authorization</i>	1–4
<i>Change of Fixed Base of Operation</i>	1–4
What You Should Know About the IA Knowledge Test	1–5
<i>Steps for Taking the Inspection Authorization Knowledge Test</i>	1–5
Description of the IA Knowledge Test	1–6
<i>Test Aids You May Use</i>	1–7
<i>Cheating or Other Unauthorized Conduct</i>	1–7
<i>Retesting Procedures</i>	1–7
Preparation for the IA Knowledge Test	1–8
<i>Studying for the IA Knowledge Test</i>	1–9
<i>Learning Statement Codes (LSC)</i>	1–10

Chapter 2 **The Function of an IA**

Introduction	2–3
Approving Major Repairs and Major Alterations	2–3
<i>14 CFR Part 3—General Requirements</i>	2–4
<i>Approved Data</i>	2–5
<i>Inspecting Repairs or Alterations</i>	2–7
Annual, 100-Hour, and Progressive Inspections	2–7
<i>Inspection for Configuration</i>	2–7
<i>Inspection for Condition</i>	2–8
Minimum Equipment List (MEL).....	2–8
Airworthiness Directives (ADs)	2–9
Malfunction or Defect Reports	2–10
<i>Paperwork Review</i>	2–10
<i>Aircraft Markings</i>	2–11

Continued

Aircraft with Discrepancies or Unairworthy Conditions.....	2 – 11
<i>Incomplete Inspection</i>	2 – 11
<i>Maintenance Records</i>	2 – 11
<i>Significance of Maintenance Record Entries</i>	2 – 12
<i>Completion of FAA Form 337</i>	2 – 12
<i>Weight and Balance</i>	2 – 13
Aircraft Owner / IA Relationships.....	2 – 13

Chapter 3 **Title 14 of the Code of Federal Regulations (14 CFR)**

Introduction.....	3 – 3
14 CFR Part 1 <i>Definitions and Abbreviations</i>	3 – 3
14 CFR Part 21 <i>Certification Procedures for Products, Articles and Parts</i>	3 – 5
14 CFR Part 23 <i>Airworthiness Standards: Normal Category Airplanes</i>	3 – 7
14 CFR Part 27 <i>Airworthiness Standards: Normal Category Rotorcraft</i>	3 – 10
14 CFR Part 43 <i>Maintenance, Preventive Maintenance, Rebuilding, and Alteration</i>	3 – 11
14 CFR Part 45 <i>Identification and Registration Marking</i>	3 – 22
14 CFR Part 65 <i>Certification: Airmen Other Than Flight Crewmembers</i>	3 – 25
14 CFR Part 91 <i>General Operating and Flight Rules</i>	3 – 31
14 CFR Part 125 <i>Certification and Operations: Airplanes having a seating capacity of 20 or more passengers or a maximum payload capacity of 6,000 pounds or more</i>	3 – 36
14 CFR Part 135 <i>Operating Requirements: Commuter and On-Demand Operations</i>	3 – 36
14 CFR Part 183 <i>Representatives of the Administrator</i>	3 – 38

Chapter 4 **Airworthiness Directives (ADs)**

14 CFR Part 39 <i>Airworthiness Directives</i>	4 – 3
Categories of Airworthiness Directives	4 – 3
<i>Notice of Proposed Rulemaking (NPRM)</i>	4 – 3
<i>Immediately Adopted Rule</i>	4 – 3
<i>Emergency ADs</i>	4 – 3
<i>ADs Issued to Other than Aircraft</i>	4 – 3
Publication of Airworthiness Directives.....	4 – 4
<i>Applicability of ADs</i>	4 – 4
Construction of an Airworthiness Directive	4 – 4
<i>The AD Number</i>	4 – 4
<i>The Amendment Number</i>	4 – 5
<i>Applicability Statement</i>	4 – 5
<i>Compliance Time or Date</i>	4 – 5
<i>Effective Date</i>	4 – 5
<i>Compliance Statement</i>	4 – 5
<i>Alternate Method of Compliance (AMOC)</i>	4 – 5
Sample Test Questions.....	4 – 6

Sample Airworthiness Directives	4 – 11
80-10-02 Messerschmitt-Bolkow-Blohm	4 – 11
80-15-12 Costruzioni Aeronautiche Giovanni Agusta	4 – 12
81-23-01 R1 Beech	4 – 13
82-06-12 Air Tractor	4 – 16
82-11-05 Bendix	4 – 17
90-01-06 Enstrom Helicopter Corporation	4 – 18
90-08-14 Beech	4 – 19
93-24-03 Beech Aircraft Corporation	4 – 21
95-13-08 Pratt & Whitney Canada	4 – 23

Chapter 5 **FAA Order 8130.21**

Sample Test Questions	5 – 3
Sample Forms	5 – 7
<i>Order 8130.21H Procedures for Completion and Use of the Authorized Release Certificate, FAA Form 8130-3, Airworthiness Approval Tag</i>	5 – 7
<i>FAA Form 8130-3, Authorized Release Certificate (Airworthiness Approval Tag)</i>	5 – 91

Chapter 6 **Advisory Circulars**

The Advisory Circular (AC) System	6 – 3
AC 39-7D Airworthiness Directives	6 – 3
AC 43-4A Corrosion Control for Aircraft	6 – 4
AC 43-9C Maintenance Records	6 – 5
AC 43.9-1F Instructions for Completion of FAA Form 337	6 – 6
AC 43.13-1B Acceptable Methods, Techniques and Practices — Aircraft Inspection and Repair	6 – 8
AC 43.13-2A Acceptable Methods, Techniques, and Practices — Aircraft Alteration	6 – 38
FAA-H-8083-1 Aircraft Weight and Balance Handbook	6 – 41
FAA-G-8082-11C Inspection Authorization Knowledge Test Guide	6 – 44
AC 91-67 Minimum Equipment Requirements for General Aviation Operations Under 14 CFR Part 91	6 – 46
Reprints of Advisory Circulars	6 – 49
AC 39-7D	6 – 49
FAA-G-8082-11C	6 – 57
FAA-G-8082-19	6 – 81
AC 91-67	6 – 137

Chapter 7 **Type Certificate Data Sheets, Aircraft Specifications and Listings**

TCDS Background Information.....	7 – 3
TCDS Availability	7 – 4
<i>Coded Entries</i>	7 – 5
Aircraft Codes	7 – 5
Engine Codes	7 – 5
Sample Test Questions.....	7 – 6
Type Certificate Data Sheets.....	7 – 19
2A13, Piper PA-28	7 – 21
3A19, Cessna 150	7 – 63
E-295, Lycoming O-540.....	7 – 81
A7CE, Cessna 400 Series	7 – 89
3A13, Cessna 182	7 – 113
A7SO, Piper PA-34-200	7 – 147
A11EA, Gulfstream American AA-1	7 – 163
1A6, Piper PA-22	7 – 171
E-273, Continental O-470	7 – 187
P57GL, McCauley.....	7 – 193
P-920, Hartzell.....	7 – 199
2A4, Twin Commander.....	7 – 209
E-284, Textron Lycoming	7 – 243
A-9CE, Cessna 188.....	7 – 247
3A12, Cessna 172	7 – 265
A16CE, Cessna 207/T207	7 – 297
3A21, Cessna 210	7 – 309
A3SO, Piper PA-32-260	7 – 353

Appendix

Answer Key	A – 1
------------------	-------

Preface

How to Use This IA Test Prep

This IA Test Prep has been prepared to provide you with the information you will need to pass the IA Knowledge Test and help you become familiar with the privileges and limitations of this, the highest level of maintenance airman certification.

The knowledge test for IA is different from other FAA certification tests in that you are furnished with a more extensive supplement with which to take the test — the latest revision of the *Computer Testing Supplement for Inspection Authorization* (CT-8080-8). This lengthy supplement contains excerpts from the Federal Regulations, Advisory Circulars, Type Certificate Data Sheets, charts and figures from AC 43.13-1B and AC 43.13-2A, and examples of FAA forms. However, there are questions on the IA Knowledge Test regarding the core knowledge the FAA expects of an airframe and powerplant mechanic that are not covered by the reference material included in the latest revision of CT-8080-8. As it is explained in the FAA's *IA Knowledge Test Guide* (FAA-G-8082-11):

“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.”

Therefore the IA Knowledge Test also differs from the other FAA tests in that it remains a “closed test,” which means the exact database of questions is not available to the public. The sample questions included in this book have been derived based on history and experience with the IA testing process, and the Learning Statement Codes (LSC) from both the latest revision of CT-8080-8 and the airframe and powerplant mechanics LSC listing. For this reason, it is recommended that in addition to studying this *Inspection Authorization Test Prep*, you also study the *General Test Guide* (ASA-AMG), the *Airframe Test Guide* (ASA-AMA), and the *Powerplant Test Guide* (ASA-AMP).

A Reader Resources page at the ASA website (www.asa2fly.com/reader/ia) dedicated to this *IA Test Prep* has been created to provide additional helpful resources, such as links to copies of pertinent FAA Advisory Circulars, and most importantly, a PDF of the most recent test supplement (the FAA-CT-8080-8). To become familiar with the contents of this FAA test supplement, review this downloadable PDF. If you know ahead of time how the supplement is organized and how to access it while answering questions, this will help you prepare to take the actual exam.

The Federal Regulations that should be studied for the IA knowledge test have been reprinted by ASA and are available in one volume, ***FAR-AMT: Federal Aviation Regulations for Aviation Maintenance Technicians***.

The Advisory Circulars that contain information required for the IA knowledge test are reprinted either in ASA's FAR-AMT book, or in this IA Test Prep. An exception to this is that AC 43.13-1B *Acceptable Methods, Techniques, and Practices—Aircraft Inspection and Repair* and AC 43.13-2B *Acceptable Methods, Techniques, and Practices—Aircraft Alterations* have been reprinted and bound into a single volume as ***AC 43.13-1B/2B Acceptable Methods, Techniques, and Practices—Aircraft Inspection, Repair, and Alterations***, reprinted by ASA and sold separately.

Continued

The proven effective ASA “Fast-Track” format is used for this test guide and the questions and their answer alternatives are similar to those in the FAA Knowledge Test. Examine the question and the alternatives carefully, then select the alternative that is the best answer for the question. Read the explanation directly below the alternatives to verify your answer. At the bottom of the page in smaller type are the question number, the chosen answer alternative, the LSC, and the actual reference from which the question is derived. There is also a complete answer key in the Appendix, beginning on Page A-1, that shows the question number, chosen answer alternative, LSC, and the reference source from which the answer was derived.

Dale Crane

Terry Michmerhuizen

Note: Although the IA Knowledge Exam is based upon FAA documentation (i.e. regulations, Orders, and Advisory Circulars), the actual FAA documents change more frequently than the agency updates the CT-8080-8 Testing Supplement. The answers to the FAA test questions are based upon the information in the CT-8080-8 Testing Supplement. Additionally, the AC 43.13-2B was released in March 2008, but the CT-8080-8D continues to reference the AC 43.13-2A.

www.prepware.com

See inside front cover
for FREE account!

Helping you practice for written exams.

As the experts in FAA Knowledge Exam preparation, we want you to have the confidence needed before heading to the testing center, and help eliminate the hassle and expense of retaking exams.

> Realistic Test Simulation

Test questions and time allowed replicate the official FAA exam

> Performance Graphs

Review how you did, track your performance and review explanations for the questions you missed

> Gain Confidence

Go into your exam fully prepared after practicing up to 5 simulated tests

> Succeed

Pass your exam, achieve your goals, and set new ones



Remote Pilot • Sport Pilot • Private Pilot • Instrument Rating • Commercial Pilot • Flight Instructor
Ground Instructor • Fundamentals of Instructing • Flight Engineer • Airline Transport Pilot
Inspection Authorization • AMT General • Airframe • Powerplant

Chapter 1

Overview of Inspection Authorization

Introduction	1–3
What You Should Know About IA Certification	1–3
<i>Maintenance Airmen</i>	1–3
<i>Basic Privileges of an IA</i>	1–3
<i>Eligibility Requirements for an IA</i>	1–3
<i>Duration of an Inspection Authorization</i>	1–4
<i>Renewal of an Inspection Authorization</i>	1–4
<i>Change of Fixed Base of Operation</i>	1–4
What You Should Know About the IA Knowledge Test	1–5
<i>Steps for Taking the Inspection Authorization Knowledge Test</i>	1–5
Description of the IA Knowledge Test	1–6
<i>Test Aids You May Use</i>	1–7
<i>Cheating or Other Unauthorized Conduct</i>	1–7
<i>Retesting Procedures</i>	1–7
Preparation for the IA Knowledge Test	1–8
<i>Studying for the IA Knowledge Test</i>	1–9
<i>Learning Statement Codes (LSCs)</i>	1–10

Introduction

The questions in this manual are typical of those asked on an IA Knowledge Test, and therefore their primary purpose is to help you become familiar with the reference materials. However, ASA's *Inspection Authorization Test Prep* is not merely an aid to passing the FAA test, but has been prepared to help you understand the materials used by an IA in his/her daily conduct of business.

What You Should Know About IA Certification

Maintenance Airmen

The regulations regarding certification of maintenance airmen are included in Title 14 of the Code of Federal Regulations (14 CFR) Part 65, *Certification: Airmen Other Than Flight Crewmembers*, §65.91. This regulation identifies three categories of maintenance airmen: mechanic, inspector, and repairman.

Mechanic is the basic certification, and there are two ratings available for it: Airframe and Powerplant.

The Inspection Authorization is available to the holder of a Mechanic certificate with both Airframe and Powerplant ratings who meets certain additional experience and knowledge requirements.

Repairman certification is issued to persons who have specialized experience and who work at a specific job in an FAA-certificated facility, such as a repair station or an air carrier. There is another category of Repairman certification that allows the builder of an amateur-built aircraft to perform condition inspections on the aircraft he or she has built.

Basic Privileges of an IA

With the exception of aircraft maintained on a Continuous Airworthiness Program under 14 CFR Part 121 (*Operating Requirements: Domestic, Flag, and Supplemental Operations*), 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 may supervise or perform a progressive inspection.

Eligibility Requirements for an IA

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 14 CFR Part 65, §65.91(c).

§65.91 Inspection Authorization

(c) To be eligible for an inspection authorization, an applicant must —

(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 two-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.

Duration of an Inspection Authorization

Each IA expires on March 31 of each odd-numbered year. However, the holder may exercise the privileges of that authorization only while he holds a currently effective mechanic certificate with both a currently effective airframe and powerplant rating.

An IA ceases to be effective whenever any of the following occurs:

- The authorization is surrendered, suspended, or revoked.
- The holder no longer has a fixed base of operation.
- The holder no longer has the equipment, facilities, and inspection data required for the issuance of the authorization.

Renewal of an Inspection Authorization

To be eligible for renewal of an inspection authorization for a two-year period, an applicant must present evidence at renewal, during the month of March in odd-numbered years, at an FAA FSDO or International Field Office that the applicant still meets the requirements of §65.91(c)(1) through (4) for each year they have held the IA certificate. The applicant must show that during the current period the inspection authorization has been held, the applicant has —

- Performed at least one annual inspection for each 90 days the applicant has held the current authority; or
- Performed inspections of at least two major repairs or major alterations for each 90 days the applicant has held the current authority; or
- Performed or supervised and approved at least one progressive inspection in accordance with standards prescribed by the Administrator; or
- Attended and successfully completed a refresher course, acceptable to the Administrator of not less than 8 hours of instruction during each 12-month period; or
- Passed an oral test by an FAA inspector to determine that the applicant's knowledge of applicable regulations and standards is current.

The holder of an inspection authorization that has been in effect for less than 90 days before the expiration date need not comply with these requirements.

Change of Fixed Base of Operation

If the holder of an IA changes his fixed base of operation, he may not exercise the privileges of the authorization until he has notified, in writing, the FAA FSDO or International Field Office for the area in which the new base is located, of the change.

What You Should Know About the IA Knowledge Test

The Knowledge Test for Inspection Authorization is different from any of the other FAA certification test in that you must get permission to take the test by having a personal interview with an Aviation Safety Inspector (ASI) in your local FSDO.

Steps For Taking the Inspection Authorization Knowledge Test

We appreciate feedback from individuals who have taken their Inspection Authorization test so we may continually make improvements to this publication.

1. Contact your local FSDO to make an appointment to interview with an ASI (airworthiness) to determine your eligibility to take the test.
2. When the ASI is satisfied that you have met all of the requirements for IA, furnish positive proof of identification and complete FAA Form 8610-1, *Mechanic's Application for Inspection Authorization*.
3. Register with the computer testing designee at the test center indicated by the ASI to schedule a test and make financial arrangements for test payment.
4. You will not need to take (nor will you be allowed to carry in) any of your IA reference material to the test center; however, you will need proper identification.
5. Before you take the actual test, you will have the option to take a sample test. Since there is no time limit on the sample test, be sure to work through it completely. It will not only help you become familiar with the computer testing, but will also provide valuable information concerning charts and graphs referenced on the test and included in the *Computer Testing Supplement for Inspection Authorization*. Finally, it will help you understand how to "flag" questions you want to research and return to later. This is an important feature that prevents you from getting bogged down on a particular question, and instead allows you to keep up your momentum. The actual test is time-limited; however, you should have sufficient time to complete and review your test.
6. Make a chart of your progress as you go through the test. This chart has four columns with the first labeled "**Question Number**" and runs 1–50. The second is labeled "**Finished**." The third is labeled "**Review In**." The last column is labeled "**Calculation Required**." The object is to help you keep track of what you have completed and which questions need more attention. If you run through the actual test using this method without stopping to research anything, you may find you have a large portion of the test completed with a high degree of confidence. For questions that you know you must research such as ADs or TCDS data, put that reference information in the third column and come back to it later. Sometimes, more than one question will direct you to the same reference material. This way you minimize lost time in redundant searches. Finally, you should use any remaining time for doing the computation questions, such as weight and balance, and rivet-spacing.
7. Upon completion of the test, you will receive your Airman Test Report with the testing center's embossed seal, which reflects your score. This test report lists the learning statement codes (LSC) for questions answered incorrectly. Study the LSC subjects to increase your knowledge of the subject matter.
8. You will be given 10 minutes to review any questions you missed (without the answer choices or your selected answer). This is helpful for determining where future study and learning can be focused.
9. The minimum passing score is 70; however, if you fail the test you must wait 90 days before you are allowed to retest. Because the 8610-1 form is only good for a period of 30 days, you will have to complete a new form and have your local FSDO again approve you for testing. You must also pay the testing center for this second test.
10. After passing the test, present your Airman Test Report to an ASI 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 may have. When the ASI is satisfied that you have met all of the requirements, your IA certificate will be issued.

Description of the IA Knowledge Test

The test contains 50 objective multiple-choice type questions, each of which can be answered by the selection of a single response. Each test question is independent of any 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. This time is based on previous experience and is considered more than adequate if you are properly prepared.

At the test center, you will be provided with the latest revision of CT-8080-8. This supplement is the **only** reference you may use and contains excerpts from the applicable parts of the Federal Regulations (14 CFR), representative Airworthiness Directives, charts and diagrams from pertinent Advisory Circulars, and examples of Type Certificate Data Sheets and Specifications and pertinent FAA forms. Before you start the test, take a few minutes to look through the supplement to familiarize yourself with its contents.

Carefully read the information and instructions given with the tests, as well as the introductory statements in each test item.

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

- Answer each question in accordance with the latest regulations and procedures, unless the data provided in the computer testing supplement differs.
- Read each question carefully before looking at the possible answer choices. You should clearly understand the problem before attempting to solve it.
- After formulating an answer, determine which of the alternatives most closely corresponds with that answer. The answer chosen should resolve the problem *completely*.
- From the answers given, it may appear that there is more than one possible answer; however, only one answer is correct and complete. The other answers are either incomplete, or they reflect popular misconceptions.
- 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 — the computer will alert you to all unanswered questions. This procedure will enable you to use the available time to the maximum advantage.
- When solving a calculation problem, select the answer closest to 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.

Note: Sometimes a test will have more than 50 questions. This occurs when the FAA includes additional new “sample” questions for determining user understanding and validating properly-worded questions. Usually there are no more than five of these. Do not assume that the last five questions are the additional sample questions. Instead, they are randomly placed throughout the test, so you must answer **all** questions to the best of your ability. These additional questions will not count towards your final score, but if you leave any blank they will be counted against you.

Test Aids You May Use

The IA Knowledge Test requires you to analyze all of the variables needed to solve the problems. When solving problems involving mathematical calculation you are tested on concepts rather than rote calculation ability. This allows you to use certain calculators, computers, or similar devices designed for aviation-related activities provided they are used within these guidelines.

- Applicants may use test aids, such as scales, straightedges, protractors, plotters, navigation computers, log sheets, and all models of aviation-oriented calculating devices that are directly related to the test. In addition, applicants may use any test materials provided with the test.
- Manufacturer's permanently inscribed instructions on the front and back of these test aids such as formulas, conversions, regulations, signals, weather data, holding pattern diagrams, frequencies, weight and balance formulas, and air traffic control procedures are permissible.
- The test proctor may provide calculating devices to applicants and deny them use of their personal calculating devices if the applicant's device does not have a screen that indicates all memory has been erased. The test proctor must be able to determine the calculating device's erasure capability. You are not allowed to use calculating devices incorporating permanent or continuous-type memory circuits without erasure capability.
- Magnetic cards, magnetic tapes, modules, computer chips, or any other device upon which prewritten programs or information related to the test can be stored and retrieved are not allowed. Printouts of data will be surrendered at the completion of the test if the calculating device used incorporates this design feature.
- The use of any booklet or manual containing instructions related to the use of the applicant's calculating device is not permitted.
- Dictionaries are not allowed in the testing area.
- The test proctor makes the final determination relating to test materials and personal possessions that the applicant may take into the testing area.

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 one year.

Retesting Procedures

If you fail the IA 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.

Preparation for the IA Knowledge Test

Aviation Supplies & Academics has a comprehensive array of books to prepare you for the IA test:

ASA-FAR-AMT *Federal Aviation Regulations for Aviation Maintenance Technicians*

This volume contains reprints of pertinent parts of 14 CFR and ACs that apply to aviation maintenance.

ASA-IA *Inspection Authorization Test Prep*

Contains explanations of the documents used in the IA Knowledge Test with example questions similar to those that will be on the test.

AC 43.13-1B/2B *Acceptable Methods, Techniques, and Practices — Aircraft Inspection, Repair, and Alterations*

This single volume contains reprints of both of these essential Advisory Circulars. The procedures and techniques described are *acceptable* for inspections, repairs, and alterations but may not necessarily be used as *approved* data unless specifically approved by an FAA Aviation Safety Inspector.

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

Provides information on determining the empty weight and EWCG of an aircraft, and information on loading and operating an aircraft to keep the weight and CG within allowable limits.

ASA-DAT *Dictionary of Aeronautical Terms*

A comprehensive dictionary of aeronautical terms and abbreviations.

ASA-MHB *Aviation Mechanics Handbook*

A handy toolbox-sized reference manual of charts, tables, diagrams, formulas, and other information useful to the aircraft mechanic.

ASA-AMG *General Test Guide*

ASA-AMA *Airframe Test Guide*

ASA-AMP *Powerplant Test Guide*

These three volumes contain answers, and explanations for all the questions that may be asked on the mechanic knowledge tests. They are a good source of review for the basic core knowledge questions that may be asked on the IA test.

CT-8080-8 *Computer Testing Supplement for Inspection Authorization*

This large loose-leaf notebook is the same as that furnished for use during the IA Knowledge Test, and contains the necessary excerpts and figures for the test questions. All of the pertinent information, tables, charts, and figures in this expensive test supplement are included in the other materials listed here. *Note:* Read the instructions on Pages ii and vii regarding how to download a PDF version of this supplement.

Visit www.asa2fly.com/reader/ia to access documents important to your IA test preparation.

Studying for the IA Knowledge Test

The computer-based IA test is straightforward, but you should prepare for it to the best of your ability. Here are some specific suggestions for studying for this test.

- Study all of the regulations and technical data listed in the FAA Learning Statement Codes subject listing (see next page).
- Learn to use the indexes in the publications efficiently, especially those for the Type Certificate Data Sheets and Specifications.
- Learn to identify the revision dates and change numbers for all FAA publications.
- Study 14 CFR Part 43 and its Appendixes, for detailed information regarding major repairs, major alterations, and annual inspections.
- Learn the use of graphs and tables in AC 43.13-1B, *Acceptable Methods, Techniques and Practices—Aircraft Inspection and Repair*, and in AC 43.13-2B *Acceptable Methods, Techniques and Practices—Aircraft Alterations*.*
- Practice researching ADs, Type Certificate Data Sheets, and Specification Sheets on different makes and models of aircraft, engines, and propellers.
- Practice filling out FAA Form 337, *Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance)*. Guidance is provided in AC 43.9-1F, *Instructions for Completion of FAA Form 337*.
- Practice filling out maintenance and inspection record entries in accordance with 14 CFR §43.11.
- Practice making changes to an aircraft weight and balance report by simulating installation or removal of equipment, then computing the forward, aft, and empty-weight center of gravity (CG).
- Practice the use of the CT-8080-8 supplement prior to taking the actual test.*

* See the Reader Resources page on the ASA website for free downloadable PDFs of the AC 43.13-1B/2B, and the current CT-8080-8: www.asa2fly.com/reader/ia

Learning Statement Codes (LSC)

When you take the applicable airman knowledge test required for an airman pilot certificate or rating, you will receive an Airman Knowledge Test Report. The test report will list “learning statement codes” (LSC) for questions you answered incorrectly. Match the code given on your test report to the ones in the list of official FAA Learning Statement Codes (shown below). The Airman Knowledge Test Report must be presented to the examiner conducting the practical test. This examiner may evaluate the noted areas of deficiency.

The expression “learning statement,” as used in airman testing, refers to measurable statements of knowledge that a student should be able to demonstrate following a certain segment of training. In order that each learning statement may be read and understood as a complete sentence, precede each LSC with the words: “Upon the successful completion of training the student should be able to...” — then complete the phrase with the subject indicated by the LSC given in your knowledge test results.

FAA Learning Statement Codes are prefixed with a letter-identifier (for example, IAR031). For the purposes of reference within this IA Test Prep, the letter prefix is omitted; therefore throughout the book in the reference lines, LSCs are referred to by their number-identifiers only, in parentheses.

The FAA appreciates testing experience feedback. You can contact the branch responsible for the FAA Knowledge Exams directly at:

Federal Aviation Administration
AFS-630, Airman Test Standards Branch
P.O. Box 25082
Oklahoma City, OK 73125
Email: AFS630comments@faa.gov

LSC	Subject area		
IAR001	Calculate alteration specification	IAR018	Determine repair parameters
IAR002	Calculate center of gravity	IAR019	Determine repair requirements
IAR003	Calculate electrical load	IAR020	Interpret data
IAR004	Calculate proof loading	IAR021	Interpret regulations
IAR005	Calculate repair specific	IAR022	Recall alteration / design fundamentals
IAR006	Calculate sheet metal repair	IAR023	Recall engine repair fundamentals
IAR007	Calculate temperature conversion	IAR024	Recall fundamental inspection principles — airframe / engine
IAR008	Calculate weight and balance — adjust weight / fuel	IAR025	Recall MEL requirements
IAR009	Determine alteration parameters	IAR026	Recall principles of corrosion control
IAR010	Determine alteration requirements	IAR027	Recall principles of sheet metal forming
IAR011	Determine correct data	IAR028	Recall principles of system fundamentals
IAR012	Determine data application	IAR029	Recall principles of weight and balance
IAR013	Determine design specific	IAR030	Recall regulatory requirements
IAR014	Determine fabrication specification	IAR031	Recall regulatory specific
IAR015	Determine process specific	IAR032	Recall repair fundamentals
IAR016	Determine regulatory requirement		
IAR017	Determine regulatory requirements		

Chapter 2

The Function of an IA

Introduction	2-3
Approving Major Repairs and Major Alterations	2-3
14 CFR Part 3—General Requirements	2-4
Approved Data	2-5
Inspecting Repairs or Alterations	2-7
Annual, 100-Hour, and Progressive Inspections	2-7
Inspection for Configuration	2-7
Inspection for Condition	2-8
Minimum Equipment List (MEL)	2-8
Airworthiness Directives (ADs)	2-9
Malfunction or Defect Reports	2-10
Paperwork Review	2-10
Aircraft Markings	2-11
Aircraft with Discrepancies or Unairworthy Conditions	2-11
Incomplete Inspection	2-11
Maintenance Records	2-11
Significance of Maintenance Record Entries	2-12
Completion of FAA Form 337	2-12
Weight and Balance	2-13
Aircraft Owner / IA Relationships	2-13

Introduction

An Inspection Authorization accords two additional privileges to an FAA-certificated mechanic with an Airframe and Powerplant rating. These are:

1. The authorization to inspect and approve for return to service of an aircraft or related part or appliance after a major repair or a major alteration.
2. The authorization to perform an annual inspection or to perform or supervise a progressive inspection.

This chapter considers four items of concern to an IA:

1. The approval of major repairs and major alterations
2. Annual and progressive inspections
3. Maintenance records
4. The relationship between an IA and the aircraft owner

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 ensuring 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 these are compatible with previous repairs and alterations made to the aircraft.

14 CFR §43.11 requires the inspector to include in his or her maintenance record entry, either the following statement or a similarly worded one, upon completion of determining airworthiness: ***“I certify that this aircraft has been inspected in accordance with _____ inspection and was determined to be in an airworthy condition.”*** Therefore it is important to understand the definition for the term “airworthy.” Although the term is fundamental to all maintenance and inspection activities, only recently did the FAA specifically define it in regulatory material (September 16, 2005). See 14 CFR Part 3 on the next page.

Prior to this regulatory reference, the definition was inferred by reading the requirements found in 14 CFR §21.183 necessary to obtain an Airworthiness Certificate, and the related comment on the Standard Airworthiness Certificate (FAA Form 8100-2), or referred to in nonregulatory guidance information found in FAA Order 8130.2. These references and now the formal definition in 14 CFR Part 3 state that the definition of airworthiness is based upon two specific issues:

1. **Conformity** to type design data (or approved alterations).
2. **Condition** for safe operation.

It is the aviation inspector’s job to determine that these two criteria are met before signing off the required maintenance record entry required in §43.11.

It may help in understanding this definition if the IA considers that “conformity” to type design is really an *objective* determination. In other words, do all the numbers match? Are the model numbers, part numbers, and serial numbers when applicable, consistent with approved design and alteration data?

The second part — the condition for safe operation — can be considered much more *subjective* to the technician. This is where the years of personal experience, lunchroom conversations, team meetings, networking at professional tradeshow and seminars, and discussions with coworkers come into

Continued on Page 2–5

14 CFR Part 3—General Requirements

Authority: 49 U.S.C. 106(g), 40113, 44701, and 44704.

Source: 70 FR 54832, Sept. 16, 2005, unless otherwise noted.

§3.1 Applicability.

- (a) This part applies to any person who makes a record regarding:
 - (1) A type-certificated product, or
 - (2) A product, part, appliance or material that may be used on a type-certificated product.
- (b) Section 3.5(b) does not apply to records made under part 43 of this chapter.

§3.5 Statements about products, parts, appliances and materials.

- (a) **Definitions.** The following terms will have the stated meanings when used in this section:

Airworthy means the aircraft conforms to its type design and is in a condition for safe operation.

Product means an aircraft, aircraft engine, or aircraft propeller.

Record means any writing, drawing, map, recording, tape, film, photograph or other documentary material by which information is preserved or conveyed in any format, including, but not limited to, paper, microfilm, identification plates, stamped marks, bar codes or electronic format, and can either be separate from, attached to or inscribed on any product, part, appliance or material.

- (b) **Prohibition against fraudulent and intentionally false statements.** When conveying information related to an advertisement or sales transaction, no person may make or cause to be made:
 - (1) Any fraudulent or intentionally false statement in any record about the airworthiness of a type-certificated product, or the acceptability of any product, part, appliance, or material for installation on a type-certificated product.
 - (2) Any fraudulent or intentionally false reproduction or alteration of any record about the airworthiness of any type-certificated product, or the acceptability of any product, part, appliance, or material for installation on a type-certificated product.
- (c) **Prohibition against intentionally misleading statements.**
 - (1) When conveying information related to an advertisement or sales transaction, no person may make, or cause to be made, a material representation that a type-certificated product is airworthy, or that a product, part, appliance, or material is acceptable for installation on a type-certificated product in any record if that representation is likely to mislead a consumer acting reasonably under the circumstances.
 - (2) When conveying information related to an advertisement or sales transaction, no person may make, or cause to be made, through the omission of material information, a representation that a type-certificated product is airworthy, or that a product, part, appliance, or material is acceptable for installation on a type-certificated product in any record if that representation is likely to mislead a consumer acting reasonably under the circumstances.
- (d) The provisions of §3.5(b) and §3.5(c) shall not apply if a person can show that the product is airworthy or that the product, part, appliance or material is acceptable for installation on a type-certificated product.

the picture. Most differences of opinion regarding airworthiness will occur here, but good and honest dialogue with an open mind are valuable tools for the technician. The IA must learn to balance both a willingness to learn from others, and also to defend one's own professional opinion — with the final goal of determining whether an aircraft is airworthy or not.

The holder of an IA must personally perform the inspection. The Code of Federal Regulations (CFRs) does 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:

- All replacement parts installed conform to approved design and/or have traceability to the original equipment manufacturer (OEM), or to the appropriate Parts Manufacturing Approval (PMA) or Technical Standard Order (TSO).
- As installed, the installation conforms to approved data that is applicable to the installation.
- Workmanship meets the requirements of 14 CFR §43.13, which specifies that the aircraft or product is equal to its original or properly altered condition.
- The data used is appropriate to the aircraft certification rule (e.g., CAR 3 or 14 CFR Part 23).
- Work is complete and compatible with other structures or systems.

Approved Data

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 §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:

- establish an acceptable basis for approval;
- approve the data; or
- recommend application for a supplemental type certificate.

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 ensure 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.

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.

- Type Certificate Data Sheets
- Aircraft Specifications
- Supplemental Type Certificates (STCs) (Note: Persons interested in using an STC must have approval in accordance with 49 U.S.C., §44704, from the holder of the STC prior to its use.)
- Airworthiness Directives (ADs)
- Designated Engineering Representative (DER) Approved Data With FAA Form 8110-3, *Statement of Compliance*
- Organizational Designation Authorization (ODA) Approved Data
- Appliance Manufacturer's Manuals (excluding installation instructions)

AC 43.13-1, *Acceptable Methods, Techniques, and Practices (Aircraft Inspection and Repair)*, may be used directly as approved data (for repairs only) without further approval only when there is no manufacturer's repair or maintenance instructions that address the repair, and the user has determined that it is:

- appropriate to the product being repaired;
- directly applicable to the repair being made; and
- not contrary to manufacturer's data.

This data may also be used as a basis to gain FAA data approval for major repairs.

FAA field approval (occurs when FAA enters a statement and signs block 3 of 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 in 1955 or earlier may be used as approved data.

Inspecting Repairs or Alterations

Inspecting repairs or alterations consists of these basic operations:

- Determine that the repair or alteration data has FAA approval.
- 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.
- 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 that can be made.
- 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 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 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."
- 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, 100-Hour, and Progressive Inspections

The procedures and scope for annual and 100-hour inspections are set forth in 14 CFR Part 43 Appendix D, and 14 CFR §43.15. These 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 §91.409(d). There are additional requirements for annual and progressive inspections listed in 14 CFR §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 §91.409. The following reminders should help in determining that the aircraft complies with all airworthiness requirements (refer to 14 CFR §43.15(a)):

Inspection for Configuration ("conformity to type design")

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 §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 the limitations that must be displayed in the form of markings and placards.
4. Unlike the Aircraft 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.

Inspection for Condition (“condition for safe operation”)

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 §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 the following address:

www.faa.gov

Comments may be sent by letter, with name and address typed or legibly printed to:

Federal Aviation Administration
Designee Standardization Branch, AFS-640
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 (MEL)

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 the 14 CFR Part 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 §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 §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 §§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 (ADs)

The holder of an IA is required by 14 CFR §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 §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 §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.

Continued

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 even though 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. Copies of the self-addressed form are available at all FSDOs, easy to fill out and require no postage. Prompt reporting will contribute much toward improving air safety by helping correct unsafe conditions. In addition to the old style “postcards,” it is now possible to submit these M & D reports electronically via the web. The FAA still accepts both. Some technicians will find it easier to keep the cards in their toolbox.

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 is required by 14 CFR §43.13 to determine 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 §91.9, the aircraft may not be operated until they are correctly installed.
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 §91.203 (a) and (b), should be in the aircraft and the airworthiness certificate displayed, *when the aircraft is operated*.
3. Other documents often needed but not a part of the airworthiness requirement might be a state registration, and if the aircraft is equipped with a transceiver, a Federal Communications Commission radio license. The owner or operator is responsible for maintaining these documents. However, the IA holder will be performing an appreciated service by informing the operator of any deficiencies in the display and carriage of these documents.
4. On aircraft for which no approved flight manual is required, the operating limitations prescribed during original certification, and as required by 14 CFR §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.

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 §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 §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 §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.

Incomplete Inspection

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

- Indicate any discrepancies found in the aircraft records.
- *Not* indicate that an annual inspection was conducted.
- Indicate the extent of the inspection and all work accomplished in the 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 §§43.9 and 43.11. The owner or operator is required by 14 CFR §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 are 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 appear on the appropriate maintenance records.

Completion of FAA Form 337

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.

1. The person who performed or supervised the major repair or major alteration prepares the original FAA Form 337 (two copies, or three if extended-range fuel tanks are installed in the passenger or baggage compartment). 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 43.9-1F, *Instructions for Completion of FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance)*.
3. Disposition of FAA Form 337.
 - a. The IA holder 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 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 Aircraft Registration branch in Oklahoma City within 48 hours.
 - 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 §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 §91.417. 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 §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) He or she will give a copy to the owner and forward a copy to the FAA Aircraft Registration branch in Oklahoma City.

Weight and Balance

Although weight and balance data are no longer required to be entered on FAA Form 337, it is still 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. 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 them 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.

Aircraft Owner/IA Relationships

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.

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 cowlings 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 upon 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 an MEL or under 14 CFR §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 this cases, it is advisable to officially report the aircraft unairworthy. (Refer to 14 CFR §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 §§43.9 and 43.11 and provide sufficient information for the owner to comply with 14 CFR §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 §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.
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 §91.171.
 - b. Altimeter and altitude reporting equipment test and inspections in accordance with 14 CFR §91.411*.
 - c. ATC transponder test and inspection in accordance with 14 CFR §91.413*.

*These tests and inspections are not part of the annual inspection.

Chapter 3

Title 14 of the Code of Federal Regulations (14 CFR)

Introduction	3–3
14 CFR Part 1	
<i>Definitions and Abbreviations</i>	3–3
14 CFR Part 21	
<i>Certification Procedures for Products, Articles and Parts</i>	3–5
14 CFR Part 23	
<i>Airworthiness Standards: Normal Category Airplanes</i>	3–7
14 CFR Part 27	
<i>Airworthiness Standards: Normal Category Rotorcraft</i>	3–10
14 CFR Part 43	
<i>Maintenance, Preventive Maintenance, Rebuilding, and Alteration</i>	3–11
14 CFR Part 45	
<i>Identification and Registration Marking</i>	3–22
14 CFR Part 65	
<i>Certification: Airmen Other Than Flight Crewmembers</i>	3–25
14 CFR Part 91	
<i>General Operating and Flight Rules</i>	3–31
14 CFR Part 125	
<i>Certification and Operations: Airplanes having a seating capacity of 20 or more passengers or a maximum payload capacity of 6,000 pounds or more</i>	3–36
14 CFR Part 135	
<i>Operating Requirements: Commuter and On-Demand Operations</i>	3–36
14 CFR Part 183	
<i>Representatives of the Administrator</i>	3–38

Introduction

The documents in Title 14 of the Code of Federal Regulations (14 CFR), formerly called the Federal Aviation Regulations, are the actual legal documents that govern civil aviation operations. Throughout this book the term “14 CFR” is directly interchangeable with the former “FAR.”

It is the responsibility of an IA to have current copies of all the applicable parts of 14 CFR that pertain to aviation maintenance. IAs should refer to **rgl.faa.gov** to determine the currency of any document they are using.

This chapter contains typical questions taken from applicable Federal Regulations.

Note: On October 16, 2009, the FAA released major amendments to a number of regulations — 14 CFR Parts 1, 21, 43 and 45 were affected by these revisions. Although the *effective* date for these in the Federal Register (FR) was April 14, 2010, only a portion of the changes became effective on that date. The remaining amendments have compliance dates of 18 months after the FR publication date. Currently it is not known when the FAA will update the IA test database and computer testing supplement accordingly with this amendment; therefore the proactive IA applicant will be prepared to answer questions that deal with the regulations as they currently exist as well as those affected by the new amendments. For further information, see the “Reader Resources” page on the ASA website (details are contained in a downloadable PDF of this October 2009 FR).

14 CFR Part 1 Definitions and Abbreviations

This part of 14 CFR contains a number of definitions and abbreviations that pertain to aviation operation. These are the legal definitions that take precedence over all others.

1. An alteration made in accordance with an aircraft specification would be

- A— a minor alteration.
- B— a major alteration.
- C— accomplished with acceptable data.

A major alteration is an alteration not listed in the aircraft, aircraft engine, or propeller specifications—

- (1) *That might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or*
- (2) *That is not done according to accepted practices or cannot be done by elementary operations.*

A minor alteration is an alteration other than a major alteration. Therefore, an alteration made in accordance with an aircraft specification is a minor alteration.

2. An alteration was done that normally would be considered a major alteration. How could this be signed off as a minor alteration?

- A— If you, as the inspecting IA, determine that the repair will not appreciably change the aircraft’s flight characteristics.
- B— If the alteration is listed in the appropriate aircraft specification.
- C— If the alteration is done in accordance with a Supplemental Type Certificate.

A major alteration is an alteration not listed in the aircraft, aircraft engine, or propeller specifications—

- (1) *That might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or*
- (2) *That is not done according to accepted practices or cannot be done by elementary operations.*

A minor alteration is an alteration other than a major alteration. Therefore, an alteration made in accordance with an aircraft specification is a minor alteration.

Answers All answer references in this chapter are to Title 14 of the Code of Federal Regulations (14 CFR)

1 [A] (022) 14 CFR Part 1

2 [B] (022) 14 CFR Part 1

3. As the holder of an inspection authorization, you are performing an annual inspection on a fabric-covered airplane. During the review of the aircraft records you notice that the cover was recently replaced with a synthetic cover. The aircraft documents indicate only grade-A cotton material was certificated for the aircraft. The change in covering material would constitute a

- A— minor repair.
- B— major repair.
- C— major alteration.

A major alteration is an alteration not listed in the aircraft, aircraft engine, or propeller specifications that might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or that is not done according to accepted practices or cannot be done by elementary operations.

The material used for covering can affect structural strength, and this alteration was not listed in the specifications. Therefore, this is a major alteration.

3a. What would **not** be considered maintenance?

- A— Inspection.
- B— Preservation.
- C— Preventive maintenance.

Maintenance means inspection, overhaul, repair, preservation, and the replacement of parts, but excludes preventive maintenance.

4. “Time in Service,” where turbo-propeller powered airplanes are concerned, is defined in the regulation as

- A— engine startup to engine shutdown.
- B— airborne to touchdown.
- C— the time the aircraft first begins to move until it comes to a final stop after the flight (chock to chock).

Time in service, with respect to maintenance time records, means the time from the moment the aircraft leaves the surface of the earth until it touches down at the next point of landing.

5. What is meant by the abbreviation TCAS?

- A— Total Corrected Air Speed.
- B— Terrain Clearance Activation System.
- C— Traffic Alert and Collision Avoidance System.

The abbreviation and symbols section of 14 CFR Part 1 defines TCAS as Traffic Alert and Collision Avoidance System.

6. What is meant by the abbreviation V_2 ?

- A— Stalling speed.
- B— Takeoff safety speed.
- C— Speed for best rate of climb.

The abbreviation and symbols section of 14 CFR Part 1 defines V_2 as takeoff safety speed.

6a. What is meant when the FAA uses the word “shall” in a regulation?

- A— It is “advisable” to accomplish the action.
- B— It is “permissible” to accomplish the action.
- C— It is required that you accomplish the action.

When the word “shall” is used, it is in the imperative sense. It is required you accomplish the action.

6b. A mechanic replaces the engine on a Cessna 182 with another engine, which is listed on the aircraft TCDS. The mechanic should complete which of the following?

- A— A logbook entry as this is only a minor alteration.
- B— A 337 form, and get IA approval for this major alteration.
- C— A 337 form, and get local FSDO “field approval.”

The definition of “major alteration” is “...an alteration not listed in the aircraft...specifications.” Since the engine was listed, it is only a minor alteration and nothing more than the logbook entry is required.

Answers Note: All Learning Statement Codes in parentheses are preceded by “IAR”— see explanation on Page 1–10.

3 [C] (022) 14 CFR Part 1
5 [C] (031) 14 CFR Part 1

3a [C] (030) 14 CFR Part 1
6 [B] (031) 14 CFR Part 1

4 [B] (030) 14 CFR Part 1
6a [C] (031) 14 CFR Part 1
6b [A] (031) 14 CFR Part 1

6c. The term “consensus standard”

- A— means everybody agrees with the FAA’s interpretation.
- B— is not an FAA-recognized term.
- C— is an industry-developed standard that applies to LSA certification.

Consensus standard means, for the purpose of certifying light-sport aircraft, an industry-developed consensus standard that applies to aircraft design, production, and airworthiness. It includes, but is not limited to, standards for aircraft design and performance, required equipment, manufacturer quality assurance systems, production acceptance test procedures, operating instructions, maintenance and inspection procedures, identification and recording of major repairs and major alterations, and continued airworthiness.

14 CFR Part 21**Certification Procedures for Products, Articles and Parts**

This part of 14 CFR prescribes the procedural requirements for the issue of type certificates and changes to those certificates: the issue of airworthiness certificates and the issue of export airworthiness approvals.

7. “Certification Procedures for Products, Articles and Parts” are found in which Part of Title 14 of the CFR?

- A— Part 23.
- B— Part 21.
- C— Part 121.

14 CFR Part 21 is entitled “Certification Procedures for Products, Articles and Parts.”

8. Aircraft certificated after what date were required to have an approved flight manual?

- A— July 18, 1978.
- B— November 1, 1981.
- C— March 1, 1979.

With each airplane or rotorcraft that was not type-certificated with an Airplane or Rotorcraft Flight Manual and that has had no flight time prior to March 1, 1979, the holder of a type certificate (including a supplemental type certificate) or the licensee of a type certificate shall make available to the owner at the time of delivery of the aircraft a current approved Airplane or Rotorcraft Flight Manual.

9. If a person alters an aircraft by installing special wing tips, he or she may get approval to duplicate this alteration on other aircraft by the issuance of a

- A— Provisional Type Certificate.
- B— Supplemental Type Certificate.
- C— Production Certificate.

Any person who alters a product by introducing a major change in type design, not great enough to require a new application for a new application for a type certificate under §21.19, shall apply to the Administrator for a supplemental type certificate, except that the holder of a type certificate for the product may apply for an amendment of the original type certificate.

10. An aircraft with a standard airworthiness certificate could be in which of the following categories?

- A— Utility, acrobatic, and commuter.
- B— Primary, restricted, and experimental.
- C— Normal, provisional and Transport

Standard airworthiness certificates are airworthiness certificates issued for aircraft that are type-certificated in the normal, utility, acrobatic, commuter, or transport category and for unmanned free balloons and for aircraft designated by the Administrator as special classes of aircraft.

11. An aircraft with a special airworthiness certificate would be in which of the following categories?

- A— Utility, acrobatic, and commuter.
- B— Primary, restricted, and experimental.
- C— Normal, provisional, and transport.

Special airworthiness certificates are primary, restricted, limited, and provisional airworthiness certificates, special flight permits, and experimental certificates.

Answers

- 6c [C] (031) 14 CFR Part 1
- 9 [B] (022) 14 CFR Part 21

- 7 [B] (030) 14 CFR Part 21
- 10 [A] (030) 14 CFR Part 21

- 8 [C] (030) 14 CFR Part 21
- 11 [B] (030) 14 CFR Part 21

12. Which section of 14 CFR provides for the fabrication of aircraft replacement and modification parts (PMA)?

- A— 14 CFR §21.303.
- B— 14 CFR, section 23, Appendix B.
- C— 14 CFR, section 45.21.

Part 21 is titled “Certification Procedures for Products and Articles” and contains regulations for certifying products and articles ranging from small PMA replacement parts to complete aircraft products and parts.

13. Before a new type of oil filter for a type certificated aircraft engine, manufactured by a person other than the original engine manufacturer, can be sold for installation on that engine, the manufacturer of the filter must be issued a

- A— Parts Manufacturer Approval.
- B— Supplemental Type Certificate.
- C— Production Certificate.

Except as provided in paragraph (b) of this section no person may produce a modification or replacement part for sale for installation on a type certificated product unless it is produced pursuant to a Parts Manufacturer Approval issued under this subpart.

14. An export certificate of airworthiness may be issued for

- A— a new or used aircraft if it meets the requirements of 14 CFR Part 21, Subpart E.
- B— an engine, propeller or article, only if it meets the definition of being airworthy.
- C— an engine or propeller that is not airworthy, if the importing country accepts the deviation from approved design or condition for safe operation on a form acceptable to the FAA.

Part 21 is titled “Certification Procedures for Products and Articles” and contains regulations for certifying products and articles ranging from small PMA pieces to complete aircraft, including export certificates. Normally the exported product or article must meet the requirements of being airworthy. However, the country seeking the import may waive that requirement if they specify the acceptance of the deviation on a form and in a manner acceptable to the FAA.

15. An altimeter that has been approved for installation on a civil aircraft may be manufactured under a

- A— Supplemental Type Certificate.
- B— Technical Standard Order.
- C— Production Certificate.

A Technical Standard Order (TSO) is issued by the Administrator and is a minimum performance standard for specified articles (for the purpose of this subpart, articles means materials, parts processes, or appliances) used on civil aircraft.

Answers

12 [A] (030) 14 CFR Part 21
15 [B] (016) 14 CFR Part 21

13 [A] (016) 14 CFR Part 21

14 [C] (016) 14 CFR Part 21

14 CFR Part 23

Airworthiness Standards: Normal Category Airplanes

This part of 14 CFR prescribes airworthiness standards for the issue of type certificates, and changes to those certificates for airplanes in the normal, utility, acrobatic, and commuter categories.

16. Which regulation prescribes airworthiness standards for airplanes in the normal category, having a passenger seating configuration of 19 or less and a maximum certified takeoff weight of 19,000 pounds or less?

- A— 14 CFR Part 21.
- B— 14 CFR Part 23.
- C— 14 CFR Part 25.

The FAA has recently amended its airworthiness standards for normal, utility, acrobatic, and commuter category airplanes by replacing current prescriptive design requirements with performance-based airworthiness standards (the effective date was August 30, 2017). These standards also replace the current weight and propulsion divisions in small airplane regulations with performance- and risk-based divisions for airplanes with a maximum seating capacity of 19 passengers or less and a maximum takeoff weight of 19,000 pounds or less. 14 CFR §23.2000 prescribes airworthiness standards for airplanes in the normal category. 14 CFR §23.2005 (a) limits passenger configuration and maximum certified takeoff weight.

17. When defining the weight limits and center of gravity for an airplane certificated under Part 23,

- A— the applicant must determine those limits that provide for safe operation of the airplane.
- B— the condition of the airplane at the time of determining the empty weight and center of gravity as defined by the FAA.
- C— the FAA specifies only the critical combinations of weight and center of gravity.

The FAA has recently amended its airworthiness standards for normal, utility, acrobatic, and commuter category airplanes by replacing current prescriptive design requirements with performance-based airworthiness standards (the effective date was August 30, 2017). Therefore the burden is now on the applicant to establish the appropriate weight and balance procedures. The applicant must determine limits for weights and centers of gravity that provide for safe operation of the airplane.

18. When weighing an aircraft certified under 14 CFR Part 23,

- A— the aircraft must be drained of all fluids.
- B— the applicant must determine a well-defined and easily repeatable condition of the airplane.
- C— the FAA determines the limits for empty weight and center of gravity.

The FAA has recently amended its airworthiness standards for normal, utility, acrobatic, and commuter category airplanes by replacing current prescriptive design requirements with performance-based airworthiness standards (the effective date was August 30, 2017). Therefore, the burden is now on the applicant to establish the appropriate weight and balance procedures. The condition of the airplane at the time of determining its empty weight and center of gravity must be well defined and easily repeatable, and must now be defined by the applicant.

19. The trim system for a Level 4 airplane must

- A— maintain lateral and directional control during cruise.
- B— maintain longitudinal control during cruise.
- C— maintain lateral and directional control during normal operations.

The range of airplanes certified under Part 23 is diverse in terms of capability and complexity. The Level 4 airplane (which is one having a maximum seating configuration of 10-19 passengers) must maintain lateral and trim directional control without further force in normal operations.

20. The structure of an airplane certificated under 14 CFR Part 23 must have a factor of safety of

- A— 2.3.
- B— 1.5.
- C— 4.0.

Unless otherwise provided, a factor of safety of 1.5 must be used.

Answers

- 16 [B] (030) 14 CFR Part 23
19 [C] (008) 14 CFR §23.2140(a)

- 17 [A] (008) 14 CFR §23.2100(a)
20 [B] (030) 14 CFR Part 23

- 18 [B] (008) 14 CFR §23.2100(c)

21. Regarding materials and processes in a Part 23 airplane,

- A— the FAA determines all material design characteristics.
- B— the applicant must determine the suitability and durability of the materials used.
- C— the airplane must be capable of continued safe flight following a sudden release of cabin pressure.

The range of airplanes certified under Part 23 is diverse in terms of capability and complexity, varying from Level 1 (seating only one passenger) to Level 4 (seating up to 19 passengers). The FAA has recently replaced current prescriptive design requirements with performance-based airworthiness standards, placing much of the responsibility for the design of the aircraft on the applicant. Per 14 CFR §23.2260(a), the applicant must determine the suitability and durability of the materials used.

22. The fuel system of a Part 23 airplane must

- A— provide the fuel necessary to each powerplant and the APU functions properly in all likely operating conditions.
- B— provide fuel for at least one hour of operation at maximum continuous power or thrust.
- C— be designed and arranged to provide for ignition of the fuel.

It is critical for safe flight for the fuel system to provide fuel as controlled by the pilot, to the engine(s). The range of airplanes certified under Part 23 is diverse in terms of capability and complexity, varying from Level 1 (seating only one passenger) to Level 4 (seating up to 19 passengers). Per 14 CFR §23.2430 (a)(3), each fuel system must provide the fuel necessary to each powerplant and the APU functions properly in all likely operating conditions.

23. Regarding the distribution of electrical power in a Part 23 airplane,

- A— there must be enough capacity so that if the primary electrical source fails, the system will be capable of supplying power for essential loads.
- B— the function at the airplane level is not adversely affected during the time it is exposed to lightning.
- C— the function at the airplane level is not adversely affected during the time it is exposed to the HIRF environment.

It is critical for safe flight that the electrical system be capable of meeting “essential loads” required by the aircraft to continue flying. The range of airplanes certified under Part 23 is diverse in terms of capability and complexity, varying from Level 1 (seating only one passenger) to Level 4 (seating up to 19 passengers). Per 14 CFR §23.2525(c), the power generation, storage, and distribution for any system must be designed and installed to have enough capacity, if the primary source fails, to supply essential loads.

24. Regarding the installation of flight and navigation systems in a Part 23 airplane, the information must

- A— not include any limitations.
- B— be presented in a manner that the crewmember can monitor the parameters and determine trends.
- C— inhibit the primary display of flight parameters.

During each phase of flight the aircraft instruments must provide the information necessary regarding flight, navigation, and powerplant operation. Per 14 CFR §23.2615(a), installed systems must provide the flight crewmember a presentation in such a way that the crewmember can monitor the parameters and determine trends.

25. Regarding instrument markings and placards in a Part 23 airplane,

- A— the FAA will define the required placards and markings as necessary.
- B— the applicant must include instrument marking and placard information in the Airplane Maintenance Manual.
- C— each airplane must display in a conspicuous manner any placard or instrument marking necessary for operation.

It is critical for safe flight that the markings and placards determined to be necessary for operation and included in the Airplane Flight Manual be conspicuously displayed. Per 14 CFR §23.2610(a), each airplane must display in a conspicuous manner any placard or instrument marking necessary for operation.

Answers

21 [B] (030) 14 CFR Part 23
24 [B] (013) 14 CFR Part 23

22 [A] (030) 14 CFR Part 23
25 [C] (017) 14 CFR Part 23

23 [A] (013) 14 CFR Part 23

26. If the airplane has a flight data recorder installed, it must be

- A— visible to crew at all segments of the flight.
- B— installed so there is an aural or visual means for preflight checking of the recorder for proper recording of data in the storage medium.
- C— painted either red or black.

The range of airplanes certified under Part 23 is diverse in terms of capability and complexity, varying from Level 1 (seating only one passenger) to Level 4 (seating up to 19 passengers). This requirement for a flight data recorder is one of only two paragraphs retained without change from the previous Part 23. 14 CFR §91.609 states “No holder of an air carrier operating certificate... unless that aircraft complies with any applicable flight data recorder and cockpit voice recorder requirements.” Per 14 CFR §23.1459(a), each flight recorder required by the operating rules of Part 91 must be installed so that there is an aural or visual means for preflight checking of the recorder for proper recording of data in the storage medium.

27. Regarding the airplane fuel storage system, it must

- A— provide fuel for at least one hour of operation at maximum continuous power or thrust.
- B— provide the flight crew with a means to determine the total unusable fuel available.
- C— be designed to prevent improper filling or recharging.

The range of airplanes certified under Part 23 is diverse in terms of capability and complexity, varying from Level 1 (seating only one passenger) to Level 4 (seating up to 19 passengers). The fuel for these aircraft varies from Avgas (100LL) to Turbine required (Jet A). These fuels are not compatible nor are the engines operable if they are improperly fueled. Per 14 CFR §23.2430(c), each fuel storage refilling or recharging system must be designed to prevent improper filling or recharging.

28. If the maintenance manual contains required maintenance, it will be listed in the Airworthiness Limitations Section. This section must include

- A— items having time change intervals.
- B— airframe specified inspection intervals and related procedures.
- C— both A and B.

This statement is found in the G23.4 “Airworthiness Limitations” section of Appendix A to 14 CFR Part 23: “This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure required for type certification.”

28a. Aircraft certified under 14 CFR Part 23 must have “Airworthiness Limitations” documentation, including:

- A— Special inspection techniques.
- B— Structural inspection intervals.
- C— Special tool catalog.

This statement is found in the G23.4 “Airworthiness Limitations” section of Appendix A to 14 CFR Part 23: “This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure required for type certification.”

28b. Aircraft certified under 14 CFR Part 23 must have “Airworthiness Limitations” documentation, including:

- A— Service information.
- B— Structural inspection intervals.
- C— Maintenance Manual.

This statement is found in the G23.4 “Airworthiness Limitations” section of Appendix A to 14 CFR Part 23: “This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure required for type certification.”

28c. Within 14 CFR Part 23, certain required documents are outlined. Which of the following is correct?

- A— The “Instruction for Continued Airworthiness” and “Airworthiness Limitation Section” are contained in the Manufacturer’s Maintenance Manual.
- B— The “Airworthiness Limitation Section” contains the “Instruction for Continued Airworthiness” and the “Manufacturer’s Maintenance Manual.”
- C— The “Airworthiness Limitation Section” and the “Manufacturer’s Maintenance Manual” are contained in the “Instruction for Continued Airworthiness.”

The ICA must contain the “Airplane Maintenance Manual” and a section titled “Airworthiness Limitations Section” that is separated and clearly distinguishable from the rest of the document.

Answers

26 [B] (017) 14 CFR Part 23
28a [B] (017) 14 CFR Part 23

27 [C] (024) 14 CFR Part 23
28b [B] (017) 14 CFR Part 23

28 [C] (017) 14 CFR Part 23
28c [C] (031) 14 CFR Part 23

28d. In addition to other requirements set forth in the maintenance manual of a 14 CFR part 23 airplane, commuter category additionally specifies which of the following maintenance instructions?

- A— Towing instructions.
- B— Servicing points.
- C— Special repair methods.

For commuter category airplanes, the following information must be furnished:

1. Electrical loads
2. Balancing methods
3. Identification of structure
4. Special repair methods

29. When you are performing an annual inspection on an aircraft that has instructions for continued airworthiness, which of the following would be considered approved data?

- A— Structural repair.
- B— Maintenance manual.
- C— Airworthiness limitations section.

The following statement is found in the G23.4 "Airworthiness Limitations" section of Appendix A to 14 CFR Part 23: "The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure required for type certification." This section must contain a legible statement in a prominent location that reads, "The airworthiness limitations section is FAA-approved and specifies maintenance required under §43.16 and §91.403 of the Federal Aviation Regulations unless an alternate program has been FAA-approved."

14 CFR Part 27

Airworthiness Standards: Normal Category Rotorcraft

This part prescribes airworthiness standards for the issue of type certificates, and changes to those certificates, for normal category rotorcraft with maximum weights of 7,000 pounds and nine or less passenger seats.

30. Part 27 of 14 CFR prescribes airworthiness standards for which of the following?

- A— Normal category rotorcraft.
- B— Transport category rotorcraft.
- C— Both A and B.

14 CFR Part 27 prescribes airworthiness standards for normal category rotorcraft.

30a. 14 CFR Part 27 prescribes airworthiness standards for which of the following?

- A— Small rotorcraft.
- B— Large rotorcraft.
- C— Both A and B.

14 CFR Part 27 prescribes airworthiness standards for rotorcraft with a maximum weight of 7,000 pounds or less and nine or less passengers.

31. What are the designed limit maneuvering load factors required for a helicopter certificated under 14 CFR Part 27?

- A— + 4.0 to -1.6.
- B— + 3.8 to -1.5.
- C— + 3.5 to -1.0.

The rotorcraft must be designed for a limit maneuvering load factor ranging from a positive limit of 3.5 to a negative limit of -1.0.

32. The materials used in the seats of a helicopter must be rated at least

- A— flame resistant.
- B— fireproof.
- C— fire resistant.

For each compartment used by the crew or passengers the materials must be at least flame resistant.

Answers

28d [C] (031) 14 CFR Part 23
30a [A] (017) 14 CFR Part 27

29 [C] (024) 14 CFR Part 23
31 [C] (031) 14 CFR Part 27

30 [A] (031) 14 CFR Part 27
32 [A] (031) 14 CFR Part 27

33. The reciprocating engine for a helicopter must be approved under 14 CFR Part

- A— 27.
- B— 33.
- C— 29.

According to 14 CFR §27.903, reciprocating engines for use in helicopters must be qualified in accordance with §33.49(d) or be otherwise approved for the intended usage.

34. What is the maximum deviation error allowed in a magnetic direction indicator installed in a helicopter?

- A— 5 degrees.
- B— 10 degrees.
- C— 15 degrees.

According to 14 CFR §27.1327, each magnetic direction indicator must be installed so that its accuracy is not excessively affected by the rotorcraft's vibration or magnetic fields; and the compensated installation may not have a deviation, in level flight, greater than 10 degrees on any heading.

35. Where are the requirements found for the preparation of Instructions for Continued Airworthiness for a rotorcraft?

- A— In Appendix A of Part 27.
- B— In Appendix B of Part 21.
- C— In Appendix B of Part 91.

The applicant must prepare Instructions for Continued Airworthiness in accordance with Appendix A of Part 27 that are acceptable to the Administrator.

14 CFR Part 43

Maintenance, Preventive Maintenance, Rebuilding, and Alteration

This part of 14 CFR prescribes rules governing the maintenance, preventive maintenance, rebuilding and alteration of any aircraft having a U.S. airworthiness certificate, foreign-registered civil aircraft used in common carriage or carriage of mail under the provisions of Part 121 or 135 of this chapter and airframe, aircraft engines, propellers, appliances and component parts of such aircraft. This part does not apply to any aircraft for which an experimental airworthiness certificate has been issued, unless a different kind of airworthiness certificate had previously been issued for that aircraft.

36. Certain systems of rotorcraft are specified by 14 CFR Part 43 to be inspected in accordance with the maintenance manual or Instructions for Continued Airworthiness as provided by the manufacturer concerned. Of the following, which is such a system?

- A— Engine.
- B— Flight controls.
- C— Drive shaft.

Each person performing an inspection required by Part 91 on a rotorcraft shall inspect the following systems in accordance with the maintenance manual or Instructions for Continued Airworthiness of the manufacturer concerned:

- *The drive shafts or similar systems*
- *The main rotor transmission gear box for obvious defects*
- *The main rotor and center section (or the equivalent area)*
- *The auxiliary rotor on helicopters*

Answers

33 [B] (031) 14 CFR Part 27
36 [C] (017) 14 CFR Part 43

34 [B] (030) 14 CFR Part 27

35 [A] (031) 14 CFR Part 27

37. As an IA, you are performing an annual inspection on a rotorcraft in accordance with 14 CFR Part 43, Appendix D. Would a maintenance manual, or a section thereof, also be required to perform the inspection?

- A— They are required when part of an approved inspection program.
- B— They are required if made mandatory by the type certificate data sheet.
- C— Maintenance manuals are optional if an equivalent procedure is used.

Each person performing an inspection required by Part 91 (this includes inspections conducted in accordance with 14 CFR Part 43, Appendix D) on a rotorcraft shall inspect the following systems in accordance with the maintenance manual or Instructions for Continued Airworthiness of the manufacturer concerned:

- *The drive shafts or similar systems*
- *The main rotor transmission gear box for obvious defects*
- *The main rotor and center section (or the equivalent area)*
- *The auxiliary rotor on helicopters*

Many helicopter TCDS refer to the manufacturer maintenance manuals as required information.

38. Each person performing an annual inspection must use a checklist while performing the inspection. The checklist must include the scope and detail of the items in 14 CFR Part 43, Appendix D. In addition to the items in the appendix, additional specific items are required by 14 CFR Part 43 if the aircraft is a

- A— balloon.
- B— multiengine airplane.
- C— rotorcraft.

Each person performing an inspection required by Part 91 on a rotorcraft shall inspect the following systems in accordance with the maintenance manual or Instructions for Continued Airworthiness of the manufacturer concerned:

- *The drive shafts or similar systems*
- *The main rotor transmission gear box for obvious defects*
- *The main rotor and center section (or the equivalent area)*
- *The auxiliary rotor on helicopters*

39. Following an annual inspection, if the aircraft is found unairworthy, regulations require a list of discrepancies and unairworthy items be given to whom?

- A— The owner or operator.
- B— The owner or operator and the Flight Standards District Office (FSDO).
- C— The owner or operator, the FSDO, and a copy for your file.

If the person performing any inspection required by 14 CFR Part 91, Part 125 or §135.411(a)(1) finds that the aircraft is unairworthy or does not meet the applicable type certificate data, airworthiness directives, or other approved data upon which its airworthiness depends, that person must give the owner or lessee a signed and dated list of those discrepancies.

40. Which Canadian maintenance entity may perform an annual inspection on a U.S.-registered aircraft?

- A— Aviation maintenance engineer.
- B— Approved maintenance organization.
- C— Neither A nor B.

A person holding a valid Canadian Department of Transport license (Aviation Maintenance Engineer) or an (Approved Maintenance Organization) (AMO) may perform maintenance, preventive maintenance, and alterations on a U.S.-registered aircraft located in Canada (including any inspection required by 14 CFR §91.409, except an annual inspection).

41. Which Canadian maintenance entity may approve major repairs and major alterations on U.S.-registered aircraft?

- A— Aviation maintenance engineer.
- B— Approved maintenance organization.
- C— Neither A nor B.

An Approved Maintenance Organization (AMO) whose system of quality control for the maintenance, preventive maintenance, alteration, and inspection of aeronautical products has been approved by the Canadian Department of Transport, or an authorized employee performing work for such an AMO, may approve (certify) a major repair or major alteration performed under this section if the work was performed in accordance with technical data approved by the Administrator.

Answers

37 [B] (017) 14 CFR Part 43
40 [C] (021) 14 CFR Part 43

38 [C] (017) 14 CFR Part 43
41 [B] (021) 14 CFR Part 43

39 [A] (017) 14 CFR Part 43

42. Which Canadian maintenance entity may approve data for major repairs to U.S.-registered aircraft?

- A— Aviation maintenance engineer.
- B— Approved maintenance organization.
- C— Neither A nor B.

An Approved Maintenance Organization (AMO) whose system of quality control for the maintenance, preventive maintenance, alteration, and inspection of aeronautical products has been approved by the Canadian Department of Transport, or an authorized employee performing work for such an AMO, may approve (certify) a major repair or major alteration performed under this section if the work was performed in accordance with technical data approved by the Administrator.

Note: the question does not ask who can do the work, but rather who may approve the data. As the reference subparagraph states, "...performed in accordance with technical data approved by the FAA."

43. The overhaul of a system or component of an aircraft on a progressive inspection program is considered to be what type of inspection?

- A— Detailed.
- B— Routine.
- C— Component segment.

Detailed inspections consist of a thorough examination of the appliances, the aircraft, and its components and systems, with such disassembly as is necessary. For the purposes of this subparagraph, the overhaul of a component or system is considered to be a detailed inspection.

44. In accordance with 14 CFR Part 43, a component part that has been disassembled, cleaned, inspected, repaired as necessary, reassembled, and tested to the same tolerances and limits as a new item is classified as

- A— refurbished.
- B— remanufactured.
- C— rebuilt.

No person may describe, in any required maintenance entry or form, an aircraft, airframe, aircraft engine, propeller, appliance, or component part as being rebuilt unless it has been disassembled, cleaned, inspected, repaired as necessary, reassembled, and tested to the same tolerances and limits as a new item, using either new parts or used parts that either conform to new part tolerances and limits or to approved oversized or undersized dimensions.

45. In accordance with 14 CFR Part 43, an aircraft engine that has been disassembled, cleaned, inspected, repaired as necessary and reassembled, then tested in accordance with approved standards and technical data is classified as

- A— overhauled.
- B— remanufactured.
- C— rebuilt.

No person may describe in any required maintenance entry or form an aircraft, airframe, aircraft engine, propeller, appliance, or component part as being overhauled unless using methods, techniques, and practices acceptable to the Administrator, it has been disassembled, cleaned, inspected, repaired as necessary, and reassembled; and has been tested in accordance with approved standards and technical data, or in accordance with current standards and technical data acceptable to the Administrator, which have been developed and documented by the holder of the type certificate, supplemental type certificate, or a material, part, process, or appliance approval under §21.305.

46. What Part of the Federal Aviation Regulations contains the standards of performance under which the holder of an inspection authorization performs his/her activities?

- A— 14 CFR Part 43.
- B— 14 CFR Part 61.
- C— 14 CFR Part 91.

The standards of performance under which an IA performs are delineated in 14 CFR §43.13, "Performance rules (general)" and §43.15, "Additional performance rules for inspections."

Answers

42 [C] (021) 14 CFR Part 43
45 [A] (031) 14 CFR Part 43

43 [A] (031) 14 CFR Part 43
46 [A] (031) 14 CFR Part 43

44 [C] (031) 14 CFR Part 43

47. When performing an annual inspection of a helicopter main rotor transmission gearbox, the inspection will be accomplished in accordance with what data?

A— 14 CFR Part 43, Appendix B.

B— Maintenance manual or instructions for continued airworthiness.

C— Manufacturer's service bulletins.

Each person performing an inspection required by Part 91 on a rotorcraft shall inspect the following systems in accordance with the maintenance manual or Instructions for Continued Airworthiness of the manufacturer concerned:

- *The drive shafts or similar systems*
- *The main rotor transmission gear box for obvious defects*
- *The main rotor and center section (or the equivalent area)*
- *The auxiliary rotor on helicopters*

48. As specified by 14 CFR Part 43, which of the following inspections is NOT part of a progressive inspection program?

A— Initial.

B— Routine.

C— Segment.

Each person performing a progressive inspection shall, at the start of a progressive inspection system, inspect the aircraft completely. After this initial inspection, routine and detailed inspections must be conducted as prescribed in the progressive inspection schedule.

49. During the annual inspection, you note a minor repair was made to an airframe component by a repair station. The repair was recorded on a work order containing reference to acceptable data and the date of completion. What other information must be on the work order?

A— Signature and certificate number of person approving the repair.

B— A maintenance release signed by an authorized representative of the repair station.

C— A yellow tag signed by an authorized representative of the repair station.

Except as provided in 14 CFR §43.9(b) and (c), each person who maintains, performs preventive maintenance, rebuilds, or alters an aircraft, airframe, aircraft engine, propeller, appliance, or component part shall make an entry in the maintenance record of that equipment containing the following information:

- 1. A description (or reference to data acceptable to the Administrator) of work performed.*
- 2. The date of completion of the work performed.*
- 3. The name of the person performing the work if other than the person specified in paragraph (a)(4) of this section.*
- 4. If the work performed on the aircraft, airframe, aircraft engine, propeller, appliance, or component part has been performed satisfactorily, the signature, certificate number, and kind of certificate held by the person approving the work.*

50. What Part of Title 14 of the CFR referred to in §65.95(a)(1) contains the standards of performance under which a holder of an inspection authorization performs his or her activity?

A— Part 43.

B— Part 73.

C— Part 135.

14 CFR §43.13 specifies the general performance rules, and §43.15 gives additional performance rules for inspections.

51. Within Title 14 of the Code of Federal Regulations, the term "remanufactured"

A— means an engine has been overhauled to serviceable limits.

B— means an engine has been overhauled to standards that allow zero time to be established.

C— has no specific meaning.

The categories of maintenance in 14 CFR Part 43 and Part 91 include overhaul and rebuilding, but there is no reference to remanufacturing.

Answers

47 [B] (021) 14 CFR Part 43

50 [A] (017) 14 CFR Part 43

48 [C] (021) 14 CFR Part 43

51 [C] (031) 14 CFR Part 43 and 91

49 [A] (017) 14 CFR Part 43

52. Certain maintenance records are required to be retained until the work is repeated, superseded by other work or for 1 year. An exception to this rule occurs with maintenance records concerning what maintenance?

- A— Engine remanufacture records.
- B— 100-hour inspection.
- C— Altimeter test and inspection.

14 CFR §91.417(b) lists certain maintenance records that must be retained for one year or until the work is repeated or superseded by other work. There are exceptions to this specified in §91.417(a) and AC 43-9C (Maintenance Records). Records for inspection of altimeter systems and altitude reporting equipment must be retained for 24 months or until the work is repeated or superseded.

53. 14 CFR Part 43 requires persons performing maintenance to make entries in the Maintenance records. If the logbook entry is made per the requirements of §91.417, does this entry also meet the requirements of 14 CFR Part 43?

- A— No, it would not be sufficient.
- B— Yes, if it is for an inspection only.
- C— Yes, it would be sufficient for maintenance and inspections.

14 CFR §91.417(a) requires that the maintenance record include the date of completion of the work and the signature and certificate number of the person approving the aircraft for return to service.

14 CFR §43.9(a)(4) requires that in addition to the name and certificate number that the kind of certificate held by the person be specified.

54. 14 CFR Part 43 requires persons performing maintenance to make entries in the Maintenance records. If the logbook entry is made per the requirements of 14 CFR Part 43, does this entry also meet the requirements of 14 CFR §91.417?

- A— No, it would not be sufficient.
- B— Yes, if it is for an inspection only.
- C— Yes, it would be sufficient for maintenance and inspections.

14 CFR §91.417(a) requires that the maintenance record include the date of completion of the work and the signature and certificate number of the person approving the aircraft for return to service.

14 CFR §43.9(a)(4) requires that in addition to the name and certificate number that the kind of certificate held by the person be specified.

55. During the review of an aircraft's records while performing an annual inspection, you discover that the altimeter has not been inspected and tested within the preceding 24 calendar months. If the aircraft meets all other airworthiness requirements, as the inspection authorization, you should

- A— list the altimeter as a deficiency and report the aircraft as unairworthy.
- B— approve the aircraft for return to service after placarding the instrument "for day VFR usage only."
- C— approve the aircraft for return to service and advise the owner or operator that the aircraft should not be used under instrument flight rules.

No person may operate an airplane, or helicopter, in controlled airspace under IFR unless within the preceding 24 calendar months, each static pressure system, each altimeter instrument, and each automatic pressure altitude reporting system has been tested and inspected and found to comply with Appendix E of 14 CFR Part 43.

The aircraft can be approved for return to service, but the owner or operator should be advised that the aircraft should not be used for IFR flight in controlled airspace.

56. According to Title 14 of the CFR, an engine may be granted zero time by the manufacturer, if it has been

- A— newly overhauled.
- B— rebuilt.
- C— remanufactured.

The owner or operator may use a new maintenance record, without previous operating history, for an aircraft engine rebuilt by the manufacturer or by an agency approved by the manufacturer.

Answers

52 [C] (021) 14 CFR Part 91
55 [C] (017) 14 CFR Part 91

53 [A] (021) 14 CFR Part 43 and 91
56 [B] (031) 14 CFR Part 91

54 [C] (021) 14 CFR Part 43 and 91

57. You are performing an annual inspection on a small twin-engine airplane. The engine has been “zero-timed” by the manufacturer. What would you expect to find in the maintenance records?

- A— A new engine logbook.
- B— An appropriate entry by the manufacturer.
- C— Both A and B.

Each manufacturer or agency that grants zero time to an engine rebuilt by it shall enter in the new record a signed statement of the date the engine was rebuilt.

58. You are performing an annual inspection on a small twin-engine airplane. The engine has been “zero-timed” by the manufacturer. What would you expect to find in the maintenance records?

- A— A new engine logbook.
- B— A Form 337, work order, and a new engine logbook.
- C— An 8130-3 approval tag, maintenance release and a new engine logbook.

The owner or operator may use a new maintenance record, without previous operating history, for an aircraft engine rebuilt by the manufacturer or by an agency approved by the manufacturer. Neither a Form 337 nor an 8130-3 tag would be used.

59. You are performing an annual inspection on an aircraft where the engine has been “zero-timed” by the manufacturer. What does this indicate?

- A— That the parts have been inspected and found to meet the manufacturer’s new specifications (minimum and maximum dimensions).
- B— That the parts used are new parts.
- C— That the parts used meet the serviceable limits as listed in the manufacturer’s overhaul manual.

An engine that has been “zero timed” by the manufacturer has been rebuilt. A rebuilt engine is a used engine that has been completely disassembled, inspected, repaired as necessary, reassembled, tested, and approved in the same manner and to the same tolerances and limits as a new engine with either new or used parts. However, all parts used must conform to the production drawing tolerances and limits for new parts or be of approved oversized or undersized dimensions for a new engine.

60. When a normally-aspirated engine having spur-type reduction gearing is overhauled, an FAA Form 337 is

- A— completed and retained until the engine is again overhauled or removed from the airframe and replaced with a different engine.
- B— not required to be completed.
- C— completed and retained until the work is repeated or superseded by other work or for 1 year after the work is performed.

The overhaul of a normally-aspirated (not equipped with an integral supercharger) reciprocating engine having a spur-type propeller reduction gearing is considered to be a minor repair, and as such, it does not require the completion of an FAA Form 337.

61. Airframe alterations of the type found in 14 CFR Part 43, Appendix A, are major alterations except when listed in

- A— aircraft specifications issued by FAA.
- B— supplemental type certificates.
- C— manufacturers’ maintenance manuals.

Alterations of the following parts and alterations of the following types, when not listed in the aircraft specifications issued by the FAA, are airframe major alterations.

62. A duplicate copy of FAA Form 337 shall be forwarded to the local FAA Aircraft Registration Branch within how many hours after the work is inspected?

- A— 24.
- B— 48.
- C— 72.

Each person performing a major repair or major alteration shall execute FAA Form 337 at least in duplicate. Give a signed copy of that form to the aircraft owner, and forward a copy of that form to the FAA Aircraft Registration branch in Oklahoma City within 48 hours after the aircraft, airframe, aircraft engine, propeller, or appliance is approved for return to service.

Answers

57 [C] (021) 14 CFR Part 91
60 [B] (010) 14 CFR Part 43

58 [A] (017) 14 CFR Part 91
61 [A] (010) 14 CFR Part 43

59 [A] (021) 14 CFR Part 91
62 [B] (010) 14 CFR Part 43

63. During the inspection of a complete electrical system installation, you determine the field coils of the generator installed had been rewound. For this work to be acceptable, what kind of maintenance record would you expect to find?

- A— FAA Form 337.
- B— Repair station maintenance release.
- C— Either A or B.

Rewinding generator field coils is an appliance major repair. This may be recorded either with an FAA Form 337 or with a repair station maintenance release.

64. For which of the following would you expect to find a maintenance release?

- A— Straightening of steel blades.
- B— Repair of a propeller governor.
- C— Either A or B.

Both straightening steel propeller blades and repairing propeller governors are major repairs. They may be recorded with a repair station maintenance release.

64a. Which of the following would be considered a propeller major repair?

- A— Straightening of steel blades.
- B— Repair of a propeller governor.
- C— Both A and B.

14 CFR Part 43, Appendix A provides specific examples of major repairs and alterations to airframes, powerplants, propellers and appliances. Straightening of blades and repair of governors are both listed in the propeller section under major repairs.

64b. Which of the following would be considered a propeller major repair?

- A— Straightening of aluminum blades.
- B— Repair of a propeller governor.
- C— Both A and B.

14 CFR Part 43, Appendix A provides specific examples of major repairs and alterations to airframes, powerplants, propellers and appliances. Straightening of blades and repair of governors are both listed in the propeller section under major repairs.

64c. During the records review at annual inspection, for which of the following would you expect to find a repair station maintenance release?

1. Straightening of an aluminum propeller blade.
2. Repair of a propeller governor.

- A— 1.
- B— 2.
- C— Both 1 and 2.

14 CFR 43, Appendix A provides specific examples of major repairs and alterations to airframes, powerplants, propellers and appliances. Straightening of blades and repair of governors are both listed in the propeller section under major repairs.

65. If a repair station does a major repair and uses a maintenance release and an FAA Form 337, which of the following would require a statement for return to service?

- A— Maintenance release.
- B— Form 337.
- C— Both A and B.

For major repairs made in accordance with a manual or specifications acceptable to the administrator, a certificated repair station may in place of the Form 337 use the customer's work order and give the aircraft owner a maintenance release that includes a statement such as "The aircraft, airframe, aircraft engine, propeller, or appliance identified above was repaired and inspected in accordance with current Regulations of the Federal Aviation Administration and is approved for return to service. Pertinent details of the repair are on file at this repair station under Order No. _____. This must be dated and signed by an authorized representative of the repair station."

Answers

63 [C] (017) 14 CFR Part 43
64b [C] (021) 14 CFR Part 43

64 [C] (017) 14 CFR Part 43
64c [C] (032) 14 CFR Part 43

64a [C] (021) 14 CFR Part 43
65 [A] (019) 14 CFR Part 43

66. If a repair station does a major repair and uses a maintenance release and an FAA Form 337, which of the following would require a description of the work performed?

- A— Maintenance release.
- B— Form 337.
- C— Both A and B.

For major repairs made in accordance with a manual or specifications acceptable to the administrator, a certificated repair station may use a Form 337. The back of the form (Item 8) is used to describe the work performed.

67. A major repair has been completed and you as the inspecting IA have approved the aircraft for return to service. How will you distribute the copies of FAA Form 337?

- A— Both copies are returned to the person who performed the work.
- B— One copy is placed in the aircraft records and one copy is sent to the FAA District Office within 48 hours.
- C— One copy is given to the aircraft owner, one is sent to the FAA District Office within 48 hours and one copy is placed in your records.

An IA who has found a major alteration or major repair to be in conformity with FAA-approved data, should review the Form 337 for completeness and accuracy, then complete and sign item 7 (Approval for return to service) on both the original and the duplicate copies. Both copies are returned to the person who performed the work. This person will give a signed copy of the Form 337 to the aircraft owner and forward a copy to the FAA Registration Branch in Oklahoma City, OK within 48 hours after the aircraft is approved for return to service. The basic question here is not where the forms eventually go, but what responsibility the IA has in that distribution process. The reference given is very clear that this is the responsibility of the person doing the work.

68. 14 CFR Part 43 contains several appendixes that deal with maintenance, inspection, repair, alteration, and recordation. Which appendix specifies various alterations, the performance of which is a major alteration?

- A— Appendix A.
- B— Appendix B.
- C— Appendix C.

14 CFR Part 43, Appendix A lists a number of alterations that are identified as major alterations unless they are listed in the aircraft specifications.

69. 14 CFR Part 43 contains several appendixes that deal with maintenance, inspection, repair, alteration, and recordation. Which appendix provides information on the recording of major repairs and major alterations?

- A— Appendix A.
- B— Appendix B.
- C— Appendix C.

14 CFR Part 43, Appendix B describes the procedures for recording major repairs and major alterations.

70. During an annual inspection, in accordance with 14 CFR Part 43, Appendix D, the altimeter instrument must be inspected for

- A— marking.
- B— calibration.
- C— both of the above.

Each person performing an annual or 100-hour inspection shall inspect (where applicable) the following components of the cabin and cockpit group: "Instruments—for poor condition, mounting, marking, and (where practicable) improper operation."

71. The maintenance release used by a repair station to approve a major repair for return to service must be signed by whom?

- A— An inspection authorization.
- B— The A&P mechanic performing the work.
- C— An authorized representative of the repair station.

For major repairs made in accordance with a manual or specifications acceptable to the Administrator, a certificated repair station may give the aircraft owner a maintenance release signed by an authorized representative of the repair station.

Answers

66 [B] (019) 14 CFR Part 43
69 [B] (031) 14 CFR Part 43

67 [A] (019) 14 CFR Part 43
70 [A] (031) 14 CFR Part 43

68 [A] (031) 14 CFR Part 43
71 [C] (031) 14 CFR Part 43

72. Who has the primary responsibility for determining if a repair or alteration is major or minor?

- A— The FAA inspector in whose area of responsibility the work is accomplished.
- B— The person making the repair or alteration.
- C— The FAA regional engineer responsible for the area where the work is performed.

The person making the repair or alteration must determine whether it is major or minor by referring to 14 CFR Part 43 Appendix A. This determines the approval needed for the data used.

73. While reviewing the records of an aircraft during an annual inspection, a major repair by a certificated repair station was noted. The repair was recorded on a work order containing a maintenance release from the repair station. However, no FAA Form 337 could be found in the records. What action should you take as the holder of an inspection authorization?

- A— Contact the repair station and have them send you an FAA Form 337 for the repair.
- B— Inform the aircraft owner of the oversight and allow he or she to make arrangement for the form.
- C— No further action is necessary.

A major repair made by a certificated repair station may be recorded with an FAA Form 337 or by a maintenance release and a signed copy of the work order.

74. Which of the following would NOT be a propeller major repair?

- A— Replacement of tip fabric.
- B— Refinishing the blades.
- C— Shortening of blades on a wood propeller.

Refinishing the blades of a propeller is not considered to be a propeller major repair.

75. You have been asked to inspect and approve for return to service the relocation of a battery. The specific installation will follow the general guidelines of a Supplemental Type Certificate, with the exception that the battery is located 6 inches aft of the location shown on the Supplemental Type Certificate. The aft center-of-gravity limit is exceeded by 0.1 inch. Concerning the installation, which of the following is true?

- A— The deviation to the Supplemental Type Certificate is in itself a major alteration and will require additional approval.
- B— The installation could be approved for return-to-service if an inspection authorization inspects and approves the deviation.
- C— The exceeding of the aft center-of-gravity by 0.1 inch is shown to be negligible by AC 43.13-1B and may be approved as a minor alteration.

The deviation from the STC constitutes a major alteration. Since this alteration has not been done in accordance with the STC, it is not done according to approved data, and it has moved the CG out of its approved limits. Additional approval is required.

76. A repair station may use a maintenance release in place of an FAA Form 337 for which of the following work?

- A— Major repairs.
- B— Major alterations.
- C— Either A or B.

For major repairs made in accordance with a manual or specifications acceptable to the Administrator, a certificated repair station may, in place of FAA Form 337, use the customer's work order upon which the repair is recorded. The aircraft owner must be given a maintenance release signed by an authorized representative of the repair station.

Answers

72 [B] (031) 14 CFR Part 43
75 [A] (017) 14 CFR Part 43

73 [C] (017) 14 CFR Part 43
76 [A] (019) 14 CFR Part 43

74 [B] (019) 14 CFR Part 43

77. Following the installation of extended range fuel tanks in the baggage compartment of a Cessna model 310, you, as the approving authorized inspector, make the required record entries in the aircraft's records and complete the FAA Form 337. What is the distribution of the form?

- A— One copy is given to the aircraft owner and one is sent to the FAA Aircraft Registration Branch in Oklahoma City, OK within 48 hours.
- B— One copy is sent to the FAA Aircraft Registration Branch in Oklahoma City, OK within 48 hours, one copy is placed in the aircraft and one is given to the owner.
- C— One copy is placed in the aircraft, one copy is sent to the FAA Aircraft Registration Branch in Oklahoma City, OK within 48 hours, and one copy is placed in your records.

When extended range fuel tanks are installed in a passenger compartment or a baggage compartment, the person who performs the work and the person authorized to approve the work shall execute an FAA Form 337 in at least triplicate. One copy shall be placed aboard the aircraft as specified in §91.417. One copy is given to the owner, and the other copy is sent to the FAA Aircraft Registration Branch in Oklahoma City, OK within 48 hours after the aircraft is approved for return to service.

78. An aircraft has a cracked aileron control bracket. To restore the aircraft to an airworthy condition, a certificated airframe mechanic reinforces the bracket. This procedure would constitute a

- A— major repair.
- B— major alteration.
- C— minor repair.

Repairs to the following parts of an airframe and repairs of the following types, involving the strengthening, reinforcing, splicing, and manufacturing of primary structural members or their replacement, when replacement is by fabrication such as riveting or welding, are airframe major repairs.

79. When a repair station makes a major repair to an appliance, the repair may be recorded on a tag attached to the product or on the customer's work order. In either case, the document used must include what information?

- A— Name of part.
- B— Date of manufacture.
- C— Both A and B.

The Authorized Release Certificate or the maintenance release must include the name of the part, including the manufacturer's name, name of the part, model, and serial number (if any).

80. When a repair station makes a major repair to an appliance, the repair may be recorded on a tag attached to the product or on the customer's work order. In either case, the document used must include what information?

- A— Name of part.
- B— Manufacturer's name.
- C— Both A and B.

The Authorized Release Certificate or the maintenance release must include the name of the part, including the manufacturer's name, name of the part, model, and serial number (if any).

81. When a repair station makes a major repair to an appliance, the repair may be recorded on a tag attached to the product or on the customer's work order. In either case, the document used must include what information?

- A— Manufacturer's name.
- B— Date of manufacture.
- C— Both A and B.

The Authorized Release Certificate or the maintenance release must include the name of the part, including the manufacturer's name, name of the part, model, and serial number (if any).

Answers

77 [B] (017) 14 CFR Part 43
80 [C] (031) 14 CFR Part 43

78 [A] (019) 14 CFR Part 43
81 [A] (031) 14 CFR Part 43

79 [A] (031) 14 CFR Part 43

82. When a repair station makes a major repair to an appliance, the repair may be recorded on a tag attached to the product or on the customer's work order. In either case, the document used must include what information?

- A— Model.
- B— Manufacturer's name.
- C— Both A and B.

The Authorized Release Certificate or the customer's work order for a major repair to an appliance must include the manufacturer's name, name of the part, model, and serial number (if any).

82a. When performing a static pressure system test, as required by 14 CFR 91.411, the technician must

- A— determine that leakage is within established and allowable limits.
- B— ensure the system is free from entrapped moisture and restrictions.
- C— Both A and B.

Each person performing the altimeter system tests and inspections required by 14 CFR §91.411 shall comply with the following:

(a) Static pressure system:

- (1) Ensure freedom from entrapped moisture and restrictions.*
- (2) Determine that leakage is within the tolerances established in 14 CFR §23.1325 or §25.1325, whichever is applicable.*

82b. Which of the following readings is not an acceptable altitude readout for a barometric pressure reading of 25.842?

- A— 4,025 feet.
- B— 4,046 feet.
- C— 3,965 feet.

For an altitude of 4,000 feet, the equivalent pressure is 25.842. There is a tolerance of ± 35 feet. Therefore, the acceptable altitude reading ranges from 3,965 (minimum) to 4,035 (maximum).

82c. When conducting a case leak test at an indicated altitude of 18,000 feet, the leakage of the altimeter case shall not change the altimeter reading by more than

- A— ± 50 feet.
- B— ± 100 feet.
- C— Neither A nor B.

For a case leak: the leakage of the altimeter case, when the pressure within it corresponds to an altitude of 18,000 feet, shall not change the altimeter reading by more than the tolerance shown in Table II during an interval of 1 minute. The tolerance at 18,000 feet is ± 100 feet.

82d. Upon successful completion of an altimeter test, what information is to be recorded on the altimeter?

- A— The date of the inspection and the minimum altitude to which it was tested.
- B— The date of the inspection and the certificate number of the repair station performing the test.
- C— The date of the inspection and the maximum altitude to which it was tested.

The person performing the altimeter tests shall record on the altimeter the date and the maximum altitude to which the altimeter has been tested and the person approving the aircraft for return to service shall enter that data in the airplane log or other permanent record.

Answers

82 [C] (031) 14 CFR Part 43
82c [B] (031) 14 CFR Part 43

82a [C] (031) 14 CFR Part 43
82d [C] (031) 14 CFR Part 43

82b [B] (031) 14 CFR Part 43

14 CFR Part 45

Identification and Registration Marking

This part prescribes the requirements for identification of aircraft, and identification of aircraft engines and propellers that are manufactured under the terms of a type or production certificate; identification of certain replacement and modified parts produced for installation on type certificated products; and nationality and registration marking of U.S.-registered aircraft.

83. In conjunction with your performance of an annual inspection on an aircraft, you determine that the aircraft cannot be approved for return to service due to the fact that one of the following items is missing. Which item is it?

- A— Airworthiness certificate.
- B— Aircraft registration.
- C— Aircraft data plate.

Aircraft covered under 14 CFR §21.182 must be identified. The aircraft identification plate must be secured to the aircraft fuselage exterior so that it is legible to a person on the ground, and must be either adjacent to and aft of the rear-most entrance door, or on the fuselage surface near the tail surfaces.

83a. When conducting the ATC transponder test, the radio reply frequency for a Class 1A transponder is

- A— 1090 \pm 3 MHz.
- B— 1090 \pm 1 MHz.
- C— Neither A nor B.

For Classes 1A, 2A, 3A and 4 Mode S transponders, interrogate the transponders and verify that the reply frequency is 1090 \pm 1 MHz.

83b. When conducting the RF peak output power test, the minimum RF peak output for Class 1B and 2B transponders is

- A— 70 watts.
- B— 125 watts.
- C— 500 watts.

Verify the transponder RF output power is within specifications for the class of transponder. For Class 1B and 2B ATCRBS transponders, verify the minimum RF peak output power is at least 18.5 dbw (70 watts) and for classes 1B, 2B, and 3B Mode S transponders, verify the minimum output power is at least 18.5 dbw (70 watts).

84. Parts Manufacturer Approval (PMA) parts not having mandatory replacement times, inspection intervals, or related procedure specified in the airworthiness limitations section of a manufacturer's maintenance manual, or instructions for continued airworthiness, are NOT required to be marked with what information?

- A— The letters "FAA PMA."
- B— The trademark.
- C— The serial number.

Unless the part is too small to be marked in this way, all replacement or modification parts manufactured under a Parts Manufacturer Approval shall be permanently and legibly marked with the letters "FAA-PMA" and the name, trademark, or symbol of the holder of the PMA.

85. Parts Manufacturer Approval (PMA) parts are required to be marked with certain information among which is the name and model designation of each type certificated product on which the part is eligible for installation. When that information is so extensive it is impractical to mark on the part, a tag attached to the part or the part's container the information may be

- A— included on an FAA Form 337 to accompany the part and be completed at the time of installation.
- B— included in a readily available catalog.
- C— included in the original type certificate data sheet.

If the part is too small or is otherwise impractical to mark with all of the required information, a tag attached to the part or its container must include the information that could not be marked on the part. If this marking is too extensive to place on a tag, the tag may refer to a specific, readily available manual, or catalog for part eligibility information.

Answers

83 [C] (017) 14 CFR Part 45
84 [C] (017) 14 CFR Part 45

83a [B] (017) 14 CFR Part 43
85 [B] (017) 14 CFR Part 45

83b [A] (017) 14 CFR Part 43

86. Aircraft, aircraft engines, propellers, and propeller blades and hubs are required to be marked with certain identification data. An aircraft engine requires which of the following?

- (1) Builder's name.
- (2) Model designation.
- (3) Builder's serial number.
- (4) Type certificate number, if any.
- (5) Production certificate number, if any.
- (6) The established rating for aircraft engines.

A— 1, 3, 4, and 6.
 B— 1, 2, 3, and 6.
 C— All of the above.

The identification required on an aircraft engine by §45.11(a) and (b) shall include the following information:

1. *Builder's name*
2. *Model designation*
3. *Builder's serial number*
4. *Type certificate number, if any*
5. *Production certificate number, if any*
6. *For aircraft engines, the established rating*

87. Aircraft, aircraft engines, propellers, and propeller blades and hubs are required to be marked with certain identification data. A fixed-pitch propeller requires which of the following?

- (1) Builder's name.
- (2) Model designation.
- (3) Builder's serial number.
- (4) Type certificate number, if any.
- (5) Production certificate number, if any.
- (6) Part number (or equivalent).

A— 1, 3, 4, and 6.
 B— 1, 2, 3, and 6.
 C— 1, 2, 3, 4, and 5.

The identification required on a propeller by §45.11(a) and (b) shall include the following information:

1. *Builder's name*
2. *Model designation*
3. *Builder's serial number*
4. *Type certificate number, if any*
5. *Production certificate number, if any*

88. Aeronautical parts, for which a replacement time is specified in the airworthiness limitations section of the manufacturer's maintenance manual, shall be marked with which of the following information?

- (1) Builder's name.
- (2) Model designation.
- (3) Serial number (or equivalent).
- (4) Type certificate number, if any.
- (5) Production certificate number, if any.
- (6) Part number (or equivalent).

A— 3 and 6.
 B— 1, 2, and 3.
 C— All of the above.

Each person who produces a part for which a replacement time, inspection interval, or related procedure is specified in the Airworthiness Limitations section of a manufacturer's maintenance manual or Instructions for Continued Airworthiness shall permanently and legibly mark that component with a part number (or equivalent) and a serial number (or equivalent).

89. A small U.S.-registered aircraft built at least 30 years ago may display registration marks of what size?

- A— 2 inch.
 B— 12 inch.
 C— Either A or B.

A small U.S.-registered aircraft built at least 30 years ago or a U.S.-registered aircraft for which an experimental certificate has been issued under §§21.191(d) or 21.191(g) for operation as an exhibition aircraft or as an amateur-built aircraft which has the same external configuration as an aircraft built at least 30 years ago may be operated without displaying marks in accordance with §§45.21 and 45.23 through 45.33 (12-inch numbers) if it displays in accordance with §45.21(c) marks at least 2 inches high on each side of the fuselage or vertical tail surface consisting of the Roman capital letter "N" followed by the U.S. registration number of the aircraft.

Answers

86 [C] (017) 14 CFR Part 45
 89 [C] (017) 14 CFR Part 45

87 [C] (017) 14 CFR Part 45

88 [A] (017) 14 CFR Part 45

90. What are the height requirements for the registration marks of a 1975 Cessna model 177RG repainted in 1994?

- A— 2 inches.
- B— 3 inches.
- C— 12 inches.

The nationality and registration marks must be of equal height, and on fixed-wing aircraft must be at least 12 inches high in most cases. However, aircraft built at least 30 years ago can operate with 2-inch registration markings.

91. What regulation in 14 CFR sets forth the required identification markings on U.S.-registered civil aircraft?

- A— 14 CFR Part 43.
- B— 14 CFR Part 45.
- C— 14 CFR Part 47.

The required identification markings for U.S.-registered civil aircraft are found in 14 CFR Part 45, Subpart C.

91a. What size registration marks would an Experimental “exhibition” aircraft registered in 1994 have?

- A— 2-inch.
- B— 3-inch.
- C— 12-inch.

A small U.S.-registered aircraft built at least 30 years ago, or a U.S.-registered aircraft for which an experimental certificate has been issued under §§21.191(d) or 21.191(g) ... may be operated without displaying the marks in accordance with §45.21 and §45.23 through §45.33 if (1) it displays marks at least 2 inches high in accordance with §45.21(c).

91b. An amateur-built aircraft recently registered in the U.S. has a maximum speed of 180 mph. What size nationality and registration markings are required?

- A— 2-inch.
- B— 3-inch.
- C— 12-inch.

The required identification markings for U.S.-registered civil aircraft are found in 14 CFR Part 45, Subpart C; 3-inch marking is acceptable when the aircraft maximum cruising speed does not exceed 180 knots CAS.

91c. Aircraft registration and markings (N Numbers) on fixed wing aircraft must be 12 inches high except

- A— exhibition aircraft.
- B— corporate aircraft.
- C— commercial aircraft.

With the exception of exhibition aircraft, the nationality and registration marks must be equal height, and on fixed-wing aircraft, must be at least 12 inches high.

91d. Two-inch letters for registration marking are

- A— never allowed.
- B— allowed only on spherical balloons and powered parachutes.
- C— allowed on aircraft manufactured before January 1, 1983.

Nationality and registration marks must be at least 12 inches high in most cases. However, aircraft built at least 30 years ago can operate with 2-inch registration markings.

91e. The width of the letter or numeral in the registration number must be

- A— twice the height dimension.
- B— two thirds of the height.
- C— one half the height dimension (except for the number 1).

Nationality and registration marks must be two-thirds as wide as they are high, except the number “1” which must be one-sixth as wide as it is high, and the letter “M” and “W” which may be as wide as they are high.

Answers

90 [A] (017) 14 CFR Part 45
91b [B] (017) 14 CFR Part 45

91 [B] (017) 14 CFR Part 45
91c [A] (017) 14 CFR Part 45

91a [A] (017) 14 CFR Part 45
91d [C] (017) 14 CFR Part 45
91e [B] (017) 14 CFR Part 45

14 CFR Part 65

Certification: Airmen Other Than Flight Crewmembers

This part of 14 CFR prescribes the requirements for issuing the following certificates and associated ratings and the general operating rules for the holders of those certificates and ratings:

1. Air-traffic control-tower operators,
2. Aircraft dispatchers,
3. Mechanics,
4. Repairmen, and
5. Parachute riggers.

92. A person holding an inspection authorization (IA) may perform an annual inspection and approve aircraft for return to service. The IA may also supervise the performance of which of the following?

- A— Progressive inspection.
- B— Continuous airworthiness maintenance program.
- C— Both A and B.

The holder of an Inspection Authorization may 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 14 CFR Part 121) after a major repair or major alteration to it in accordance with Part 43, if the work was done in accordance with technical data approved by the Administrator; and perform an annual, or perform or supervise a progressive inspection according to §§43.13 and 43.15.

93. Which of the following is NOT a privilege of the holder of an inspection authorization?

- A— Performing annual inspections and approving for return to service.
- B— Approving major repairs and alterations for return to service when the work is done in accordance with data approved by the Administrator.
- C— Inspecting and approving an aircraft for return to service when the aircraft is on a continuous airworthiness program.

The holder of an Inspection Authorization may 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 14 CFR Part 121) after a major repair or major alteration to it in accordance with Part 43, if the work was done in accordance with technical data approved by the Administrator.

94. Select the statement which identifies one of the privileges of a mechanic who holds an inspection authorization.

- A— Inspect and approve for return to service any aircraft or related part or appliance after a major repair or major alteration, if the work was done in accordance with technical data approved by the Administrator.
- B— Perform or supervise an annual inspection.
- C— Inspect and approve for return to service a major repair to an aircraft maintained in accordance with an Approved Aircraft Inspection Program.

The holder of an Inspection Authorization may 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 14 CFR Part 121) after a major repair or major alteration to it in accordance with Part 43, if the work was done in accordance with technical data approved by the Administrator.

Answers

92 [A] (031) 14 CFR Part 65

93 [C] (031) 14 CFR Part 65

94 [A] (031) 14 CFR Part 65

95. Which of the following is the holder of an inspection authorization privileged to perform?

- A— An annual inspection, or perform or supervise a progressive inspection according to 14 CFR Sections 43.13 and 43.15.
- B— Return to service large aircraft maintained in accordance with a continuous airworthiness program under 14 CFR Part 121 after they have undergone major alterations.
- C— Perform or supervise an annual inspection of larger aircraft.

The holder of an inspection authorization may 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 14 CFR Part 121) after a major repair or major alteration to it in accordance with Part 43, if the work was done in accordance with technical data approved by the Administrator; and perform an annual, or perform or supervise a progressive inspection according to §§43.13 and 43.15.

96. The inspection authorization will cease to be effective when the holder no longer has

- A— available facilities.
- B— a current subscription to technical standards orders.
- C— a business location where he or she will exercise his or her inspection authority.

An inspection authorization ceases to be effective whenever any of the following occurs: the authorization is surrendered, suspended, or revoked, the holder no longer has a fixed base of operation, the holder no longer has the equipment, facilities, and inspection data required by §65.91(c)(3) and (4) for issuance of his authorization.

97. Before exercising the privileges of the authorization after changing his or her fixed base of operation, the holder of an inspection authorization must

- A— notify in writing the FAA district office in the area in which the new base is located of the change.
- B— not exercise the authority until both the FAA district offices, in the old and new districts, are notified in writing of the change.
- C— notify the FAA district office where the original authorization was held that he or she intends to relocate and the date of the intended move.

If the holder of an inspection authorization changes his fixed base of operation he may not exercise the privileges of the authorization until he has notified the FAA Flight Standards District Office or International Field Office for the area in which the new base is located, in writing, of the change.

98. The holder of an inspection authorization may NOT approve a major repair for return to service unless

- A— he or she has performed or supervised the performance of a similar repair for which he or she intends to inspect and return to service.
- B— the repair was done in accordance with technical data approved by the Administrator.
- C— the product was repaired or altered by a certificated mechanic holding both airframe and powerplant ratings.

The holder of an inspection authorization may 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 14 CFR Part 121) after a major repair or major alteration to it in accordance with Part 43, if the work was done in accordance with technical data approved by the Administrator.

99. What Part of 14 CFR referred to in 14 CFR Section 65.95(a)(1) contains the standards of performance under which a holder of an inspection authorization performs his or her activity?

- A— 14 CFR Part 43.
- B— 14 CFR Part 61.
- C— 14 CFR Part 135.

The holder of an inspection authorization may 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 14 CFR Part 121) after a major repair or major alteration to it in accordance with Part 43, if the work was done in accordance with technical data approved by the Administrator; and perform an annual, or perform or supervise a progressive inspection according to §§43.13 and 43.15.

Answers

95 [A] (031) 14 CFR Part 65
98 [B] (031) 14 CFR Part 65

96 [A] (031) 14 CFR Part 65
99 [A] (031) 14 CFR Part 65

97 [A] (031) 14 CFR Part 65

100. Under the privileges of an inspection authorization, the holder may approve for return to service any

- A— aircraft after a major repair, when the repair is accomplished using manufacturer's data.
- B— major repair to an aircraft, when the technical data has been approved by the person holding the inspection authorization and the holder of the inspection authorization is familiar with the type of aircraft being repaired.
- C— aircraft major alteration (with the exception of aircraft maintained under 14 CFR Part 121) when the work was accomplished in accordance with technical data approved by the Administrator.

The holder of an inspection authorization may 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 14 CFR Part 121) after a major repair or major alteration to it in accordance with Part 43, if the work was done in accordance with technical data approved by the Administrator.

101. Select the items that are within the privileges and limitations of the inspection authorization.

- (1) Perform a progressive inspection.
- (2) Supervise a progressive inspection.
- (3) Perform an annual inspection.
- (4) Supervise an annual inspection.

- A— 1, 3, and 4.
- B— 1, 2, and 3.
- C— 1, 2, and 4.

The holder of an inspection authorization may 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 14 CFR Part 121) after a major repair or major alteration to it in accordance with Part 43, if the work was done in accordance with technical data approved by the Administrator; and perform an annual, or perform or supervise a progressive inspection according to §§43.13 and 43.15.

102. Of the following certificated operators' aircraft, which may the holder of an inspection authorization NOT approve for return to service after a major repair or alteration?

- A— 14 CFR Part 125 operator.
- B— 14 CFR Part 121 operator.
- C— 14 CFR Part 133 operator.

The holder of an inspection authorization may 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 14 CFR Part 121) after a major repair or major alteration to it in accordance with Part 43, if the work was done in accordance with technical data approved by the Administrator.

103. When may the holder of an inspection authorization approve for return to service a major repair that is recorded on an FAA Form 337?

- A— Any time a repair is accomplished by a properly certificated and rated mechanic.
- B— When the repair has been described in detail on the reverse side of the FAA Form 337.
- C— Whenever a major repair is accomplished or supervised by an appropriately certificated and rated mechanic, and the data is approved by the Administrator.

The holder of an inspection authorization may 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 14 CFR Part 121) after a major repair or major alteration to it in accordance with Part 43, if the work was done in accordance with technical data approved by the Administrator.

Answers

100 [C] (031) 14 CFR Part 65
103 [C] (031) 14 CFR Part 65

101 [B] (031) 14 CFR Part 65

102 [B] (031) 14 CFR Part 65

104. A certificated mechanic holding an inspection authorization is NOT permitted to

- A— approve data used for the repair or alteration of aircraft.
- B— perform conformity inspections and approve for return to service.
- C— perform annual inspections and approve for return to service.

The holder of an inspection authorization may 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 14 CFR Part 121) after a major repair or major alteration to it in accordance with Part 43, if the work was done in accordance with technical data approved by the Administrator.

105. (1) Each inspection authorization expires annually on the anniversary date of issuance.

(2) Each inspection authorization expires on March 1 of each year.

Regarding the above statements, which one of the following is true?

- A— Only 1 is true.
- B— Only 2 is true.
- C— Neither 1 nor 2 is true.

Each inspection authorization expires on March 31 of every odd numbered year.

106. Inspection authorizations expire on

- A— December 31 of each year.
- B— March 31 of every odd numbered year.
- C— the last day of the month, 1 year from date of issue.

Each inspection authorization expires on March 31 of every odd numbered year.

107. The holder of an inspection authorization must

- A— have a fixed base of operations at which he/she can be contacted in person or by telephone during a normal working week.
- B— present evidence satisfactory to the Administrator that he/she has performed at least 4 annual inspections during the last 2 years.
- C— have some means of being contacted at the place where he or she will exercise the inspection authorization.

To be eligible for an inspection authorization, an applicant must have a fixed base of operations at which he/she may be located in person or by telephone during a normal working week, but it need not be the place where he/she will exercise his/her inspection authority.

108. What are the minimum activity requirements for renewal of an inspection authorization that has been in effect for a 1 year period?

- A— Four annual inspections and eight inspections of major repairs or major alterations; or four progressive inspections.
- B— Four annual inspections; or eight inspections of major repairs or major alterations; or one progressive inspection.
- C— One progressive inspection and eight inspections of major repairs or major alterations; or one annual inspection.

To be eligible for renewal of an inspection authorization for a 1-year period, an applicant must present evidence at renewal, during the month of March in odd-numbered years, at an FAA Flight Standards District Office or an International Field Office that the applicant still meets the requirements of §65.91(c)(1) through (4) for each year they have held the IA certificate. The applicant must show that during the current period the inspection authorization has been held, the applicant:

- 1. has performed at least one annual inspection for each 90 days that the applicant held the current authority; or*
- 2. has performed inspections of at least two major repairs or major alterations for each 90 days that the applicant held the current authority; or*
- 3. has performed or supervised and approved at least one progressive inspection in accordance with the standards prescribed by the Administrator.*

Answers

104 [A] (031) 14 CFR Part 65
107 [A] (031) 14 CFR Part 65

105 [C] (031) 14 CFR Part 65
108 [B] (031) 14 CFR Part 65

106 [B] (031) 14 CFR Part 65

109. What are the minimum requirements for renewal of an inspection authorization that has been in effect for 1 year?

- A— Three annual inspections.
- B— Two progressive inspections.
- C— Eight inspections of major repairs or major alterations.

To be eligible for renewal of an inspection authorization for a 1-year period, an applicant must present evidence at renewal, during the month of March in odd-numbered years, at an FAA Flight Standards District Office or an International Field Office that the applicant still meets the requirements of §65.91(c)(1) through (4) for each year they have held the IA certificate. The applicant must show that during the current period the inspection authorization has been held, the applicant:

1. *has performed at least one annual inspection for each 90 days that the applicant held the current authority; or*
2. *has performed inspections of at least two major repairs or major alterations for each 90 days that the applicant held the current authority; or*
3. *has performed or supervised and approved at least one progressive inspection in accordance with the standards prescribed by the Administrator.*

110. An inspection authorization may be renewed if the holder has performed or supervised, during the year of authorization,

- A— an annual inspection and four major repairs.
- B— a progressive inspection.
- C— six major repairs or major alterations within the last 6 months.

To be eligible for renewal of an inspection authorization for a 1-year period, an applicant must present evidence at renewal, during the month of March in odd-numbered years, at an FAA Flight Standards District Office or an International Field Office that the applicant still meets the requirements of §65.91(c)(1) through (4) for each year they have held the IA certificate. The applicant must show that during the current period the inspection authorization has been held, the applicant:

1. *has performed at least one annual inspection for each 90 days that the applicant held the current authority; or*
2. *has performed inspections of at least two major repairs or major alterations for each 90 days that the applicant held the current authority; or*
3. *has performed or supervised and approved at least one progressive inspection in accordance with the standards prescribed by the Administrator.*

111. The holder of an inspection authorization that has been in effect for less than 90 days needs to have performed

- A— at least one annual inspection.
- B— at least two major repairs or major alterations.
- C— neither of the above.

The holder of an inspection authorization that has been in effect for less than 90 days before the expiration date need not comply with paragraphs (a)(1) through (5) of this section.

112. The holder of an inspection authorization has changed his fixed base of operation. Who must be notified of the change before he may exercise the privileges of his authorization?

- A— FAA Flight Standards District Office or International Field Office for the area in which the old base is located.
- B— FAA Regional Office for the area in which the new base is located.
- C— FAA Flight Standards District Office or International Field Office for the area in which the new base is located.

If the holder of an inspection authorization changes his fixed base of operation, he may not exercise the privileges of the authorization until he has notified the FAA Flight Standards District Office or International Field Office for the area in which the new base is located, in writing, of the change.

Answers

109 [C] (031) 14 CFR Part 65
112 [C] (031) 14 CFR Part 65

110 [B] (031) 14 CFR Part 65

111 [C] (031) 14 CFR Part 65

113. The holder of an inspection authorization who changes his/her fixed base of operation would, before exercising the privileges of the authorization, do which of the following?

- A— Notify the FAA Flight Standards District Office, in the area in which the new base is located, in writing, of the change.
- B— Not exercise the authority until such time that both the FAA Flight Standards District Offices, in the old and new districts, are notified in writing of the change.
- C— Continue to operate using the old authorization until March 31 when the new authorization will be renewed.

If the holder of an inspection authorization changes his fixed base of operation, he may not exercise the privileges of the authorization until he has notified the FAA Flight Standards District Office or International Field Office for the area in which the new base is located, in writing, of the change.

114. What must the holder of inspection authorization do before exercising his/her privileges after changing his fixed base of operation?

- A— Apply, in writing, to the FAA Flight Standards District Office or FAA International Field Office in which the new fixed base of operations is located.
- B— Request a renewal of his/her inspection authorization from the FAA Flight Standards District Office or FAA International Field Office for the area in which the new base is located.
- C— Notify in writing the FAA Flight Standards District Office or FAA International Field Office for the area in which the new base is located.

If the holder of an inspection authorization changes his fixed base of operation, he may not exercise the privileges of the authorization until he has notified the FAA Flight Standards District Office or International Field Office for the area in which the new base is located, in writing, of the change.

115. Title 14 of the Code of Federal Regulations (CFR) Section 65.95 prescribes the

- A— privileges and limitations of an airframe mechanic.
- B— requirements for renewal of the inspection authorization.
- C— privileges and limitations of an inspection authorization.

14 CFR §65.95 contains the privileges and limitations for an inspection authorization.

116. Under the privileges and limitations of the Inspection Authorization you could

- A— overhaul and approve for return to service a float-type carburetor.
- B— exchange engines of different makes, per the type certificate data sheet, and approve for return to service.
- C— approve of return-to-service a major repair made in accordance with an Airworthiness Directive.

The holder of an inspection authorization may inspect and approve for return to service an aircraft or related part or appliance after a major repair or major alteration to it in accordance with Part 43 if the work was done in accordance with technical data approved by the Administrator.

The item in alternative A is a minor repair and in alternative B is a minor alteration. Neither of these requires an IA.

117. An inspection authorization ceases to be effective when the holder

- A— fails to meet the renewal activity requirements of 14 CFR Section 65.93 within a 90-day interval.
- B— no longer has a fixed base of operation.
- C— violates Title 14 of the CFR.

An inspection authorization ceases to be effective whenever any of the following occurs: the authorization is surrendered, suspended, or revoked, the holder no longer has a fixed base of operation, the holder no longer has the equipment, facilities, and inspection data required by §65.91(c)(3) and (4) for issuance of his authorization.

118. Title 14 of the CFR requires the inspection of all civil aircraft at specific intervals to determine the overall condition. An amateur-built aircraft with an experimental airworthiness certificate requires what type of inspection?

- A— Annual inspection.
- B— Condition inspection.
- C— Approved aircraft Inspection program.

The holder of a repairman certificate (experimental aircraft builder) may perform condition inspections on the aircraft constructed by the holder in accordance with the operating limitations of that aircraft.

Answers

113 [A] (031) 14 CFR Part 65
116 [C] (031) 14 CFR Part 65

114 [C] (031) 14 CFR Part 65
117 [B] (031) 14 CFR Part 65

115 [C] (031) 14 CFR Part 65
118 [B] (030) 14 CFR Part 65

14 CFR Part 91

General Operating and Flight Rules

This part of 14 CFR prescribes rules governing the operation of aircraft (other than moored balloons, kites, unmanned rockets, and unmanned free balloons, which are governed by Part 101, and ultralight vehicles operated in accordance with Part 103) within the United States.

119. Which of the following is required to be installed on an airplane manufactured after July 18, 1978?

- A— Shoulder harness for each front seat.
- B— An operable emergency locator beacon.
- C— An equipment list showing the minimum equipment required for aircraft operations under specified conditions.

For small civil airplanes manufactured after July 18, 1978, an approved shoulder harness for each front seat.

120. When would data in aircraft maintenance manuals be considered approved data?

- A— Aircraft maintenance manuals from the original manufacturer are always considered approved data.
- B— A manual or parts thereof become approved if the manufacturer assigns its approval in the manual.
- C— When a manual includes an airworthiness limitations section, that section is considered approved data.

No person may operate an aircraft for which a manufacturer's maintenance manual or instructions for continued airworthiness has been issued unless the mandatory replacement times, inspection intervals, and related procedures specified in that section or alternative inspection intervals and related procedures set forth in an operations specification approved by the Administrator under 14 CFR Parts 121 or 135 or in accordance with an inspection program approved under §91.409(e) have been complied with.

121. When, if ever, is the manufacturer's maintenance manual, or a section thereof, considered mandatory during an annual inspection?

- A— They are required when part of an approved inspection program.
- B— They are required if made mandatory by the type certificate data sheet.
- C— Maintenance manuals are optional if an equivalent procedure is used.

No person may operate an aircraft for which a manufacturer's maintenance manual or instructions for continued airworthiness has been issued unless the mandatory replacement times, inspection intervals, and related procedures specified in that section or alternative inspection intervals and related procedures set forth in an operations specification approved by the Administrator under 14 CFR Part 121 or 135 or in accordance with an inspection program approved under §91.409(e) have been complied with.

122. Following a major repair that might appreciably change the flight characteristics of an aircraft, other than the maintenance record entry required by 14 CFR Section 43.9, what must be entered in the aircraft records?

- A— The supplemental type certificate number.
- B— Record of flight test.
- C— FAA Form 337.

No person may carry any person (other than crewmembers) in an aircraft that has been maintained, rebuilt, or altered in a manner that may have appreciably changed its flight characteristics or substantially affected its operation in flight until an appropriately rated pilot with at least a private pilot certificate flies the aircraft, makes an operational check of the maintenance performed or alteration made, and logs the flight in the aircraft records.

123. A 14 CFR Part 91 operator of a turbine-powered rotorcraft may elect to use which of the following inspection provisions?

- A— An annual inspection.
- B— A current inspection program recommended by the manufacturer.
- C— Either A or B.

14 CFR §91.409 states that no person may operate a large airplane, turbojet multi-engine airplane, turbo-propeller-powered multi-engine airplane, or turbine-powered rotorcraft unless...it is inspected in accordance with an inspection program selected under the provisions of §91.409(f), except that the owner or operator

Continued

Answers

119 [A] (031) 14 CFR Part 91
122 [B] (017) 14 CFR Part 91

120 [C] (031) 14 CFR Part 91
123 [C] (017) 14 CFR Part 91

121 [A] (031) 14 CFR Part 91

of a turbine-powered rotorcraft may elect to use the inspections of §91.409(a), (b), (c) or (d) in lieu of an inspection option of §91.409(f).

Paragraph (a) specifies an annual inspection and paragraph (f)(3) specifies an inspection program recommended by the manufacturer.

123a. A Cessna 421B operated as a 14 CFR Part 91 airplane would have inspections conducted in accordance with

- A— 14 CFR Part 43, Appendix D.
- B— 14 CFR Part 91, §91.409 (Inspections).
- C— 14 CFR Part 43, §43.16 (Airworthiness Limitations).

Use the TCDS for the Cessna 421B aircraft (A7CE) to determine that this is a CAR 3 aircraft (maximum certificated takeoff weight is either 7,250 lbs or 7,450 lbs, depending on specific serial number). The aircraft is not turbine powered, but rather has two Continental GTSIO-520-H powerplants. Depending on the specific aircraft logbooks, any one of the answers could be acceptable. However, the best answer is the one referring to 91.409, the “umbrella regulation” under which Part 43 rules apply.

124. When may an authorized inspector (IA) perform an annual inspection on an aircraft?

- A— 12 calendar months from the day the last annual inspection was performed.
- B— The IA may perform an annual inspection anytime the owner requests it.
- C— The IA may only perform an annual inspection only during the month the inspection is due.

No person may operate an aircraft unless within the preceding 12 calendar months, it has had an annual inspection and has been approved for return to service by a person authorized by §43.7. There is no regulation that would prevent additional annual inspections being performed within the 12 calendar month period.

125. If an aircraft that has a separate record for airframe and engine receives a replacement engine between annual inspections, what action would be required?

- A— An inspection as required by the manufacturer and a maintenance record entry.
- B— A 100-hour inspection of the engine followed by a flight test.
- C— Only the engine portion of the annual inspection with an entry in the engine’s record.

The entire aircraft (this includes the engine) must have an annual inspection each 12 calendar months. If a replacement engine was installed between annual inspections it must be given the engine portion of the annual inspection and this information entered into the engine records.

126. A 14 CFR Part 91 operator of a turbine-powered rotorcraft may elect to use which of the following inspection provision?

- A— An annual inspection.
- B— An inspection program established by the operator and approved by the Administrator.
- C— Either A or B.

14 CFR §91.409(a)(1) allows the rotorcraft to be given an annual inspection. 14 CFR §91.409(c)(4) allows turbine-powered rotorcraft to be inspected according to an inspection program established by the operator and approved by the Administrator under the provisions of §91.409(f).

127. As the holder of an inspection authorization, you are approached by the owner of an aircraft that has recently been imported from a foreign country. The new owner wants to know when the aircraft will require an annual inspection. The aircraft’s records indicate that the aircraft has been maintained under a French inspection program and that the last complete inspection under that program was four months earlier. The record further indicates that the aircraft entered the U.S. two months ago and was issued a U.S. standard airworthiness certificate at that time. When will the annual inspection be due?

- A— In 8 calendar months.
- B— Immediately.
- C— In 10 calendar months.

14 CFR §91.409(a)(1), (2) states that no person may operate an aircraft unless, within the preceding 12 calendar months it has had an annual inspection in accordance with Part 43 and has been approved for return to service by a person authorized by §43.7, or has had an inspection for the issuance of an airworthiness certificate in accordance with 14 CFR Part 21.

The imported aircraft received a standard airworthiness certificate when it entered the U.S. two months ago and therefore it must have its next annual inspection in 10 calendar months.

Answers

123a [B] (021) 14 CFR Part 43 and 91
126 [C] (017) 14 CFR Part 91

124 [B] (031) 14 CFR Part 91
127 [C] (017) 14 CFR Part 91

125 [C] (017) 14 CFR Part 91

128. Title 14 of the Code of Federal Regulations allow aircraft established on certain inspection programs to exceed an inspection interval by 10 hours while en route to a place where the inspection can be done. Which of the following may exceed the inspection interval by 10 hours?

- A— An aircraft using a 100-hour inspection program.
- B— An aircraft using a progressive inspection program.
- C— Both A and B.

14 CFR §91.409 allows aircraft operating on either a 100-hour or progressive inspection program to exceed the 100-hour inspection interval by not more than 10 hours while en route to a place where the inspection can be done.

129. Which one of the following aircraft could require an annual inspection?

- A— A small single-engine turboprop with a restricted airworthiness certificate.
- B— A rotorcraft with a provisional airworthiness certificate.
- C— A small multiengine turboprop aircraft with a standard airworthiness certificate.

Exceptions to aircraft that are required to have an annual inspection are aircraft having a provisional airworthiness certificate and turbopropeller-powered multi-engine airplanes.

130. Each registered owner or operator of an aircraft using a progressive inspection must designate a person to supervise or conduct the inspection. Which of the following could perform those duties?

- A— A and P mechanic.
- B— Certificated airframe repair station.
- C— Both A and B.

Each registered owner or operator of an aircraft desiring to use a progressive inspection program must submit a written request to the FAA Flight Standards district office having jurisdiction over the area in which the applicant is located, and shall provide a certificated mechanic holding an inspection authorization, a certificated airframe repair station, or the manufacturer of the aircraft to supervise or conduct the progressive inspection.

131. Each registered owner or operator of an aircraft using a progressive inspection must designate a person to supervise or conduct the inspection. Which of the following could perform those duties?

- A— The aircraft manufacturer.
- B— Certificated airframe repair station.
- C— Both A and B.

Each registered owner or operator of an aircraft desiring to use a progressive inspection program must submit a written request to the FAA Flight Standards district office having jurisdiction over the area in which the applicant is located, and shall provide a certificated mechanic holding an inspection authorization, a certificated airframe repair station, or the manufacturer of the aircraft to supervise or conduct the progressive inspection.

132. The holder of an inspection authorization may supervise a progressive inspection on a turbine-powered rotorcraft weighing

- A— 7,000 lbs or less.
- B— 7,001 lbs or more.
- C— both A and B.

The owner or operator of a turbine-powered rotorcraft may elect to use the inspection provisions of §91.409(d), a progressive inspection. No weight limitation is specified.

132a. The holder of an inspection authorization may supervise a progressive inspection on a turbine-powered rotorcraft weighing

- A— 12,500 lbs or less.
- B— over 12,500 lbs.
- C— both A and B.

The owner or operator of a turbine-powered rotorcraft may elect to use the inspection provisions of §91.409(d), a progressive inspection. No weight limitation is specified.

Answers

128 [C] (017) 14 CFR Part 91
131 [C] (017) 14 CFR Part 91

129 [A] (017) 14 CFR Part 91
132 [C] (031) 14 CFR Part 91

130 [B] (017) 14 CFR Part 91
132a [C] (031) 14 CFR Part 91

133. Each registered owner or operator of a large airplane, turbojet multiengine airplane, turbopropeller powered multiengine airplane and turbine-powered rotorcraft operated under 14 CFR Part 91, must elect one of the inspection programs of 14 CFR Section 91.409(e). However, one of these operators may additionally select an annual inspection. Which operator is it?

- A— Large airplane.
- B— Multiengine turbopropeller airplane.
- C— Turbine rotorcraft.

14 CFR §91.409(e) excuses turbine-powered rotorcraft from the inspection requirements of other large aircraft (12,500 pounds or more) and may be inspected by an annual or progressive inspection.

134. Which one of the following aircraft could be maintained under an approved inspection program by the operator?

- A— 30 seat large airplane operating under Part 25.
- B— 12 seat multi-engine turbine airplane under commuter.
- C— Neither A or B.

14 CFR §91.409(e) lists numerous different types of aircraft and specifies that they must be inspected in accordance with one of the types of inspection programs stated in §91.409(f), but excludes large airplanes operated under 14 CFR Part 125 (which specifies airplanes having a seating capacity of 20 or more passengers, and not operating under 121 or 135).

A 12-seat multi-engine turbine aircraft operating under 14 CFR Part 135 (Commuter and On-Demand Operations) could be maintained under an approved inspection program by the operator.

134a. An Approved Aircraft Inspection Program could apply to which of the following?

1. Large 30-passenger turbine powered helicopter.
2. A 12-passenger commuter category multi-engine turboprop aircraft.

- A— Both 1 and 2.
- B— Only 1.
- C— Only 2.

The owner or operator of a turbine-powered rotorcraft may elect to use the inspection provisions of §91.409(d), a progressive inspection. No weight limitation is specified. Section 91.409(e) lists numerous different types of aircraft and specifies that they must be inspected in accordance with one of the types of inspection programs stated in §91.409(f).

A 12-seat multi-engine turbine aircraft operating under 14 CFR Part 135 (Commuter and On-Demand Operations) could be maintained under an approved inspection program by the operator (§135.411(a)).

135. When is an aircraft equipped for “Day VFR Only” operation, required to have its altimeter tested and inspected in accordance with 14 CFR Part 43, Appendix E? Compliance with Appendix E is

- A— not required.
- B— required each 12 calendar months.
- C— required each 24 calendar months.

14 CFR §91.411 requires that airplanes and helicopters operated in controlled airspace under IFR have their altimeter and altitude reporting equipment tested in accordance with 14 CFR Part 43, Appendix E. There is no such requirement for aircraft operated day VFR only.

136. How long must an FAA Form 337 for the overhaul of a reciprocating engine having a planetary propeller reduction gearing be retained?

- A— It is retained in the engine records until the engine is removed from the airframe and replaced with a different engine or for 24 calendar months whichever occurs first.
- B— It is retained as a permanent document in the engine records or until the engine is zero timed.
- C— It is retained until the work is repeated or superseded by other work or for 1 year after the work is performed.

Records of the maintenance, preventive maintenance, and alteration and records of the 100-hour, annual, progressive, and other required or approved inspections as appropriate for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft must be retained until the work is repeated or superseded by other work or for 1 year after the work is performed.

Answers

133 [C] (031) 14 CFR Part 91
135 [A] (031) 14 CFR Part 91

134 [B] (031) 14 CFR Part 91 and 135
136 [C] (031) 14 CFR Part 91

134a [A] (031) 14 CFR Part 91, 125,
and 135

137. How long must an FAA Form 337 for the overhaul of a reciprocating engine having an integral supercharger be retained?

- A— It is retained until the engine is removed from the airframe and replaced with a different engine.
- B— It is retained until the work is repeated or superseded by other work or for 1 year after the work is performed.
- C— It is retained as a permanent document in the engine records or until the engine is zero timed.

Records of the maintenance, preventive maintenance, and alteration and records of the 100-hour, annual, progressive, and other required or approved inspections as appropriate for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft must be retained until the work is repeated or superseded by other work or for 1 year after the work is performed.

138. While reviewing an aircraft's records during an annual inspection, you notice three different FAA Forms 337 for the overhaul of the aircraft's engine. How long must these major repair records be retained?

These records shall be retained

- A— and transferred with the engine.
- B— for a period of 2 years after the work was performed.
- C— for a period of 1 year from the date of completion.

Records of the maintenance, preventive maintenance, and alteration and records of the 100-hour, annual, progressive, and other required or approved inspections as appropriate for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft must be retained until the work is repeated or superseded by other work or for 1 year after the work is performed.

139. Federal Aviation Regulations require certain information to be included in an aircraft's maintenance records for airworthiness directive compliance. Which of the following information would be part of a required record entry for the airworthiness directive?

- A— Amendment number.
- B— Serial number of aircraft.
- C— Revision date.

The information regarding ADs that are required in the aircraft maintenance records is: The current status of applicable airworthiness directives (AD) including, for each the method of compliance, the AD number, and revision date. If the AD involves recurring action, the time and date when the next action is required.

140. The regulations require each registered owner or operator to maintain a record of Airworthiness Directives (AD)

- A— listing all ADs pertinent to his or her model.
- B— in a logbook for each airframe, engine, propeller, or rotor.
- C— listing status of applicable ADs.

Records containing the following information shall be retained and transferred with the aircraft at the time the aircraft is sold.

1. *The total time in service of each airframe, each engine, each propeller, and each rotor.*
2. *The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.*
3. *The time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis.*
4. *The current inspection status of the aircraft, including the time since the last inspection required by the inspection program under which the aircraft and its appliances are maintained.*
5. *The current status of applicable airworthiness directives (AD) including, for each the method of compliance, the AD number, and revision date. If the AD involves recurring action, the time and date when the next action is required.*
6. *Copies of the forms prescribed by §43.9(a) for each major alteration to the airframe and currently installed engines, rotors, propellers, and appliances.*

141. A rebuilt aircraft engine may be granted zero time by

- A— the manufacturer.
- B— a certified powerplant mechanic.
- C— an A and P mechanic who holds an inspection authorization.

The owner or operator may use a new maintenance record, without previous operating history, for an aircraft engine rebuilt by the manufacturer or by an agency approved by the manufacturer.

Answers

137 [B] (031) 14 CFR Part 91
140 [C] (031) 14 CFR Part 91

138 [C] (031) 14 CFR Part 91
141 [A] (031) 14 CFR Part 91

139 [C] (031) 14 CFR Part 91

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

This regulation prescribes rules governing the operations of U.S.-registered civil airplanes which have a seating configuration of 20 or more passengers, or a maximum payload capacity of 6,000 pounds or more when common carriage is not involved.

142. Who is responsible for performing maintenance, preventive maintenance, and alteration of an aircraft operating under 14 CFR Part 125?

- A— The registered owner of the aircraft.
- B— The shop performing the maintenance.
- C— The holder of the Part 125 certificate.

14 CFR §125.243 states that the certificate holder is primarily responsible for airworthiness, and the performance of maintenance, preventive maintenance, and alteration in accordance with applicable regulations and the certificate holder's manual.

14 CFR Part 135

Operating Requirements: Commuter and On-Demand Operations

This part of the Federal Regulations prescribes rules governing the commuter or on-demand operations that:

- require an Air Carrier Certificate or Operating Certificate under 14 CFR Part 119,
- are used by a certificate holder conducting operations under this part including the maintenance, preventative maintenance and alteration of an aircraft,
- are involved in the transportation of mail by an aircraft conducted under a postal service contract awarded under 39 U.S.C. 5402c,
- are employed or used by an air carrier or commercial operator under this part to perform training, qualification, or evaluation functions under an Advanced Qualification Program under Subpart Y of 14 CFR Part 121, or
- who conduct nonstop sightseeing flights for compensation or hire that begin and end at the same airport, and are conducted within a 25 statute mile radius of that airport.

143. What is the smallest aircraft operating under 14 CFR Part 135 that is required to have a cockpit voice recorder?

Multiengine, turbine-powered airplane or rotorcraft:

- A— having a passenger seating configuration of six or more and for which two pilots are required.
- B— having a passenger seating configuration of nine or more.
- C— having a passenger seating configuration of 20 or more.

No person may operate a multi-engine, turbine-powered airplane or rotorcraft having a passenger seating configuration of six or more and for which two pilots are required by certification or operating rules unless it is equipped with an approved cockpit voice recorder.

Answers

142 [C] (031) 14 CFR Part 125

143 [A] (031) 14 CFR Part 135

144. Aircraft operating under 14 CFR Part 135 with 9 seats or less are maintained in accordance with Parts 43 and 91. What type of inspection would be required for the aircraft?

- A— An inspection in accordance with Section 91.409.
- B— An inspection as required by the operations maintenance manual specifications.
- C— An inspection in accordance with Part 43, Appendix D.

14 CFR §135.411(a) states that aircraft type certificated for a passenger seating configuration, excluding any pilot seat, of nine seats or less, shall be maintained under Parts 91 and 43 of 14 CFR.

14 CFR §91.409(a)(1) states that except as provided in paragraph (c) of this section, no person may operate an aircraft unless, within the preceding 12 calendar months, it has had an annual inspection in accordance with Part 43 of 14 CFR.

Paragraph (c) and 14 CFR §135.411(a)(1) states that an approved aircraft inspection program “may” be used under §135.419.

145. Aircraft operating under 14 CFR Part 135 that are type certificated for a passenger seating configuration, excluding any pilot seat, of nine seats or less, shall be maintained under what two parts of 14 CFR as well as the applicable sections of Part 135?

- A— Part 91 and 121.
- B— Part 43 and 91.
- C— Part 91 and 125.

Aircraft that are type certificated for a passenger seating configuration, excluding any pilot seat, of nine seats or less, shall be maintained under Parts 91 and 43 of this chapter and §§135.415, 135.417, and 135.421.

146. For aircraft operating under 14 CFR Part 135, the approved maintenance program is determined by the number of seats. For aircraft that can be maintained under 14 CFR Parts 91 and 43 maintenance programs, the number of seats are limited to

- A— 9 or less.
- B— 20 or less.
- C— 50 or less.

Aircraft that are type certificated for a passenger seating configuration, excluding any pilot seat, of nine seats or less, shall be maintained under 14 CFR Parts 91 and 43.

147. An owner brings you his light twin-engine airplane operating under Part 135. Where would you find the appropriate instructions for inspecting the aircraft?

- A— Flight Manual
- B— Operations Specifications
- C— 14 CFR Part 43, Appendix D

When the Administrator finds that the aircraft inspections required or allowed under 14 CFR Part 91 are not adequate to meet this part, or upon application by a certificate holder, the Administrator may amend the certificate holder’s operations specifications under §135.17 to require or allow an approved aircraft inspection program for any make and model aircraft of which the certificate holder has exclusive use of at least one aircraft.

148. Who is primarily responsible for the airworthiness of an aircraft that is operated under 14 CFR Part 135?

- A— The registered owner of the aircraft.
- B— The pilot of the aircraft.
- C— The certificate holder of the aircraft.

Each certificate holder is primarily responsible for the airworthiness of its aircraft, including airframes, aircraft engines, propellers, rotors, appliances, and parts and shall have its aircraft maintained under this chapter, and shall have defects repaired between required maintenance under 14 CFR Part 43.

149. Which special inspection provision(s) must be included for single-engine aircraft operated under 14 CFR Part 135 for passenger carrying IFR operations?

- A— Engine trend monitoring.
- B— Engine oil analysis.
- C— Both of the above.

For each single engine aircraft to be used in passenger-carrying IFR operations, each certificate holder must incorporate into its maintenance program the manufacturer’s recommended engine trend monitoring program, which includes an oil analysis.

Answers

144 [A] (017) 14 CFR Part 135
147 [B] (017) 14 CFR Part 135

145 [B] (017) 14 CFR Part 135
148 [C] (017) 14 CFR Part 135

146 [A] (017) 14 CFR Part 135
149 [C] (017) 14 CFR Part 135

150. The controlling document for the maintenance and inspection of aircraft operated under 14 CFR Part 135 is

- A— the operator’s FAA-approved manual.
- B— AC 43.13-1B and -2B.
- C— the aircraft manufacturer’s service manual.

Each certificate holder shall have an inspection program and a program covering other maintenance, preventive maintenance, and alterations, that ensures that maintenance, preventive maintenance, and alterations performed by it, or by any other persons, are performed under the certificate holder’s manual.

151. In the maintenance portion of a 14 CFR Part 135 operation the relationship between the persons performing the maintenance and the inspection of the maintenance must be closely monitored. Which statement is true?

- A— The person performing the maintenance is responsible for the inspection.
- B— The person performing the maintenance is not allowed to inspect it.
- C— The inspector is under the authority of the person performing the maintenance.

The maintenance organization of a Part 135 operator must contain instructions to prevent any person who performs any item of work from performing any required inspection of that work.

14 CFR Part 183

Representatives of the Administrator

This part of 14 CFR describes the requirements for designating private persons to act as representatives of the Administrator in examining, inspecting, and testing persons and aircraft for the purpose of issuing airman and aircraft certificates.

152. Certain persons are designated by the Administrator to represent the FAA in developing and approving technical data for alteration and repair of U.S.-certificated aircraft. These persons are known as

- A— designated aircraft maintenance inspectors.
- B— designated engineering representatives.
- C— designated airworthiness representatives.

Designated Engineering Representatives (DERs) are designated by the FAA to approve technical data for alteration and repair of U.S.-certificated aircraft.

152a. A major repair is required in the fuselage of a corporate aircraft. A structural engineer has created a drawing of how to repair the damage. The technician should

- A— fix the aircraft per the drawing and make a logbook entry.
- B— send the drawing to a structural Designated Engineering Representative (FAA DER) for approval and then complete a 337 for FAA field approval.
- C— request an FAA Field approval from the local FSDO before doing any work on the aircraft.

A major repair requires approved data for maintenance activity to correct it. The engineering by itself is not approved data. If it is sent to a DER, that approval is all that is necessary for the repair to be completed. If the technician chooses to, they may request the FSDO field approval, which does not require a DER drawing approval.

152b. Title 14 of the Code of Federal Regulations, Part 183 allows the Federal Aviation Administration to designate certain persons to develop and approve technical data for alteration and repair of U.S. certificated aircraft. These persons are known as the

- A— Designated Engineering Representative.
- B— Designated Airworthiness Representative.
- C— Designated aircraft maintenance inspectors.

DERs are designated by the FAA to approve technical data for alteration and repair of U.S.-certificated aircraft.

Answers

150 [A] (017) 14 CFR Part 135
152a [C] (031) AC 43.9-1

151 [B] (017) 14 CFR Part 135
152b [A] (031) 14 CFR §183.29

152 [B] (031) 14 CFR Part 183

Chapter 4

Airworthiness Directives (ADs)

14 CFR Part 39: <i>Airworthiness Directives</i>	4-3
Categories of Airworthiness Directives	4-3
<i>Notice of Proposed Rulemaking (NPRM)</i>	4-3
<i>Immediately Adopted Rule</i>	4-3
<i>Emergency ADs</i>	4-3
<i>ADs Issued to Other than Aircraft</i>	4-3
Publication of Airworthiness Directives	4-4
<i>Applicability of ADs</i>	4-4
Construction of an Airworthiness Directive	4-4
<i>The AD Number</i>	4-4
<i>The Amendment Number</i>	4-5
<i>Applicability Statement</i>	4-5
<i>Compliance Time or Date</i>	4-5
<i>Effective Date</i>	4-5
<i>Compliance Statement</i>	4-5
<i>Alternate Method of Compliance (AMOC)</i>	4-5
Sample Test Questions	4-6
Sample Airworthiness Directives	4-11
<i>80-10-02 Messerschmitt-Bolkow-Blohm</i>	4-11
<i>80-15-12 Costruzioni Aeronautiche Giovanni Agusta</i>	4-12
<i>81-23-01 R1 Beech</i>	4-13
<i>82-06-12 Air Tractor</i>	4-16
<i>82-11-05 Bendix</i>	4-17
<i>90-01-06 Enstrom Helicopter Corporation</i>	4-18
<i>90-08-14 Beech</i>	4-19
<i>93-24-03 Beech Aircraft Corporation</i>	4-21
<i>95-13-08 Pratt & Whitney Canada</i>	4-23

14 CFR Part 39

Airworthiness Directives

This part of 14 CFR prescribes airworthiness directives (AD) that apply to aircraft, aircraft engines, propellers, or appliances (hereinafter referred to in this part as “products”) when an unsafe condition exists in a product, and that condition is likely to exist or develop in another product of the same type design.

Included in this chapter are several sample ADs (starting on Page 4-11) to use when studying the test questions on this topic.

Categories of Airworthiness Directives

Airworthiness Directives are Federal Aviation Regulations that are published in the *Federal Register* as amendments to 14 CFR Part 39. They apply to aircraft, aircraft engines, propellers, or appliances, which are referred to as “products,” and are issued when an unsafe condition is found to exist in a product, and when that condition is likely to exist or develop in another product of the same type design. ADs are published in the following four categories.

Notice of Proposed Rulemaking (NPRM)

An NPRM is issued and published in the *Federal Register* when an unsafe condition is discovered in a product. Interested persons are invited to comment on the NPRM by submitting such written data, views, or arguments as they may desire. The comment period is usually 60 days, and proposals contained in the notice may be changed or withdrawn in light of the comments received. When an NPRM is adopted as a final rule, it is published in the *Federal Register*, printed, and distributed by first-class mail to the registered owners of the product affected.

Immediately Adopted Rule

ADs of an urgent nature are adopted without the NPRM process, as immediately adopted rules. These ADs usually become effective less than 30 days after publication in the *Federal Register* and are distributed to the registered owners of the product affected.

Emergency ADs

Emergency ADs are issued when immediate corrective action is required. Emergency ADs are distributed to the registered owners of the product affected by telegram, priority mail, or other electronic methods and are effective upon receipt. Emergency ADs are published in the *Federal Register* as soon as possible after the initial distribution.

ADs Issued to Other than Aircraft

ADs may be issued which apply to engines, propellers, or appliances installed on multiple makes or models of aircraft. When the product can be identified as being installed on a specific make or model aircraft, AD distribution is made to the registered owners of those aircraft. However, there are times when a determination cannot be made, and direct distribution to the registered owner is impossible. For this reason, aircraft owners and operators are urged to subscribe to the Summary of Airworthiness Directives which contain all previously published ADs and a biweekly supplemental service. To access AD notes and other regulatory data, you may also use the internet. The most comprehensive site is:

www.airweb.FAA.gov/rgl

Publication of Airworthiness Directives

Individual ADs are distributed to the owners of the affected products and are also made available to maintenance personnel by subscription from the FAA, as described in AC 00-44 *Status of the Federal Aviation Regulations*.

Printed ADs are published in two volumes, with each volume containing two books:

- **Volume I**, Book 1 contains ADs, applicable to small aircraft and all rotorcraft, that were issued between 1943 and 1979 that are still in effect.
- **Volume I**, Book 2 contains all the ADs, applicable to small aircraft and all rotorcraft, that were issued between 1980 and the present.
- **Volume II** contains two books that have the same breakdown of ADs as in Volume I, except these ADs relate to large aircraft, those with a maximum certificated takeoff weight of more than 12,500 pounds.

The Summary of AD Notes contains two indexes; one is alphabetical by the manufacturer of the product, and the other is a numerical listing of all ADs from the oldest to the most recent. The indexes are updated every six months.

New and revised ADs are compiled by the FAA every two weeks and mailed out to the subscribers of the service in the “Biweekly Listings.”

Applicability of ADs

Each AD contains an applicability statement specifying the product (aircraft, aircraft engine, propeller, or appliance) to which it applies. Some aircraft owners and operators mistakenly assume that ADs do not apply to aircraft with other than standard airworthiness certificates, i.e., special airworthiness certificates in the restricted, limited, or experimental category. Unless specifically stated, ADs apply to the make and model set forth in the applicability statement regardless of the classification or category of the airworthiness certificate issued for the aircraft. Type certificate and airworthiness certification information are used to identify the product affected. Limitations may be placed on the applicability by specifying the serial number or number series to which the AD is applicable. When there is no reference to serial numbers, all serial numbers are affected.

Construction of an Airworthiness Directive

Airworthiness Directives are all written to a standard format. All contain the AD number, the amendment number, an applicability statement, a required compliance time or date, the effective date and a compliance statement.

The AD Number

Historically, AD notes were identified by a six-digit number such as 90-08-14. The first two digits (90) identify the year the AD was issued. The second two digits (08) identify the biweekly period in which the AD was issued. This is the fifteenth or sixteenth week of the year. The last two digits (14) is the sequential number of the AD issued during this time period. This was the fourteenth AD issued in the eighth biweekly period. Currently, AD notes are identified by an eight-digit number such as 2004-22-08. This change started with AD notes issued in the year 2000.