

# TABLE OF CONTENTS

## Introduction to Test Taking, by FAA Learning Statement Codes - General

### Chapter 01 - Safety, Ground Operations, and Servicing

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 02 - Regulations, Maintenance Forms, Records, and Publications

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 03 - Mathematics in Aviation Maintenance

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 04 - Aircraft Drawings

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 05 - Physics for Aviation

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 06 - Aircraft Weight and Balance

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 07 - Aircraft Materials, Hardware, and Processes

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 08 - Cleaning and Corrosion Control

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 09 - Fluid Lines and Fittings

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 10 - Inspection Concepts and Techniques

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 11 - Hand Tools and Measuring Devices

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 12 - Fundamentals of Electricity and Electronics

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 13 - Mechanic Privileges and Limitations

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### Chapter 14 - Human Factors

Written questions, answers, explanations, oral question samples, practical test and sample projects.

### FAA-S-8081-26A Change 1 - Practical Test Standards

ISBN: 978-1951275129



# HOW TO USE THIS TEST GUIDE

This book is designed to help you pass your FAA knowledge test. But, even more important, it is designed to help reinforce your understanding of the subject which you have been studying in the classroom or with your textbooks and other tools. Rather than this being the first book you pick up, it should be the last. When you take that route, you will find the questions in this book both easy and an excellent reinforcement to your studies.

The process we suggest is: Learn first from the textbooks and your instructors. When you are comfortable with a subject, and can see problems from different sides, then it is time to prepare for the test. This Test Guide, if properly used, will serve as your proof that you know what you need to know or if a subject requires further study. If so, the explanation with each question may refresh your understanding, or the textbook reference given will point you to the right place for review.

## **WHERE THE QUESTIONS COME FROM:**

In 2011, FAA made the decision to stop publishing actual test questions. Previous test guides, where one could memorize questions are no more. Questions in this and other current FAA test guides now contain only examples of the type of question you will see on your actual FAA test.

Questions in this book come from two sources. First are previous FAA written questions which remain relevant to the curricula covered in the FAA 8083 Handbooks. Second are new questions written by Aircraft Technical Book Company and its team of authors to cover topics in the 8083s (the FAA required curricula) for which previous FAA samples did not exist.

Should you "make sure" and buy other test guides as well? In one sense it can't hurt. After all, our question on any particular topic may have different wording or may approach that topic slightly differently than another's. However, all will be different from the actual test questions, and different too from those asked by an examiner, or more important; by an employer.

So your first job is to learn in the classroom, study the textbooks, and understand the subject. With that, all questions, no matter how they are written will be easy and obvious, so making your career in aerospace rich and rewarding. Remember, its not the quick way; its the right way.

## **AIRCRAFT TECHNICAL BOOK COMPANY – GENERAL TEST GUIDE PEER REVIEW TEAM:**

We would like to thank the following schools and instructors for their assistance writing and reviewing the sample questions and explanations for this guide.

### Review Team

Tulsa Tech - Jeffery Lowe  
Tulsa Tech - John Rowell  
Lively Tech - Joseph Garcia  
Pickens Community College - Dave Pickens  
Aviation Education Consultants - Harry Whitehead  
Greenville Technical College - Carl Washburn

Blue Ridge Community College - Fred Dyen  
Univ. of Alaska; Fairbanks - Kevin Alexander  
College of the Albemarle - Elton Stone  
Florida State CC; Jacksonville - David Dagenais  
Embry Riddle Aeronautical Univ - Chuck Horning  
Sinclair Community College - Don Stark

# INTRODUCTION TO FAA TESTING

## Excerpts from FAA-G-8082-3A

### KNOWLEDGE TEST ELIGIBILITY REQUIREMENTS

The general qualifications for an aviation maintenance technician certificate require a combination of experience, knowledge, and skill. If you are pursuing an aviation maintenance technician certificate with airframe and powerplant ratings, you should review the appropriate sections of Title 14 of the Code of Federal Regulations (14 CFR) part 65 for detailed information pertaining to eligibility requirements. Further information may be obtained from the nearest Flight Standards District Office (FSDO). Before taking the certification knowledge and practical tests, you must meet the eligibility requirements. The determination of eligibility of applicants for the general, airframe, and powerplant tests is made on the basis of one of the following options:

1. Civil and/or military experience. (See 14 CFR Part 65, Certification: Airmen Other Than Flight Crewmembers, Subpart A—General and Subpart D— Mechanics.) If you believe you are qualified to exercise this option, you must have your experience evaluated and certified by an FAA aviation safety inspector (airworthiness). If the inspector determines you have the required experience, two FAA Forms 8610-2, Airman Certificate and/or Rating Application, are completed. These forms are issued, and **MUST** be presented along with appropriate identification to take the corresponding knowledge tests. Your eligibility to test does not expire.
2. Graduation from an FAA-certificated aviation maintenance technician school (AMTS). Depending upon the testing facility affiliation, a graduation certificate, certificate of completion, or an FAA Form 8610-2, Airman Certificate and/or Rating Application (properly endorsed), is required, along with proper identification.

If you are taking the tests at a computer testing center and the practical testing is administered by a designated mechanic examiner (DME), and both are affiliated with the AMTS, a copy of the graduation certificate or certificate of completion (and proper identification) may be all you are required to present. In this case, the school, the testing center, the DME, and the local FSDO will all be involved and know what authorization is needed. On the other hand, if either or both the testing center and the DME are not affiliated with the AMTS, then FAA Form 8610-2 is required.

### KNOWLEDGE AREAS INCLUDED ON THE TESTS

Aviation maintenance technician tests are comprehensive because they must test your knowledge in many subject areas. The subject areas for the tests are the same as the required AMTS curriculum subjects listed in 14 CFR part 147, Aviation Maintenance Technician Schools, appendices B, C, and D. However, the subject area titled "Unducted Fans" (in appendix D) is not a tested subject at this time. The terms used in 14 CFR part 147, appendices B, C, and D, are defined in 14 CFR part 147, appendix A.

### DESCRIPTIONS OF THE TESTS

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

1. The Aviation Maintenance Technician - General Test, contains 60 questions and you are allowed 2 hours to complete the test.
2. The Aviation Maintenance Technician—Airframe and Aviation Maintenance Technician— Powerplant Tests, contain 100 questions each and you are allowed 2 hours to complete each test.

**The minimum passing score is 70 percent.**

### TEST REGISTRATION

The first step in taking a knowledge test is the registration process. You may either call one of the computer testing designees, or simply walk-in. If you choose to phone, you will need to select a testing center, schedule a test date, and make financial arrangements for test payment. You may register for tests several weeks in advance, and you may cancel your appointment according to the CTD's cancellation policy. If you do not follow the CTD's cancellation policies, you could be subject to a cancellation fee.

The next step in taking a knowledge test is providing proper identification. An acceptable identification document includes a recent photograph, signature, and actual residential address, if different from the mailing address. This information may be presented in more than one form of identification. Acceptable forms of identification include, but are not limited to, drivers' licenses, government identification cards, passports, alien residency (green) cards, and military identification cards. Other forms of identification that meet the requirements of this paragraph are acceptable. Some applicants may not possess the identification documentation described. In any case, you should always check with your local FSDO or IFO if you are unsure of the kind of identification to bring to the interview. You also need to present authorization to test.

Acceptable forms of authorization are:

- FAA Form 8610-2.
- Graduation certificate or certificate of completion to an affiliated testing center as previously explained.
- An original (not photocopy) failed Airman Knowledge Test Report, passing Airman Knowledge Test Report, or expired Airman Knowledge Test Report.

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

## **TAKING THE TEST**

Communication between individuals through the use of words is a complicated process. In addition to being an exercise in the application and use of aeronautical knowledge, a knowledge test is also an exercise in communication since it involves the use of the written language. Since the tests involve written rather than spoken words, communication between the test writer and the person being tested may become a difficult matter if care is not exercised by both parties. Consequently, considerable effort is expended to write each question in a clear, precise manner. Make sure you read the instructions given with the test, as well as the 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 guidance publications.
- Read each question carefully before looking at the answer options. You should clearly understand the problem before attempting to solve it.
- After formulating an answer, determine which answer option corresponds with your answer. The answer you choose should completely resolve the problem.
- From the answer options given, it may appear that there is more than one possible answer; however, there is only one answer that is correct and complete. The other answers are either incomplete, erroneous, or derived from popular misconceptions.
- If you are unsure of the answer to a certain question, it is best to mark it for review and proceed to the next question. After you answer the remaining questions, return to those you marked for review and answer them. The review marking procedure will be explained to you prior to starting the test. Although the computer should alert you to unanswered questions, make sure every question has an answer recorded. This procedure will enable you to use the available time to maximum advantage.
- When solving a calculation problem, select the answer that most nearly matches your solution. The problem has been solved by various individuals and with different 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.

## **USE OF TEST AIDS AND MATERIALS**

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

**The following guidelines apply:**

1. You may use any reference materials provided with the test. In addition, you may use scales, straightedges, protractors, plotters, and electronic or mechanical calculators that are directly related to the test.
2. Manufacturer's permanently inscribed instructions on the front and back of such aids (e.g., formulas, conversions, and weight and balance formulas) are permissible.
3. Testing centers may provide a calculator to you and/or deny use of your personal calculator based on the following limitations:
  - a. Prior to and upon completion of the test while in the presence of the proctor, you must actuate the ON/OFF switch and perform any other function that ensures erasure of any data stored in memory circuits.

- b. The use of electronic calculators incorporating permanent or continuous type memory circuits without erasure capability is prohibited. The proctor may refuse the use of your calculator when unable to determine the calculator's erasure capability.
  - c. Printouts of data must be surrendered at the completion of the test if the calculator incorporates this design feature.
  - d. The use of magnetic cards, magnetic tapes, modules, computer chips, or any other device upon which prewritten programs or information related to the test can be stored and retrieved is prohibited.
  - e. You are not permitted to use any booklet or manual containing instructions related to use of test aids.
4. Dictionaries are not allowed in the testing area.
  5. The proctor makes the final determination relating to test materials and items you may take into the testing area.

### **CHEATING OR OTHER UNAUTHORIZED CONDUCT**

Computer testing centers are required to follow strict security procedures to avoid test compromise. The FAA has directed testing centers to terminate a test at any time a test proctor suspects a cheating incident has occurred. An FAA investigation will then be conducted. If the investigation determines that unauthorized conduct has occurred, then any airman certificate or rating that you hold may be revoked, and you will be prohibited for 1 year from applying for or taking any test for a certificate or rating.

### **KNOWLEDGE TEST REPORTS**

Upon completion of the knowledge test, you will receive your Airman Knowledge Test Report, which reflects your score. The Airman Knowledge Test Report lists the learning statement codes for questions answered incorrectly. The total number of learning statement codes shown on the Airman Knowledge Test Report is not necessarily an indication of the total number of questions answered incorrectly.

The Airman Knowledge Test Report must be presented to the examiner prior to taking the practical test. During the oral portion of the practical test, the examiner is required to evaluate the noted areas of deficiency. Should you require a duplicate Airman Knowledge Test Report due to loss or destruction of the original, send a signed request accompanied by a check or money order for \$1 payable to the FAA. Your request should be sent to:

Federal Aviation Administration  
Airmen Certification Branch, AFS-760  
P.O. Box 25082  
Oklahoma City, OK 73125

Airman Knowledge Test Reports are valid for the 24-calendar-month period preceding the month you complete the practical test. If the Airman Knowledge Test Report expires before completion of the practical test, you must retake the knowledge test.

### **RETESTING PROCEDURES**

You may retake the test after 30 days from the date your last test was taken by presenting your failed Airman Knowledge Test Report. You may retest sooner than 30 days if you present your failed Airman Knowledge Test Report and a signed statement from an airman holding the certificate and rating you seek certifying that you have been given additional instruction in each subject failed and that you are now ready for retesting.

If you decide to retake a test you passed in anticipation of a better score, you may retake the test after 30 days from the date your last test was taken. The FAA will not allow you to retake a passed test before the 30-day period has lapsed. Prior to retesting, you must give your current Airman Knowledge Test Report to the test proctor. The score from the last test taken will be the official score.

### **Knowledge Test Centers**

The following is a list of the computer testing designees authorized to give FAA airman knowledge tests. This list should be helpful in case you choose to register for a test or simply want more information.

LaserGrade Computer Testing  
16821 SE McGillivray Blvd., Suite 201  
Vancouver, WA 98683  
(360) 896-9111

## Learning Statement Codes A&P Mechanic – General

Learning statement codes replace the old subject matter codes and are noted on the test report. They refer to measurable statements of knowledge that a student should be able to demonstrate following a defined element of training. The learning statement corresponding to the learning statement code on the test report can be located in the Learning Statement Reference Guide on the Web site.

AMG001	Ability To Draw/Sketch Repairs/Alterations
AMG002	Calculate Center Of Gravity
AMG003	Calculate Weight And Balance
AMG004	Determine Correct Data
AMG005	Determine Regulatory Requirement
AMG006	Interpret Drag Ratio From Charts
AMG007	Aerodynamic Fundamentals
AMG008	Air Density
AMG009	Aircraft Cleaning - Materials/Techniques
AMG010	Aircraft Component Markings
AMG011	Aircraft Control Cables - Install/Inspect/Repair/Service
AMG012	Aircraft Corrosion - Principles/Control/Prevention
AMG013	Aircraft Drawings - Detail/Assembly
AMG014	Aircraft Drawings/Blueprints - Lines/Symbols/Sketching
AMG015	Aircraft Electrical System - Install/Inspect/Repair/Service
AMG016	Aircraft Engines - Performance Charts
AMG017	Aircraft Hardware - Bolts/Nuts/Fasteners/Fittings/Valves
AMG018	Aircraft Instruments - Tachometer Indications/Dual Tachometers
AMG019	Aircraft Metals - Inspect/Test/Repair/Identify/Heat Treat
AMG020	Aircraft Metals - Types/Tools/Fasteners
AMG021	Aircraft Publications - Aircraft Listings
AMG022	Aircraft Records - Required/Destroyed
AMG023	Aircraft Repair - Major
AMG024	Airframe - Inspections
AMG025	Airworthiness Certificates - Validity/Requirements
AMG026	ATA Codes
AMG027	Basic Physics - Matter/Energy/Gas
AMG028	Data - Approved
AMG029	Dissymmetry
AMG030	Effects Of Frost/Snow On Airfoils
AMG031	Electrical System - Components/Operating Principles/Characteristics/Symbols
AMG032	Environmental Factors Affecting Maintenance Performance
AMG033	External Loading
AMG034	Flight Characteristics - Autorotation/Compressibility
AMG035	Flight Operations - Air Taxi
AMG036	Fluid Lines - Install/Inspect/Repair/Service
AMG037	Fluid Lines - Material/Coding
AMG038	Forces Acting On Aircraft - Angle Of Incidence
AMG039	Forces Acting On Aircraft - Yaw/Adverse Yaw
AMG040	Fuel - Types/Characteristics/Contamination/Fueling/Defueling/Dumping
AMG041	Fundamental Inspection Principles - Airframe/Engine
AMG042	Fundamental Material Properties
AMG043	Generator System - Components/Operating Principles/Characteristics
AMG044	Geometry
AMG045	Ground Operations - Start/Move/Service/Secure Aircraft
AMG046	Helicopter Engine Control System
AMG047	Helicopter Flight Controls
AMG048	Information On An Airworthiness Directive
AMG049	Instrument Panel Mounting
AMG050	Maintenance Error Management
AMG051	Maintenance Publications - Service/Parts/Repair
AMG052	Maintenance Resource Management
AMG053	Mathematics - Percentages/Decimals/Fractions/Ratio/General

AMG054 Penalties - Falsification/Cheating  
 AMG055 Physics - Work Forces  
 AMG056 Pitch Control - Collective/Cyclic  
 AMG057 Precision Measuring Tools - Meters/Gauges/Scales/Calipers  
 AMG058 Reciprocating Engine - Components/Operating Principles/Characteristics  
 AMG059 Regulations - Aircraft Inspection/Records/Expiration  
 AMG060 Regulations - Aircraft Operator Certificate  
 AMG061 Regulations - Aircraft Registration/Marks  
 AMG062 Regulations - Airworthiness Directives  
 AMG063 Regulations - Airworthiness Requirements/Responsibilities  
 AMG064 Regulations - Certificate Of Maintenance Review Requirements  
 AMG065 Regulations - Certificate Of Release  
 AMG066 Regulations - Certification Of Aircraft And Components  
 AMG067 Regulations - Change Of Address  
 AMG068 Regulations - Check Periods  
 AMG069 Regulations - Determine Mass And Balance  
 AMG070 Regulations - Display/Inspection Of Licenses And Certificates  
 AMG071 Regulations - Emergency Equipment  
 AMG072 Regulations - Flight/Operating Manual Marking/Placard  
 AMG073 Regulations - Housing And Facility Requirements  
 AMG074 Regulations - Instrument/Equipment Requirements  
 AMG075 Regulations - Maintenance Control/Procedure Manual  
 AMG076 Regulations - Maintenance Reports/Records/Entries  
 AMG077 Regulations - Maintenance Requirements  
 AMG078 Regulations - Minimum Equipment List  
 AMG079 Regulations - Minor/Major Repairs  
 AMG080 Regulations - Persons Authorized For Return To Service  
 AMG081 Regulations - Persons Authorized To Perform Maintenance  
 AMG082 Regulations - Privileges/Limitations Of Maintenance Certificates/Licenses  
 AMG083 Regulations - Privileges Of Approved Maintenance Organizations  
 AMG084 Regulations - Reapplication After Revocation/Suspension  
 AMG085 Regulations - Reporting Failures/Malfunctions/Defects  
 AMG086 Regulations - Return To Service  
 AMG087 Regulations - Special Airworthiness Certificates/Requirements  
 AMG088 Regulations - Special Flight Permit  
 AMG089 Regulations - Weighing An Aircraft  
 AMG090 Repair Fundamentals - Turnbuckles  
 AMG091 Rotor System - Components/Operating Principles/Characteristics  
 AMG092 Rotorcraft Vibration - Characteristics/Sources  
 AMG093 Starter/Ignition System - Components/Operating Principles/Characteristics  
 AMG094 Starter System - Starting Procedures  
 AMG095 Turbine Engines - Components/Operation/Associated Instruments  
 AMG096 Turbine Engines - Install/Inspect/Repair/Service/Hazards  
 AMG097 Type Certificate Data Sheet (TCDS)/Supplemental Type Certificate (STC)  
 AMG098 Welding Types/Techniques/Equipment  
 AMG099 Work/Power/Force/Motion  
 AMG100 Mathematics – Extract Roots/Radicals/Scientific Notation  
 AMG101 Algebraic Operations – Addition, Subtraction, Multiplication, Division  
 AMG102 Aircraft Electrical Circuit Diagrams – Read/Interpret/Troubleshoot  
 AMG103 Human Reliability In Maintenance Errors  
 AMG105 Environmental Factors Leading To Maintenance Errors  
 AMG106 Fatigue In Maintenance Errors Causes/Interventions AMG107 Error Management  
 AMG108 Maintenance Resource Management  
 AMG109 Error Management In Shift Turnover Amg110 Error Capture/Duplicate Inspection  
 AMG111 Ergonomic Interventions To Maintenance Errors  
 AMG112 Interventions To Prevent Cross-Connection Maintenance Errors  
 AMG113 Interventions To Prevent Shift/Task Turnover Errors  
 AMG115 Environmental Factors – Lighting/Temperature/Noise/Air Quality  
 AMG116 Error Intervention – Interruptions/Access