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**FAA-S-ACS-1
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**Aviation Mechanic
General, Airframe, Powerplant
Airman Certification Standards**

TBD

**Flight Standards Service
Washington, DC 20591**

Acknowledgments

The U.S. Department of Transportation, Federal Aviation Administration (FAA), Airman Testing Standards Branch, AFS-630, P.O. Box 25082, Oklahoma City, OK 73125 developed this Airman Certification Standards (ACS) document with the assistance of the aviation community. The FAA gratefully acknowledges the valuable support from the many individuals and organizations who contributed their time and expertise to assist in this endeavor.

Availability

This ACS is available for download from www.faa.gov. Please send comments regarding this document to AFS630comments@faa.gov.

Material in FAA-S-ACS-1 will be effective **TBD**. All previous editions of the Aviation Mechanic General, Airframe, and Powerplant Practical Test Standards (FAA-S-8081-26, -27, -28) will be obsolete as of this date for Aviation Mechanic applicants.

Foreword

The Federal Aviation Administration (FAA) has published the Aviation Mechanic – General, Airframe, Powerplant Airman Certification Standards (ACS) document to communicate the aeronautical knowledge, risk management, and skill proficiency standards for aviation maintenance technician certification. This ACS incorporates and supersedes the previous Aviation Mechanic Practical Test Standards for General (FAA-S-8081-26), Airframe (FAA-S-8081-27), and Powerplant (FAA-S-8081-28).

The FAA views the ACS as the foundation of its transition to a more integrated and systematic approach to airman certification. The ACS is part of the safety management system (SMS) framework that the FAA uses to mitigate risks associated with airman certification training and testing. Specifically, the ACS, associated guidance, and test question components of the airman certification system are constructed around the four functional components of an SMS:

- Safety Policy that defines and describes aeronautical knowledge, skill proficiency, and risk management as integrated components of the airman certification system;
- Safety Risk Management processes through which both internal and external stakeholders identify changes in regulations, safety recommendations, or other factors. These changes are then evaluated to determine whether they require modification of airman testing and training materials;
- Safety Assurance processes to ensure the prompt and appropriate incorporation of changes arising from new regulations and safety recommendations; and
- Safety Promotion in the form of ongoing engagement with both external stakeholders (e.g., the aviation training industry) and FAA policy divisions.

The FAA has developed this ACS and its associated guidance in collaboration with a diverse group of aviation training experts. The goal is to drive a systematic approach to all components of the airman certification system, including knowledge test question development and conduct of the oral and practical test. The FAA acknowledges and appreciates the many hours that these aviation experts have contributed toward this goal. This level of collaboration, a hallmark of a robust safety culture, strengthens and enhances aviation safety at every level of the airman certification system.

John S. Duncan
Director, Flight Standards Service

Revision History

| Document# | Description | Revision Date |
|----------------|--|--------------------|
| FAA-S-8081-26A | Aviation Mechanic General Practical Test Standards (Change 1) | April 27, 2015 |
| FAA-S-8081-27A | Aviation Mechanic Airframe Practical Test Standards (Changes 1-2) | September 29, 2015 |
| FAA-S-8081-28A | Aviation Mechanic Powerplant Practical Test Standards (Change 1) | April 27, 2015 |
| FAA-S-ACS-1 | Aviation Mechanic – General, Airframe, Powerplant Airman Certification Standards | TBD |

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Introduction

Airman Certification Standards Concept

The goal of the airman certification process is to ensure the applicant possesses the knowledge, ability to manage risks, and skill consistent with the privileges of the certificate or rating being exercised.

In fulfilling its responsibilities for the airman certification process, the Federal Aviation Administration (FAA) Flight Standards Service (AFS) plans, develops, and maintains materials related to airman certification training and testing. These materials have included several components. The FAA knowledge test measures mastery of the aeronautical knowledge areas listed in Title 14 of the Code of Federal Regulations (14 CFR) **part 65**. Other materials, such as handbooks in the FAA-H-8083 series, provide guidance to applicants on aeronautical knowledge, risk management, and flight proficiency.

Safe operations on today's aircraft require integration of aeronautical knowledge, risk management, and skill proficiency standards. To accomplish these goals, the FAA drew upon the expertise of organizations and individuals across the aviation and training community to develop the ACS. The ACS defines the elements of knowledge, risk management, and skill for for each airman certificate or rating defined in 14 CFR part 65. It thus forms a more comprehensive standard for what an applicant must know, consider, and do for the safe conduct and successful completion of each subject to be tested on either the knowledge exam or the oral and practical test.

Through the oral and practical portion of the practical test, the FAA expects evaluators to assess the applicant's mastery of the subject in accordance with the level of learning most appropriate for the specified subject. The oral questioning will continue throughout the entire practical test. For some topics, the evaluator will ask the applicant to describe or explain. For other items, the evaluator will assess the applicant's understanding by providing a scenario that requires the applicant to appropriately apply and/or correlate knowledge, experience, and information to the circumstances of the given scenario. The practical portion of the practical test requires the applicant to demonstrate knowledge, risk management, proficiency, and operational skill in accordance with the ACS.

Note: *As used in the ACS, an evaluator is any person authorized to conduct airman testing (e.g., an FAA aviation safety inspector (ASI), designated mechanic examiner (DME), or other individual authorized to conduct test for a certificate or rating).*

Compliance with these procedures makes certain that airman applicants meet a satisfactory level of competency and workmanship required for certification. Each applicant is required to demonstrate a minimum satisfactory competency level, regardless of his/her previous education background.

Adherence to the following standards is mandatory when evaluating an applicant's test performance for an FAA Airframe and/or Powerplant Certificate:

- 14 CFR part 65, section 65.79
- General Aviation Airman Designee Handbook, FAA Order 8900.2 (as revised)

All applicants for an FAA Aviation Mechanic Certificate must qualify by meeting the prescribed requirements as stated in 14 CFR part 65, section 65.77. They must additionally pass a written knowledge test, and the oral and practical tests for the certificate and/or rating sought, in accordance with 14 CFR part 65, section 65.75 and 65.77.

FAA written knowledge tests contain topics that include the construction and maintenance of aircraft, relevant FAA regulations, basic principles for installation and maintenance of propellers, and powerplants, depending on the certificate and rating sought, based on 14 CFR part 65, section 65.75

Aviation maintenance instructors and applicants should find these standards helpful during training and preparing for the skill test, which are required under 14 CFR part 65, section 65.79.

Using the ACS

Title 49 U.S. Code Subpart III, Chapter 447 is the foundation for the FAA's safety regulations. The FAA requires that all practical tests be conducted in accordance with the appropriate Aviation Mechanic Airman Certification Standards (ACS) and the policies and standardized procedures set forth in the current version of FAA Order 8900.2, General Aviation Airman Designee Handbook.

Note: An evaluator conducting an oral and/or practical test must not test more than one applicant at a time.

Definitions within:

- **Knowledge**—(FAA knowledge exam, oral) elements are indicated by use of the words "*Exhibits knowledge in....*"
- **Skill**—(practical) elements are indicated by the use of the words "Demonstrates the skill to perform...."
- **Risk**—(oral, practical) elements are indicated by the use of the words "Determine, Identify, Creates..."

The ACS consists of **Sections (General, Airframe, Powerplant)**. Each Section includes **Subjects** appropriate to that Section and consistent with 14 CFR part 65. Each Subject begins with an **Objective** stating what the applicant should know, consider, and/or do. The ACS then lists the aeronautical knowledge, risk management, and skill elements relevant to the specific Subjects, along with the conditions and standards for acceptable performance. The ACS uses **Notes** to emphasize special considerations. The ACS uses the terms "will" and "must" to convey directive (mandatory) information. The term "may" denotes items that are recommended but not required. The **References** for each Subject indicate the source material for Subject elements. For example, in Subjects such as "Basic Electricity, Electron Theory" (AM.I.A.K1), the applicant must be prepared for questions on electron theory presented in the references for that Subject.

Each Subject in the ACS is coded according to a scheme that includes four elements. For example:

AM.II.A.K1:

- AM** = Applicable ACS (Aviation Mechanic)
- II** = Section (Airframe Structures)
- A** = Subject (Metallic Structures)
- K1** = Subject element Knowledge 1 (Inspection/testing of sheet metal structures.)

Knowledge test questions are linked to the ACS codes, which will soon replace the system of Learning Statement Codes (LSC). After this transition occurs, the airman knowledge test report will list an ACS code that correlates to a specific Subject element for a given Section and Subject. At that time, remedial instruction and re-testing will be specific, targeted, and based on specified learning criteria. Similarly, a Notice of Disapproval for the practical test will use the ACS codes to identify the deficient Subject element(s).

The current knowledge test management system does not have the capability to print ACS codes. Until a new test management system is in place, the LSC (e.g., "AMG," "AMA," and "AMP" codes will continue to be displayed on the Airman Knowledge Test Report (AKTR). The AMG, AMA, and AMP codes are linked to references leading to broad subject areas. By contrast, each ACS code is tied to a unique Subject element in the ACS itself. Because of this fundamental difference, there is no one-to-one correlation between LSC (AMG, AMA, AMP) codes and ACS codes.

Because all active knowledge test questions for the General (AMG), Airframe (AMA), and Powerplant (AMP) knowledge tests have been aligned with the corresponding ACS, evaluators can continue to use Learning Statement codes in conjunction with the ACS for the time being. The evaluator should look up the learning statement code(s) on the applicant's AKTR in the Learning Statement Reference Guide. After noting the subject area(s), the evaluator can use the corresponding Subject(s) in the ACS to narrow the scope of material for retesting, and to evaluate the applicant's understanding of that material in the context of the appropriate ACS Subject.

Except as provided by 14 CFR 65.80, the applicant must pass the AMG and AMA and/or AMP knowledge test before taking the Aviation Maintenance Technical oral and practical test. The practical test is conducted in accordance with the ACS and FAA regulations that are current as of the date of the test. **Further, the applicant must pass the oral portion of the practical test before beginning the practical portion.**

The oral portion of the practical test allows the evaluator to determine whether the applicant is sufficiently prepared to advance to the practical portion of the practical test. The oral questioning will continue throughout the entire practical test.

The FAA encourages applicants and instructors to use the ACS when preparing for knowledge exams and oral and practical tests. The FAA will revise the ACS as circumstances require.

I. General

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|------------------------|--|
| Subject | A. Basic Electricity |
| References | FAA-H-8083-30 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with basic electricity applicable to aviation maintenance technicians. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.I.A.K1</i> | Electron theory (conventional flow vs. electron flow). |
| <i>AM.I.A.K2</i> | Magnetism. |
| <i>AM.I.A.K3</i> | Capacitance in a circuit. |
| <i>AM.I.A.K4</i> | Inductance in a circuit. |
| <i>AM.I.A.K5</i> | AC electrical circuits. |
| <i>AM.I.A.K6</i> | DC electrical circuits. |
| <i>AM.I.A.K7</i> | Ohm's law. |
| <i>AM.I.A.K8</i> | Kirchhoff's laws. |
| <i>AM.I.A.K9</i> | Voltage. |
| <i>AM.I.A.K10</i> | Current. |
| <i>AM.I.A.K11</i> | Resistance. |
| <i>AM.I.A.K12</i> | Power. |
| <i>AM.I.A.K13</i> | Series circuits. |
| <i>AM.I.A.K14</i> | Parallel circuits. |
| <i>AM.I.A.K15</i> | Aircraft batteries. |
| <i>AM.I.A.K16</i> | Transformers. |
| <i>AM.I.A.K17</i> | Circuit continuity. |
| <i>AM.I.A.K18</i> | Controlling devices including switches and relays. |
| <i>AM.I.A.K19</i> | Protective devices including fuses and circuit breakers. |
| <i>AM.I.A.K20</i> | Resistor types and color coding. |
| <i>AM.I.A.K21</i> | Semiconductors including diodes, transistors and integrated circuits. |
| <i>AM.I.A.K22</i> | Digital logic, including RAM, ROM, NVRAM, AND-gate, OR-gate, inverter, flip-flop. |
| <i>AM.I.A.K23</i> | Binary numbers. |
| <i>AM.I.A.K24</i> | Electrostatic discharge. |
| <i>AM.I.A.K25</i> | Electrical circuit drawings. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.I.A.R1</i> | Safety precautions to be employed when taking voltage, current, resistance and capacitance measurements. |
| <i>AM.I.A.R2</i> | Handling and storage of different type batteries (i.e. lead acid, NiCad, lithium ion, gel cell). |
| <i>AM.I.A.R3</i> | Safety factors when dealing with high-voltage circuits such as found in strobe lighting. |
| <i>AM.I.A.R4</i> | Safety precautions to be employed when connecting or disconnecting a battery. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.I.A.S1</i> | Perform circuit continuity test. |
| <i>AM.I.A.S2</i> | Measure voltage. |
| <i>AM.I.A.S3</i> | Measure current. |
| <i>AM.I.A.S4</i> | Measure resistance. |
| <i>AM.I.A.S5</i> | Test a switch or relay. |
| <i>AM.I.A.S6</i> | Test a fuse or circuit breaker. |

I. General

| Subject | A. Basic Electricity |
|-------------------|--|
| <i>AM.I.A.S7</i> | Read and interpret aircraft electrical circuit diagrams, and symbols, including solid state devices and logic functions. |
| <i>AM.I.A.S8</i> | Troubleshoot a circuit. |
| <i>AM.I.A.S9</i> | Inspect and service an aircraft battery. |
| <i>AM.I.A.S10</i> | Identify symbols used in electrical and electronic schematic diagrams (e.g., grounds, shields, resistors, capacitors, fuses, circuit breakers, batteries, diodes, transistors, and integrated circuits). |
| <i>AM.I.A.S11</i> | Demonstrate how to test for short-circuit and open-circuit conditions. |
| <i>AM.I.A.S12</i> | Measure voltage drop across a resistor. |
| <i>AM.I.A.S13</i> | Determine or measure for open electrical circuits. |
| <i>AM.I.A.S14</i> | Inspect an aircraft battery. |
| <i>AM.I.A.S15</i> | Service an aircraft battery. |

I. General

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|------------------------|--|
| Subject | <i>B. Aircraft Technical Graphics</i> |
| References | FAA-H-8083-30 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft technical graphics. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.I.B.K1</i> | Drawings, blueprints, sketches and/or system schematics including commonly used lines, symbols and terminology. |
| <i>AM.I.B.K2</i> | Repair or alteration of an aircraft system or component(s) using drawings/blueprints and/or system schematics to determine whether it conforms to its type design. |
| <i>AM.I.B.K3</i> | Inspection of an aircraft system or component(s) using drawings/blueprints and/or schematics. |
| <i>AM.I.B.K4</i> | Terms used in conjunction with aircraft drawings/blueprints and/or system schematics. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.I.B.R1</i> | Plus or minus tolerances as depicted on aircraft drawings. |
| <i>AM.I.B.R2</i> | Use of manufactures specifications for design of alterations and repairs. |
| <i>AM.I.B.R3</i> | Ensuring that the drawing or schematic is the one that is applicable to the particular aircraft by model and serial number. |
| <i>AM.I.B.R4</i> | Identification of correct and most current version and applicability of drawing being used. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.I.B.S1</i> | Draw a sketch of a repair or alteration. |
| <i>AM.I.B.S2</i> | Identify the meaning of lines and symbols used in an aircraft drawing. |
| <i>AM.I.B.S3</i> | Interpret dimensions used in an aircraft drawing. |
| <i>AM.I.B.S4</i> | Identify changes on an aircraft drawing. |
| <i>AM.I.B.S5</i> | Determine material requirements from an aircraft drawing. |
| <i>AM.I.B.S6</i> | Interpret graphs and charts. |

I. General

| | |
|------------------------|---|
| Subject | <i>C. Weight and Balance</i> |
| References | FAA-H-8083-30 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with weight and balance. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.I.C.K1</i> | Commonly used terminology such as datum, positive or negative arm, positive or negative moment, mean aerodynamic chord (MAC), tare, ballast, and unusable fuel/oil. |
| <i>AM.I.C.K2</i> | Purpose of weighing or reweighing an aircraft. |
| <i>AM.I.C.K3</i> | Weighing procedures, including the general preparations for weighing, with emphasis on aircraft weighing area considerations. |
| <i>AM.I.C.K4</i> | Procedures for calculation of the following: arm, positive or negative moment, center of gravity (CG) or moment index. |
| <i>AM.I.C.K5</i> | Purpose and application of weight and CG limits. |
| <i>AM.I.C.K6</i> | Purpose of determining CG. |
| <i>AM.I.C.K7</i> | Adverse loading considerations and how to calculate if adverse loading will cause an out of limit condition. |
| <i>AM.I.C.K8</i> | Determine proper empty weight configuration. |
| <i>AM.I.C.K9</i> | Proper ballast placement. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.I.C.R1</i> | Situations that can lead to unsafe conditions when jacking an aircraft (i.e., jacking the aircraft in an area that is susceptible to wind gusts). |
| <i>AM.I.C.R2</i> | Dangers of weighing an aircraft without following recommended procedures. |
| <i>AM.I.C.R3</i> | Improper use of scales. |
| <i>AM.I.C.R4</i> | Adverse aerodynamic effect of CG that is forward or aft of CG limits. |
| <i>AM.I.C.R5</i> | Adverse aerodynamic and performance effects of weight in excess of limits. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.I.C.S1</i> | Research and explain the procedures for weighing an aircraft. |
| <i>AM.I.C.S2</i> | Perform weight and balance calculations. |
| <i>AM.I.C.S3</i> | Calculate ballast weight shift and required weight location. |
| <i>AM.I.C.S4</i> | Check aircraft weighing scales for calibration. |
| <i>AM.I.C.S5</i> | Calculate weight and balance for an aircraft after an equipment change. |
| <i>AM.I.C.S6</i> | Compute forward and aft loaded CG limit. |
| <i>AM.I.C.S7</i> | Create a maintenance record for a weight and balance change. |
| <i>AM.I.C.S8</i> | Compute the empty weight and empty weight CG of an aircraft. |
| <i>AM.I.C.S9</i> | Calculate the moment of an item of equipment. |
| <i>AM.I.C.S10</i> | Identify tare items. |
| <i>AM.I.C.S11</i> | Locate weight and balance information. |
| <i>AM.I.C.S12</i> | Locate datum. |
| <i>AM.I.C.S13</i> | Locate the baggage compartment placarding requirements for an aircraft. |
| <i>AM.I.C.S14</i> | Revise an aircraft equipment list after equipment change. |
| <i>AM.I.C.S15</i> | Calculate the change needed to correct an out of balance condition. |
| <i>AM.I.C.S16</i> | Determine an aircraft's CG range using aircraft specifications and type certificate data sheets. |
| <i>AM.I.C.S17</i> | Calculate a weight change and complete required records. |

I. General

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|------------------------|--|
| Subject | <i>D. Fluid Lines and Fittings</i> |
| References | FAA-H-8083-30 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with fluid lines and fittings. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.I.D.K1</i> | Tubing and hose materials, applications, sizes, and fittings. |
| <i>AM.I.D.K2</i> | Flexible hose identification. |
| <i>AM.I.D.K3</i> | Rigid line fabrication and installation techniques/practices. |
| <i>AM.I.D.K4</i> | Flexible hose fabrication and installation techniques/practices. |
| <i>AM.I.D.K5</i> | Importance of using a torque wrench when securing fluid hose and line fittings. |
| <i>AM.I.D.K6</i> | Use of torque seal or similar witness techniques after installing critical fluid hose and line fittings. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.I.D.R1</i> | Proper system configuration prior to and during maintenance. i.e. all pressures depleted and system tagged prior to disassembly or maintenance. |
| <i>AM.I.D.R2</i> | Proper use of required safety equipment and gear. |
| <i>AM.I.D.R3</i> | Use of approved materials and components. |
| <i>AM.I.D.R4</i> | Observing minimum bend radius when fabricating rigid lines and installing flexible hoses. |
| <i>AM.I.D.R5</i> | Identifying the hazards associated with a twisted hose. |
| <i>AM.I.D.R6</i> | Identifying when a fitting has loosened or a hose has moved out-of-position. |
| <i>AM.I.D.R7</i> | Proper use of tools while applying torque to a fluid line (i.e. the use of a second back-up wrench to prevent the line from twisting during the torque of the line). |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.I.D.S1</i> | Fabricate an aircraft rigid line or a flexible hose. |
| <i>AM.I.D.S2</i> | Install an aircraft rigid line. |
| <i>AM.I.D.S3</i> | Install an aircraft flexible hose. |
| <i>AM.I.D.S4</i> | Perform a rigid line or flexible hose inspection. |
| <i>AM.I.D.S5</i> | Identify installation and security requirements for rigid lines and flexible hoses. |
| <i>AM.I.D.S6</i> | Identify fluid and air lines and fittings. |
| <i>AM.I.D.S7</i> | Fabricate a flare on tubing. |
| <i>AM.I.D.S8</i> | Fabricate a flareless-fitting-tube connection. |

I. General

| | |
|------------------------|--|
| Subject | <i>E. Materials, Hardware and Processes</i> |
| References | FAA-H-8083-30 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with materials, hardware and processes. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.I.E.K1</i> | Materials commonly used in aircraft and their general application. |
| <i>AM.I.E.K2</i> | Heat treatment processes, using DD or "icebox" rivets. |
| <i>AM.I.E.K3</i> | Forces placed on aircraft materials (e.g., tension, compression, torsion, bending, strain, and shear). |
| <i>AM.I.E.K4</i> | Hardware commonly used in aircraft (e.g., bolts, nuts, screws, pins, washers, turnlock fasteners, cables, cable fittings, and rigid line couplings). |
| <i>AM.I.E.K5</i> | Safety wire and safety clip requirements and techniques. |
| <i>AM.I.E.K6</i> | Precision measurement and precision measurement tools, principles and procedures. |
| <i>AM.I.E.K7</i> | Visible characteristics of acceptable and/or unacceptable welds. |
| <i>AM.I.E.K8</i> | Non-destructive testing methods as appropriate for various materials. |
| <i>AM.I.E.K9</i> | Use of torque wrenches. |
| <i>AM.I.E.K10</i> | Wet vs. dry torque. |
| <i>AM.I.E.K11</i> | Running vs. breakaway torque. |
| <i>AM.I.E.K12</i> | Suitability and compatibility of materials and hardware used for maintenance. |
| <i>AM.I.E.K13</i> | Relationship between torque and fastener preload. |
| <i>AM.I.E.K14</i> | Aircraft maintenance troubleshooting concepts, procedures and priorities. |
| <i>AM.I.E.K15</i> | Accurately identifying observed symptoms. |
| <i>AM.I.E.K16</i> | Inadequate preload in highly stressed threaded fasteners. |
| <i>AM.I.E.K17</i> | Precautions to ensure adequate preload when installing highly stressed threaded fasteners. |
| <i>AM.I.E.K18</i> | Aircraft inspection methods and tools. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.I.E.R1</i> | The proper use personal protective equipment (PPE). |
| <i>AM.I.E.R2</i> | Consequences of improper torque. |
| <i>AM.I.E.R3</i> | Identification of threaded fastener damage. |
| <i>AM.I.E.R4</i> | Misunderstanding and misapplication of torquing techniques on critical highly-stressed fasteners. |
| <i>AM.I.E.R5</i> | Consequences of using suspected unapproved parts (SUPS). |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.I.E.S1</i> | Install safety wire on nuts, bolts, turnbuckles and airframe or engine components. |
| <i>AM.I.E.S2</i> | Properly torque aircraft hardware. |
| <i>AM.I.E.S3</i> | Perform a visual inspection of various welds. |
| <i>AM.I.E.S4</i> | Identify aircraft materials and hardware based on manufacturer's markings. |
| <i>AM.I.E.S5</i> | Select and install aircraft bolts. |
| <i>AM.I.E.S6</i> | Make precision measurements with an instrument that has a Vernier micrometer scale. |
| <i>AM.I.E.S7</i> | Check the concentricity of a shaft. |
| <i>AM.I.E.S8</i> | Identify aircraft control cable components. |
| <i>AM.I.E.S9</i> | Fabricate a cable assembly using a swaged end fitting. |

I. General

| Subject | <i>E. Materials, Hardware and Processes</i> |
|-------------------|--|
| <i>AM.I.E.S10</i> | Select the correct aluminum alloy for a structural repair. |
| <i>AM.I.E.S11</i> | Identify rivets by physical characteristics. |
| <i>AM.I.E.S12</i> | Determine suitability of materials for aircraft repairs. |
| <i>AM.I.E.S13</i> | Distinguish between heat-treated and non-heat-treated aluminum alloys. |
| <i>AM.I.E.S14</i> | Determine required torque value of given item. |
| <i>AM.I.E.S15</i> | Check for proper calibration of a micrometer. |

I. General

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| Subject | <i>F. Ground Operation and Servicing</i> |
| References | FAA-H-8083-30 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with ground operation and servicing. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.I.F.K1</i> | Aircraft towing procedures. |
| <i>AM.I.F.K2</i> | Aircraft securing procedures. |
| <i>AM.I.F.K3</i> | Aviation fueling procedures. |
| <i>AM.I.F.K4</i> | Airport operation procedures and ATC communications. |
| <i>AM.I.F.K5</i> | Starting, ground operating, and/or taxiing procedures. |
| <i>AM.I.F.K6</i> | Types/classes of fire extinguishers and procedures. |
| <i>AM.I.F.K7</i> | Aircraft oil, hydraulic and pneumatic and deicing servicing procedures. |
| <i>AM.I.F.K8</i> | Oxygen system servicing procedures. |
| <i>AM.I.F.K9</i> | Characteristics of aviation gasoline and/or turbine fuels, including basic types and means of identification. |
| <i>AM.I.F.K10</i> | Fuel additives commonly used in the field. |
| <i>AM.I.F.K11</i> | Use of automobile fuel in aircraft engines. |
| <i>AM.I.F.K12</i> | Jacking and securing procedures. |
| <i>AM.I.F.K13</i> | Tool and hardware accountability. |
| <i>AM.I.F.K14</i> | Physical entry and personnel control. |
| <i>AM.I.F.K15</i> | Material handling. |
| <i>AM.I.F.K16</i> | Parts protections. |
| <i>AM.I.F.K17</i> | Hazardous materials, MSDA and personal protection equipment. |
| <i>AM.I.F.K18</i> | Wildlife and environmental effects. |
| <i>AM.I.F.K19</i> | Foreign object damage effects |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.I.F.R1</i> | Dangers associated with starting, ground operating, and/or taxiing aircraft and procedures for preventing, minimizing or otherwise managing any of them. |
| <i>AM.I.F.R2</i> | Consequences of using incorrect and/or contaminated fuel. |
| <i>AM.I.F.R3</i> | Dangers associated with starting a turbine aircraft engine and engine run-up. |
| <i>AM.I.F.R4</i> | Oxygen system safety practices/precautions. |
| <i>AM.I.F.R5</i> | Cautions involved in preparing to tow an aircraft. i.e. brakes, clearance for large aircraft. |
| <i>AM.I.F.R6</i> | Ground operations of piston aircraft engines with cowling removed. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.I.F.S1</i> | Identify procedures for securing an aircraft. |
| <i>AM.I.F.S2</i> | Identify procedures for towing an aircraft. |
| <i>AM.I.F.S3</i> | Follow a start-up checklist for an aircraft reciprocating or turbine engine. |
| <i>AM.I.F.S4</i> | Prepare an aircraft for engine starting. |
| <i>AM.I.F.S5</i> | Use appropriate hand signals for the movement of aircraft. |
| <i>AM.I.F.S6</i> | Identify procedures for fueling an aircraft. |
| <i>AM.I.F.S7</i> | Inspect an aircraft fuel system for water and foreign object debris (FOD) contamination. |
| <i>AM.I.F.S8</i> | Identify procedures for extinguishing fires in an engine induction system. |
| <i>AM.I.F.S9</i> | Connect an external auxiliary power unit. |
| <i>AM.I.F.S10</i> | Identify different grades of aviation gasoline. |
| <i>AM.I.F.S11</i> | Identify procedures for securing a helicopter for high-wind conditions. |

I. General

| Subject | <i>F. Ground Operation and Servicing</i> |
|-------------------|---|
| <i>AM.I.F.S12</i> | Identify procedures for securing a turbine-powered aircraft after engine shutdown. |
| <i>AM.I.F.S13</i> | Locate jacking and mooring points. |
| <i>AM.I.F.S14</i> | Locate and explain an aircraft's jacking procedures. |
| <i>AM.I.F.S15</i> | Select an approved fuel for an aircraft. |
| <i>AM.I.F.S16</i> | Carry out a foreign object elimination control procedure related to a maintenance task. |
| <i>AM.I.F.S17</i> | Describe a foreign object elimination procedure after a maintenance procedure. |

I. General

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| Subject | <i>G. Cleaning and Corrosion Control</i> |
| References | FAA-H-8083-30 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with cleaning and corrosion control. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.I.G.K1</i> | Aircraft washing procedures. |
| <i>AM.I.G.K2</i> | Corrosion theory and causation. |
| <i>AM.I.G.K3</i> | Types and effects of corrosion. |
| <i>AM.I.G.K4</i> | Corrosion prone areas in aircraft. |
| <i>AM.I.G.K5</i> | Corrosion preventive maintenance procedures. |
| <i>AM.I.G.K6</i> | Corrosion identification and inspection. |
| <i>AM.I.G.K7</i> | Corrosion removal and treatment procedures. |
| <i>AM.I.G.K8</i> | Corrosion Preventive Compounds (CPC) (e.g., waxy sealants, thin-film dielectrics). |
| <i>AM.I.G.K9</i> | Selection of optimal CPC and frequency of treatment. |
| <i>AM.I.G.K10</i> | Use of high-pressure application equipment (i.e., fogging). |
| <i>AM.I.G.K11</i> | Improper use of cleaners on aluminum or composite materials. |
| <i>AM.I.G.K12</i> | Dissimilar metals causing accelerated corrosion, and role of protective barriers to mitigate this risk. |
| <i>AM.I.G.K13</i> | Conversion coatings. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.I.G.R1</i> | Improper use or lack of use of appropriate personal protective equipment when handling solvents and corrosion treatment materials. |
| <i>AM.I.G.R2</i> | Identifying health concerns when using paints and solvents. |
| <i>AM.I.G.R3</i> | Hazards associated with improper ventilation. |
| <i>AM.I.G.R4</i> | Identifying the proper materials and processes to be used for cleaning or corrosion treatment on a given part or structure to prevent causing further damage. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.I.G.S1</i> | Perform a portion of an aircraft corrosion inspection. |
| <i>AM.I.G.S2</i> | Identify and select aircraft corrosion prevention/cleaning materials. |
| <i>AM.I.G.S3</i> | Apply corrosion prevention/coating materials. |
| <i>AM.I.G.S4</i> | Inspect finishes and identify defects. |
| <i>AM.I.G.S5</i> | Inspect an aircraft compartment for corrosion. |
| <i>AM.I.G.S6</i> | Identify procedures to clean and protect plastics. |

I. General

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| Subject | H. Mathematics |
| References | FAA-H-8083-30 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with mathematics as it relates to aircraft maintenance. <i>Note: The practical portion of the Mathematics subject area may be tested simultaneously when performing calculation(s) in subject areas Basic Electricity and/or Weight and Balance.</i> |
| Knowledge | The applicant demonstrates understanding of: |
| AM.I.H.K1 | Areas of various geometrical shapes. |
| AM.I.H.K2 | Volumes of various geometrical shapes. |
| AM.I.H.K3 | Definitions/descriptions of geometrical terms, including but not limited to any of the following: polygon, pi, diameter, radius, and hypotenuse. |
| AM.I.H.K4 | Ratio problems, including examples of where or how they may be used in relation to aircraft maintenance or system(s) operation. |
| AM.I.H.K5 | Proportion and percentage problems, including examples of where or how they may be used in relation to aircraft maintenance or system(s) operation. |
| AM.I.H.K6 | Algebraic operations, including examples of where or how they may be used in relation to aircraft maintenance. |
| AM.I.H.K7 | Conditions or areas where metric conversion may be necessary. |
| AM.I.H.K8 | Scientific (exponential) notation, decimal notation, fractional notation, binary notation, and conversion between these various forms of numeric notation. |
| AM.I.H.K9 | Rounding numbers. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks encompassing: |
| AM.I.H.R1 | Failure to use the precedence of algebraic operators when solving an algebraic equation. |
| AM.I.H.R2 | Failure to maintain the correct positive or negative integer in mathematical operations. |
| AM.I.H.R3 | Implications of rounding numbers when precision is needed. |
| Skills | The applicant demonstrates the ability to: |
| AM.I.H.S1 | Determine the square root of given numbers. |
| AM.I.H.S2 | Compute the volume of a cylinder. |
| AM.I.H.S3 | Compute the area of a wing. |
| AM.I.H.S4 | Calculate the volume of a shape; such as a baggage compartment or fuel tank. |
| AM.I.H.S5 | Convert fractional numbers to decimal equivalents. |
| AM.I.H.S6 | Compare two numerical values using ratios. |
| AM.I.H.S7 | Compute compression ratio. |
| AM.I.H.S8 | Compute the torque value change when using a torque wrench with an extension. |

I. General

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| Subject | <i>I. Regulations, Publications and Recordkeeping</i> |
| References | FAA-H-8083-30, 14 CFR part 65 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with regulations, publications and recordkeeping. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.I.I.K1</i> | Privileges and limitations of a mechanic certificate. |
| <i>AM.I.I.K2</i> | Recent experience requirements and how to re-establish once lost. |
| <i>AM.I.I.K3</i> | Maintenance record entry for approval for return to service after repairs and/or alterations. |
| <i>AM.I.I.K4</i> | Maintenance record entry for approval for return to service after inspection. |
| <i>AM.I.I.K5</i> | The use of FAA maintenance recordkeeping forms (e.g., FAA Forms 337, 8010-4, 8100-2, 8130-3). |
| <i>AM.I.I.K6</i> | Maintenance terminology as defined in 14 CFR part 1 (e.g., time in service, maintenance, preventive maintenance, major alteration, major repair, minor alteration minor repair). |
| <i>AM.I.I.K7</i> | Criteria and responsibility for determining whether a repair or alteration is major or minor. |
| <i>AM.I.I.K8</i> | The regulatory framework including general subject matter of the relevant parts of 14 CFR relevant to aircraft maintenance and mechanics. |
| <i>AM.I.I.K9</i> | Agency publications and guidance materials including type certificate data sheets (TCDS), advisory circulars and airworthiness directives. |
| <i>AM.I.I.K10</i> | Alternative methods of Airworthiness Directives compliance. |
| <i>AM.I.I.K11</i> | Manufacturer publications including maintenance manuals, service bulletins, maintenance alerts and master minimum equipment list. |
| <i>AM.I.I.K12</i> | FAA databases and resources available including type certificate data sheets and supplemental type certificates. |
| <i>AM.I.I.K13</i> | Type Certificate Data Sheets (TCDS) non-regulatory and non-compulsory status. |
| <i>AM.I.I.K14</i> | Compliance requirements for manufacturer-specified methods, techniques and practices. |
| <i>AM.I.I.K15</i> | Compliance requirements for manufacturer-specified maintenance and inspection intervals. |
| <i>AM.I.I.K16</i> | Service bulletin and service instruction compliance requirements. |
| <i>AM.I.I.K17</i> | FAA-approved maintenance data including maintenance manuals and other methods, techniques and practices acceptable by the administrator. |
| <i>AM.I.I.K18</i> | Difference between approved data and acceptable data, and when each is required. |
| <i>AM.I.I.K19</i> | FAA airworthiness limitations. |
| <i>AM.I.I.K20</i> | Alert, Caution, and Warning Indications; understand the basic definition of warnings, cautions, and notes that are used in maintenance and operating manuals. |
| <i>AM.I.I.K21</i> | Inoperative equipment. |
| <i>AM.I.I.K22</i> | Discrepancy records or placards. |
| <i>AM.I.I.K23</i> | The use of useable on, or effectivity, codes in parts manuals. |
| <i>AM.I.I.K24</i> | Determining the serial number effectivity of an item. |
| <i>AM.I.I.K25</i> | Limitations of a certificate and/or rating. |
| <i>AM.I.I.K26</i> | Basic definition of warnings, cautions, and notes that are used in maintenance and operating manuals. |
| <i>AM.I.I.K27</i> | Length of and practical experience required for certificate eligibility. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.I.I.R1</i> | Hazards that can result from incomplete or inaccurate documentation. |
| <i>AM.I.I.R2</i> | Use of Material Safety Data Sheets (MSDS), Safety Data Sheets (SDS). |
| <i>AM.I.I.R3</i> | Being complacent during documentation phase of maintenance procedures. |

I. General

| Subject | <i>I. Regulations, Publications and Recordkeeping</i> |
|---------------|---|
| AM.I.I.R4 | Understand the consequences of not adhering to warnings, cautions, or notes as they are used in maintenance and operational manuals. |
| AM.I.I.R5 | Possible consequences of neglecting to correctly determine if a component is applicable to a given aircraft. |
| Skills | The applicant demonstrates the ability to: |
| AM.I.I.S1 | Utilize FAA Form 337 or 8130-3 based on a given set of facts (e.g., 100-hour inspection, serviceable part installation, applicable airworthiness directive, applicable service bulletin). |
| AM.I.I.S2 | Check accuracy of a completed FAA Form 337 or 8130-3. |
| AM.I.I.S3 | Determine aircraft airworthiness by examining maintenance record entries. |
| AM.I.I.S4 | Prepare an airworthiness directives list for a specific airframe, aircraft engine, appliance or propeller. |
| AM.I.I.S5 | Compare an equipment list for an aircraft to equipment installed. |
| AM.I.I.S6 | Locate applicable FAA aircraft specifications and/or FAA type certificate data sheet for an aircraft or component. |
| AM.I.I.S7 | Locate aircraft flight control travel limits. |
| AM.I.I.S8 | Determine applicability of an airworthiness directive. |
| AM.I.I.S9 | Check a technical standard order part for the proper markings. |
| AM.I.I.S10 | Use a manufacturer's illustrated parts catalog to locate a specific part number and applicability. |
| AM.I.I.S11 | Locate supplemental type certificates applicable to a specific aircraft. |
| AM.I.I.S12 | Determine the conformity of aircraft instrument range markings and/or placarding. |
| AM.I.I.S13 | Determine approved replacement parts for installation on a given aircraft. |
| AM.I.I.S14 | Determine maximum allowable weight of a specific aircraft. |
| AM.I.I.S15 | Determine whether a given repair or alteration is major or minor. |
| AM.I.I.S16 | Locate mechanic address change notification procedures. |
| AM.I.I.S17 | Lookup applicable code of federal regulations (CFR) section(s) that answers questions posed regarding FAA mechanic privileges and limitations. |
| AM.I.I.S18 | Determine whether manufacturer's service instructions are required by regulation. |
| AM.I.I.S19 | List the various sources of approved data and of acceptable data. |
| AM.I.I.S20 | Explain the difference in requirements for a major repair/alteration and a minor repair/alteration. |
| AM.I.I.S21 | Explain the difference between "approved data" (required for major repair/alteration) and "acceptable data" (required for minor repair/alteration). |
| AM.I.I.S22 | Write a 100-hour inspection aircraft maintenance record entry. |

I. General

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| Subject | <i>J. Aviation Physics</i> |
| References | FAA-H-8083-30 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aviation physics. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.I.J.K1</i> | Matter and energy. |
| <i>AM.I.J.K2</i> | Work, power, force and motion. |
| <i>AM.I.J.K3</i> | Simple machines and mechanics. |
| <i>AM.I.J.K4</i> | Heat and pressure. |
| <i>AM.I.J.K5</i> | Bernoulli's Principle. |
| <i>AM.I.J.K6</i> | Newton's law of motion. |
| <i>AM.I.J.K7</i> | Gas law and fluid mechanics. |
| <i>AM.I.J.K8</i> | Theory of flight (aerodynamics). |
| <i>AM.I.J.K9</i> | Standard atmosphere and factors affecting atmospheric conditions. |
| <i>AM.I.J.K10</i> | Primary and Secondary aircraft flight controls. |
| <i>AM.I.J.K11</i> | Additional aerodynamic devices including vortex generators, wing fences, and stall strips. |
| <i>AM.I.J.K12</i> | Relationship between temperature, density, weight, and volume. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.I.J.R1</i> | The change in aircraft and engine performance due to density altitude. |
| <i>AM.I.J.R2</i> | Effect a repair can have on a flight surface. |
| <i>AM.I.J.R3</i> | Improper use of performance/testing data. |
| <i>AM.I.J.R4</i> | Hazards associated with using incorrect units (e.g., Celsius vs. Fahrenheit). |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.I.J.S1</i> | Convert temperature units (e.g., from Celsius to Fahrenheit). |
| <i>AM.I.J.S2</i> | Determine density altitude. |
| <i>AM.I.J.S3</i> | Determine pressure altitude. |
| <i>AM.I.J.S4</i> | Calculate force, area, or pressure in a specific application. |
| <i>AM.I.J.S5</i> | Demonstrate the mechanical advantage of various types of levers. |
| <i>AM.I.J.S6</i> | Design an inclined plane on paper, indicating the mechanical advantage. |
| <i>AM.I.J.S7</i> | Identify changes in pressure and velocity as a fluid passes through a venture. |

I. General

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| Subject | <i>K. Inspections</i> |
| References | FAA-H-8083-30, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft inspections. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.I.K.K1</i> | Measuring tools including calipers, micrometers and gauges. |
| <i>AM.I.K.K2</i> | Calibration and tool accuracy requirements. |
| <i>AM.I.K.K3</i> | Nondestructive testing. |
| <i>AM.I.K.K4</i> | Aircraft inspection programs. |
| <i>AM.I.K.K5</i> | Eddy-current inspection. |
| <i>AM.I.K.K6</i> | Ultra-sonic inspection. |
| <i>AM.I.K.K7</i> | Liquid Penetrant Inspection. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.I.K.R1</i> | Risk of damage due to magnetic particles. |
| <i>AM.I.K.R2</i> | Inaccurate use of precision measuring instruments. |
| <i>AM.I.K.R3</i> | Calibration requirements for precision measuring instruments. |
| <i>AM.I.K.R4</i> | The appropriate use of inspection techniques. |
| <i>AM.I.K.R5</i> | The risks associated with swapping components as a part of troubleshooting. |
| <i>AM.I.K.R6</i> | The precautions to be taken to prevent damage to aircraft components and/or test equipment when performing tests using an ohmmeter. |
| <i>AM.I.K.R7</i> | Inadequate troubleshooting procedures. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.I.K.S1</i> | Use Vernier calipers. |
| <i>AM.I.K.S2</i> | Use micrometers. |
| <i>AM.I.K.S3</i> | Use measurement gauges. |
| <i>AM.I.K.S4</i> | Perform a visual inspection. |
| <i>AM.I.K.S5</i> | Perform a dye penetrant inspection. |
| <i>AM.I.K.S6</i> | Describe the magnetic particle inspection process. |
| <i>AM.I.K.S7</i> | Inspect aircraft for compliance with an airworthiness directive (AD). |
| <i>AM.I.K.S8</i> | Identify nondestructive testing (NDT) methods for composite, surface metal and subsurface metal defects. |

I. General

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| Subject | <i>L. Human Factors</i> |
| References | FAA-H-8083-30 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with human factors. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.I.L.K1</i> | Safety culture and organizational factors. |
| <i>AM.I.L.K2</i> | Human error principles. |
| <i>AM.I.L.K3</i> | Event investigation. |
| <i>AM.I.L.K4</i> | Human performance and limitations. |
| <i>AM.I.L.K5</i> | Physical and social environment. |
| <i>AM.I.L.K6</i> | Communication/reporting of hazards. |
| <i>AM.I.L.K7</i> | Teamwork and leadership. |
| <i>AM.I.L.K8</i> | Professionalism and integrity. |
| <i>AM.I.L.K9</i> | Shift and task turnover. |
| <i>AM.I.L.K10</i> | Conditions/preconditions for unsafe acts. |
| <i>AM.I.L.K11</i> | Use of safety goggles, respirators, hearing protection, safety shoes, and other protective equipment and devices. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.I.L.R1</i> | Failure to report hazards. |
| <i>AM.I.L.R2</i> | Fatigue management and fitness for duty. |
| <i>AM.I.L.R3</i> | Maintenance-induced failure. |
| <i>AM.I.L.R4</i> | Common causes of maintenance-induced failures. |
| <i>AM.I.L.R5</i> | Non-invasive condition-monitoring technologies. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.I.L.S1</i> | File an Aviation Safety Reporting System (ASRS) report. |
| <i>AM.I.L.S2</i> | Brief a shift turnover for continuity of work. |
| <i>AM.I.L.S3</i> | Communicate a discrepancy found in a colleague's work. |
| <i>AM.I.L.S4</i> | Use protective safety equipment. |

II. Airframe Structures

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| Subject | A. Metallic Structures |
| References | FAA-H-8083-31, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft metallic structures. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.II.A.K1</i> | Inspection/testing of sheet metal structures. |
| <i>AM.II.A.K2</i> | Types of sheet metal defects. |
| <i>AM.II.A.K3</i> | Selection of sheet metals. |
| <i>AM.II.A.K4</i> | Layout, and/or forming of sheet metal. |
| <i>AM.II.A.K5</i> | Select Sheet metal rivets and hardware. |
| <i>AM.II.A.K6</i> | Heat treatment of aluminum. |
| <i>AM.II.A.K7</i> | Rivet layout. |
| <i>AM.II.A.K8</i> | Rivet installation. |
| <i>AM.II.A.K9</i> | Maintenance safety practices/precautions for sheet metal. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.II.A.R1</i> | Consequences of improper selection of repair materials. |
| <i>AM.II.A.R2</i> | The need for maintenance safety practices/precautions for sheet metal structures. |
| <i>AM.II.A.R3</i> | Using appropriate personal protective equipment to prevent injury when working with sheet metal structures. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.II.A.S1</i> | Install and remove solid rivets. |
| <i>AM.II.A.S2</i> | Inspect sheet metal. |
| <i>AM.II.A.S3</i> | Select and install special fasteners. |
| <i>AM.II.A.S4</i> | Properly use Manufacturer's Structural Repair Manual. |
| <i>AM.II.A.S5</i> | Prepare and install a patch to repair an aircraft or component. |
| <i>AM.II.A.S6</i> | Make a drawing of a repair including the number of rivets and size of sheet metal required. |
| <i>AM.II.A.S7</i> | Remove a patch that was installed with rivets. |
| <i>AM.II.A.S8</i> | Trim and form a piece of sheet metal to fit a prepared area. |
| <i>AM.II.A.S9</i> | Fabricate a complex aluminum part in accordance with a drawing. |
| <i>AM.II.A.S10</i> | Determine a rivet pattern for a specific repair given pitch, gauge, and edge distance. |
| <i>AM.II.A.S11</i> | Countersink holes in sheet metal to .010 tolerance. |
| <i>AM.II.A.S12</i> | Perform a repair on a damaged aluminum sheet. |
| <i>AM.II.A.S13</i> | Utilizing approved data, determine if damage is repairable or the item must be replaced. |

II. Airframe Structures

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| Subject | <i>B. Non-Metallic Structures</i> |
| References | FAA-H-8083-31, AC 43-13.1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft non-metallic structures. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.II.B.K1</i> | Wood structures: |
| <i>AM.II.B.K1a</i> | a. Inspection techniques, tools and practices for wood structures. |
| <i>AM.II.B.K1b</i> | b. Effects of moisture/humidity on wood. |
| <i>AM.II.B.K1c</i> | c. Types and/or general characteristics of wood used in aircraft structures. |
| <i>AM.II.B.K1d</i> | d. Permissible substitutes and/or other materials used in the construction and repair of wood structures. |
| <i>AM.II.B.K1e</i> | e. Acceptable and unacceptable wood defects. |
| <i>AM.II.B.K1f</i> | f. Wood repair techniques and practices. |
| <i>AM.II.B.K2</i> | Aircraft covering: |
| <i>AM.II.B.K2a</i> | a. Factors used in determining the proper type covering material. |
| <i>AM.II.B.K2b</i> | b. Types of approved aircraft covering material. |
| <i>AM.II.B.K2c</i> | c. Seams commonly used. |
| <i>AM.II.B.K2d</i> | d. Covering textile terms. |
| <i>AM.II.B.K2e</i> | e. Structure surface preparation. |
| <i>AM.II.B.K2f</i> | f. Covering methods commonly used. |
| <i>AM.II.B.K2g</i> | g. Covering means of attachment. |
| <i>AM.II.B.K2h</i> | h. Areas on aircraft covering most susceptible to deterioration. |
| <i>AM.II.B.K2i</i> | i. Aircraft covering preservation/restoration. |
| <i>AM.II.B.K2j</i> | j. Inspection of aircraft covering. |
| <i>AM.II.B.K2k</i> | k. Covering repair techniques and practices. |
| <i>AM.II.B.K3</i> | Composite and plastic structures and materials: |
| <i>AM.II.B.K3a</i> | a. Inspection/testing of composite structures. |
| <i>AM.II.B.K3b</i> | b. Types of composite structure defects. |
| <i>AM.II.B.K3c</i> | c. Composite structure fiber, core, and/or matrix materials. |
| <i>AM.II.B.K3d</i> | d. Composite materials storage practices and shelf life. |
| <i>AM.II.B.K3e</i> | e. Composite structure repair methods, techniques, and practices. |
| <i>AM.II.B.K3f</i> | f. Window inspection/types of defects. |
| <i>AM.II.B.K3g</i> | g. Window material storage and handling. |
| <i>AM.II.B.K3h</i> | h. Window installation procedures. |
| <i>AM.II.B.K3i</i> | i. Care and maintenance of windows. |
| <i>AM.II.B.K3j</i> | j. Window temporary and/or permanent repairs. |
| <i>AM.II.B.K3k</i> | k. Maintenance safety practices/precautions for composite materials/structures, and/or windows. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.II.B.R1</i> | Hazards associated with using the wrong type of glue or fasteners for aircraft structure. |
| <i>AM.II.B.R2</i> | Hazards of improper composite structure repairs. |
| <i>AM.II.B.R3</i> | Hazards associated with improper PPE use. |
| <i>AM.II.B.R4</i> | Factors involved to produce accurate aircraft drawings, including acceptable tolerances. |
| <i>AM.II.B.R5</i> | Importance of correct measuring and mixing of materials associated with composite construction. |

II. Airframe Structures

| Subject | <i>B. Non-Metallic Structures</i> |
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| <i>AM.II.B.R6</i> | Hazards associated with the use of materials that are not part of an approved repair system. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.II.B.S1</i> | Identify appropriate fasteners on composite structures. |
| <i>AM.II.B.S2</i> | Inspect and repair fiberglass. |
| <i>AM.II.B.S3</i> | Inspect composite, plastic, or glass-laminated structures. |
| <i>AM.II.B.S4</i> | Inspect acrylic type windshields. |
| <i>AM.II.B.S5</i> | Identify window enclosure materials. |
| <i>AM.II.B.S6</i> | Prepare composite surface for painting. |
| <i>AM.II.B.S7</i> | Inspect pilot seat and seatbelt to include technical standard order (TSO) markings. |
| <i>AM.II.B.S8</i> | Perform a tap test on composite material. |
| <i>AM.II.B.S9</i> | Locate and explain repair standard dimensions. |
| <i>AM.II.B.S10</i> | Locate and explain repair procedures for elongated bolt holes. |

II. Airframe Structures

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| Subject | C. Aircraft Finishes |
| References | FAA-H-8083-31, AC 43.13-1, 14 CFR part 45 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft finishes. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.II.C.K1</i> | Protection of airframe structures. |
| <i>AM.II.C.K2</i> | Primer materials. |
| <i>AM.II.C.K3</i> | Topcoat materials. |
| <i>AM.II.C.K4</i> | Surface preparation for a desired finishing material. |
| <i>AM.II.C.K5</i> | Effects of ambient conditions on finishing materials. |
| <i>AM.II.C.K6</i> | Effects of improper surface preparation on finishing materials. |
| <i>AM.II.C.K7</i> | Regulatory requirements for registration markings. |
| <i>AM.II.C.K8</i> | Inspection of aircraft finishes. |
| <i>AM.II.C.K9</i> | Safety practices/precautions when using finishing materials. |
| <i>AM.II.C.K10</i> | Fungicidal, butyrate, and/or nitrate dopes. |
| <i>AM.II.C.K11</i> | Finishing materials application techniques and practices. |
| <i>AM.II.C.K12</i> | Control surface balance considerations after refinishing. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.II.C.R1</i> | The applicant should be able to identify the health concerns when using paints and solvents. |
| <i>AM.II.C.R2</i> | The applicant should be able to identify the appropriate personal protective equipment for working with paints and solvents. |
| <i>AM.II.C.R3</i> | Consequences of improper application of or incompatible finishing materials. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.II.C.S1</i> | Determine location and/or size requirements for aircraft registration numbers. |
| <i>AM.II.C.S2</i> | Prepare composite surface for painting. |
| <i>AM.II.C.S3</i> | Identify finishing materials and appropriate thinners. |
| <i>AM.II.C.S4</i> | Layout and mask an aircraft identification marking ("N" number). |
| <i>AM.II.C.S5</i> | Prepare metal surface for painting. |
| <i>AM.II.C.S6</i> | Determine what paint system can be used on a given aircraft. |
| <i>AM.II.C.S7</i> | Apply etch solution and conversion coating. |
| <i>AM.II.C.S8</i> | Determine if control surfaces require rebalancing. |
| <i>AM.II.C.S9</i> | Identify types of protective finishes. |

II. Airframe Structures

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| Subject | <i>D. Welding</i> |
| References | FAA-H-8083-31, AC 43-13.1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft welding. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.II.D.K1</i> | Flame welding gasses. |
| <i>AM.II.D.K2</i> | Storage/handling of welding gasses. |
| <i>AM.II.D.K3</i> | Flame welding practices and techniques. |
| <i>AM.II.D.K4</i> | Inert-gas welding practices and techniques. |
| <i>AM.II.D.K5</i> | Purpose and types of shielding gasses. |
| <i>AM.II.D.K6</i> | Characteristics of acceptable welds. |
| <i>AM.II.D.K7</i> | Characteristics of unacceptable welds. |
| <i>AM.II.D.K8</i> | Types of steel tubing welding repairs. |
| <i>AM.II.D.K9</i> | Procedures for weld repairs. |
| <i>AM.II.D.K10</i> | Soldering preparation, types of solder, and/or flux usage. |
| <i>AM.II.D.K11</i> | Welding and/or soldering safety practices/precautions. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.II.D.R1</i> | Safety procedures for handling, storage, and use of compressed gas bottles. |
| <i>AM.II.D.R2</i> | Safety procedures in the use of electric welding equipment. |
| <i>AM.II.D.R3</i> | Factors associated with the issuance of a "Hot Work" permit. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.II.D.S1</i> | Inspect and check welds. |
| <i>AM.II.D.S2</i> | Solder aircraft wire and connectors. |

II. Airframe Structures

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| Subject | <i>E. Assembly and Rigging</i> |
| References | FAA-H-8083-31, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft assembly and rigging. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.II.E.K1</i> | Control cables. |
| <i>AM.II.E.K2</i> | Control cable maintenance. |
| <i>AM.II.E.K3</i> | Cable connectors. |
| <i>AM.II.E.K4</i> | Cable guides. |
| <i>AM.II.E.K5</i> | Control stops. |
| <i>AM.II.E.K6</i> | Push pull tubes. |
| <i>AM.II.E.K7</i> | Torque tubes. |
| <i>AM.II.E.K8</i> | Bell cranks. |
| <i>AM.II.E.K9</i> | Flutter and flight control balance. |
| <i>AM.II.E.K10</i> | Rigging of airplane or rotorcraft flight controls. |
| <i>AM.II.E.K11</i> | Airplane or rotorcraft flight controls and/or stabilizer systems. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.II.E.R1</i> | The use of and correct interpretation of a cable tension chart. |
| <i>AM.II.E.R2</i> | Possible consequences of improperly rigging aircraft flight controls. |
| <i>AM.II.E.R3</i> | The selection and use of lifting equipment used to move aircraft components into place for assembly. |
| <i>AM.II.E.R4</i> | The importance of maintaining a calibration schedule for cable tension meters and other rigging equipment. |
| <i>AM.II.E.R5</i> | The correct use and interpretation of cable tensionmeters. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.II.E.S1</i> | Locate and explain the procedures needed to rig a helicopter. |
| <i>AM.II.E.S2</i> | Identify fixed-wing aircraft rigging adjustment locations. |
| <i>AM.II.E.S3</i> | Identify control surfaces that provide movement about an aircraft's axes. |
| <i>AM.II.E.S4</i> | Locate and explain an aircraft's leveling methods and procedures. |
| <i>AM.II.E.S5</i> | Verify alignment of an empennage. |
| <i>AM.II.E.S6</i> | Inspect a primary and secondary flight control surface. |
| <i>AM.II.E.S7</i> | Remove and/or reinstall a primary flight control surface. |
| <i>AM.II.E.S8</i> | Assemble aircraft components. |
| <i>AM.II.E.S9</i> | Inspect primary control cables. |
| <i>AM.II.E.S10</i> | Install swaged cable terminals. |
| <i>AM.II.E.S11</i> | Remove and reinstall a primary flight control cable. |
| <i>AM.II.E.S12</i> | Adjust push-pull flight control systems. |
| <i>AM.II.E.S13</i> | Balance a flight control surface. |
| <i>AM.II.E.S14</i> | Determine allowable axial play limits for a flight control bearing. |

II. Airframe Structures

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| Subject | <i>F. Airframe Inspection</i> |
| References | FAAA-H-8083-31, AC 43-13.1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with airframe inspections. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.II.F.K1</i> | Inspection requirements under 14 CFR Part 91. |
| <i>AM.II.F.K2</i> | Maintenance recordkeeping requirements under 14 CFR Part 43. |
| <i>AM.II.F.K3</i> | Requirements for complying with airworthiness directives. |
| <i>AM.II.F.K4</i> | Compliance with service letters, service bulletins, or instructions for continued airworthiness. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.II.F.R1</i> | Misinterpretation of inspection instructions which can lead to over or under maintenance being performed. |
| <i>AM.II.F.R2</i> | Identify the limitations of visual inspection and where its use would not be applicable. |
| <i>AM.II.F.R3</i> | Safety considerations when performing radiographic inspections. |
| <i>AM.II.F.R4</i> | The selection and use of the proper checklist and other maintenance publications. |
| <i>AM.II.F.R5</i> | Incorrect maintenance record documentation. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.II.F.S1</i> | Accomplish an airframe conformity check. |
| <i>AM.II.F.S2</i> | Perform an airframe inspection to include a records check. |
| <i>AM.II.F.S3</i> | Perform a portion of a 100-hour/annual inspection in accordance with part 43. |
| <i>AM.II.F.S4</i> | Perform a portion of the conformity inspection on an airframe. |
| <i>AM.II.F.S5</i> | Enter results of a 100-hour inspection in a maintenance record. |
| <i>AM.II.F.S6</i> | Determine compliance with a specific airworthiness directive. |
| <i>AM.II.F.S7</i> | Provide a checklist for conducting a 100-hour inspection. |
| <i>AM.II.F.S8</i> | Determine if any additional inspections are required during particular 100 hour; i.e. 300 hour filter replacement.. |

III. Airframe Systems

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| Subject | A. Landing Gear |
| References | FAA-H-8083-31, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft landing gear. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.III.A.K1</i> | Fixed and retractable landing gear systems. |
| <i>AM.III.A.K2</i> | Fixed and retractable landing gear components. |
| <i>AM.III.A.K3</i> | Landing gear strut servicing/lubrication. |
| <i>AM.III.A.K4</i> | Steering systems. |
| <i>AM.III.A.K5</i> | Landing gear and warning system inspection, check and servicing. |
| <i>AM.III.A.K6</i> | Brake assembly inspection. |
| <i>AM.III.A.K7</i> | Anti-skid system components and operation. |
| <i>AM.III.A.K8</i> | Wheel, brake and tire construction. |
| <i>AM.III.A.K9</i> | Tire storage, care, and/or servicing. |
| <i>AM.III.A.K10</i> | Landing gear and/or tire and wheel safety. |
| <i>AM.III.A.K11</i> | Position indicators. |
| <i>AM.III.A.K12</i> | Brake actuating systems. |
| | Skid shoe and tube inspection. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.III.A.R1</i> | Landing gear and/or tire and wheel safety practices/precautions. |
| <i>AM.III.A.R2</i> | Hazards associated with improper use of aircraft jacks. |
| <i>AM.III.A.R3</i> | Hazards associated with high pressure gasses. |
| <i>AM.III.A.R4</i> | Hazards associated with the storage and handling of hydraulic fluids. |
| <i>AM.III.A.R5</i> | Correctly relieving pressure prior to strut or system disassembly. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.III.A.S1</i> | Inspect and service landing gear. |
| <i>AM.III.A.S2</i> | Inspect, check and service an anti-skid system. |
| <i>AM.III.A.S3</i> | Locate and explain procedures for checking operation of an anti-skid warning system. |
| <i>AM.III.A.S4</i> | Locate and explain troubleshooting procedures for an anti-skid system. |
| <i>AM.III.A.S5</i> | Jack aircraft. |
| <i>AM.III.A.S6</i> | Describe a landing gear retraction check. |
| <i>AM.III.A.S7</i> | Inspect wheels, brakes and tires. |
| <i>AM.III.A.S8</i> | Install brake lining(s) or brake assembly. |
| <i>AM.III.A.S9</i> | Service landing gear and/or oil shock strut. |
| <i>AM.III.A.S10</i> | Bleed air from a hydraulic brake system. |
| <i>AM.III.A.S11</i> | Troubleshoot hydraulic brake systems. |
| <i>AM.III.A.S12</i> | Remove, inspect, and/or install a wheel brake assembly. |
| <i>AM.III.A.S13</i> | Inspect a tire for defects. |
| <i>AM.III.A.S14</i> | Explain tire storage practices. |
| <i>AM.III.A.S15</i> | Replace air/oil shock strut air valve. |
| <i>AM.III.A.S16</i> | Troubleshoot an air/oil shock strut. |
| <i>AM.III.A.S17</i> | Service a nosewheel shimmy damper. |
| <i>AM.III.A.S18</i> | Adjust nosewheel steering system. |

III. Airframe Systems

| Subject | A. Landing Gear |
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| <i>AM.III.A.S19</i> | Inspect landing gear alignment. |
| <i>AM.III.A.S20</i> | Replace master brake cylinder packing seals. |
| <i>AM.III.A.S21</i> | Troubleshoot landing gear retract system. |
| <i>AM.III.A.S22</i> | Troubleshoot aircraft steering system. |
| <i>AM.III.A.S23</i> | Identify landing gear position and warning system components. |
| <i>AM.III.A.S24</i> | Troubleshoot landing gear position and/or warning systems. |
| <i>AM.III.A.S25</i> | Inspect and/or repair landing gear position indicating system. |
| <i>AM.III.A.S26</i> | Describe the sequence of operation for a landing gear warning system. |
| <i>AM.III.A.S27</i> | Remove, install, and/or adjust a landing gear down-lock switch. |
| <i>AM.III.A.S28</i> | Inspect a brake for serviceability. |
| <i>AM.III.A.S29</i> | Troubleshoot nosewheel shimmy. |
| <i>AM.III.A.S30</i> | Inspect tube landing gear for damage and determine if the skid is serviceable. |

III. Airframe Systems

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| Subject | <i>B. Hydraulic and Pneumatic Systems</i> |
| References | FAA-H-8083-31, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft hydraulic and pneumatic power systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.III.B.K1</i> | Hydraulic system components and fluids. |
| <i>AM.III.B.K2</i> | Hydraulic system operation. |
| <i>AM.III.B.K3</i> | Hydraulic system servicing requirements. |
| <i>AM.III.B.K4</i> | Hydraulic system inspection, check, servicing and troubleshooting. |
| <i>AM.III.B.K5</i> | Pneumatic system types and components. |
| <i>AM.III.B.K6</i> | Pneumatic system servicing requirements. |
| <i>AM.III.B.K7</i> | Servicing, function, and/or operation of accumulators. |
| <i>AM.III.B.K8</i> | Types of hydraulic/pneumatic seals and/or fluid/seal compatibility. |
| <i>AM.III.B.K9</i> | Servicing hydraulic and/or pneumatic systems. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.III.B.R1</i> | Correctly relieving system pressure prior to system servicing or disassembly. |
| <i>AM.III.B.R2</i> | Hazards association with high pressure gasses. |
| <i>AM.III.B.R3</i> | Hazards associated with the storage and handling of hydraulic fluids. |
| <i>AM.III.B.R4</i> | Correctly relieving pressure prior to strut or system disassembly. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.III.B.S1</i> | Identify different types of hydraulic fluids. |
| <i>AM.III.B.S2</i> | Identify different packing seals. |
| <i>AM.III.B.S3</i> | Install seals in a hydraulic component. |
| <i>AM.III.B.S4</i> | Remove and install a selector valve. |
| <i>AM.III.B.S5</i> | Check a pressure regulator and adjust as necessary. |
| <i>AM.III.B.S6</i> | Remove, clean, and install a hydraulic system filter. |
| <i>AM.III.B.S7</i> | Service a hydraulic system accumulator. |
| <i>AM.III.B.S8</i> | Service a hydraulic system reservoir. |
| <i>AM.III.B.S9</i> | Remove, install, and check an engine-driven hydraulic pump. |
| <i>AM.III.B.S10</i> | Troubleshoot hydraulic power system. |
| <i>AM.III.B.S11</i> | Purge air from a hydraulic system. |
| <i>AM.III.B.S12</i> | Remove and/or install a system pressure relief valve. |
| <i>AM.III.B.S13</i> | Troubleshoot a hydraulic power system leak. |
| <i>AM.III.B.S14</i> | Troubleshoot a pneumatic power system leak. |
| <i>AM.III.B.S15</i> | Service pneumatic brake system air bottles. |
| <i>AM.III.B.S16</i> | Inspect a pneumatic air bottle for condition and determine service life (hydrostatic testing). |
| <i>AM.III.B.S17</i> | Adjust a pneumatic power system relief valve. |
| <i>AM.III.B.S18</i> | Locate and explain hydraulic fluid servicing instructions and identify/select fluid for a given aircraft. |
| <i>AM.III.B.S19</i> | Identify and explain proper installation procedures for a seal, backup ring, and/or gasket. |
| <i>AM.III.B.S20</i> | Locate and explain procedures for checking pneumatic/bleed air overheat warning systems. |

III. Airframe Systems

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| Subject | C. Cabin Atmosphere Control |
| References | FAA-H-8083-31, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft cabin atmosphere control. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.III.C.K1</i> | Pressurization systems. |
| <i>AM.III.C.K2</i> | Bleed air heating. |
| <i>AM.III.C.K3</i> | Aircraft instrument cooling. |
| <i>AM.III.C.K4</i> | Exhaust heat exchanger and/or system component(s) function, operation, and/or inspection procedures. |
| <i>AM.III.C.K5</i> | Combustion heater and/or system component(s) function, operation, and/or inspection procedures. |
| <i>AM.III.C.K6</i> | Vapor-cycle system and/or system component(s) operation, servicing and/or inspection procedures. |
| <i>AM.III.C.K7</i> | Air-cycle system and/or system component(s) operation and/or inspection procedures. |
| <i>AM.III.C.K8</i> | Cabin pressurization and/or system component(s) operation and/or inspection procedures. |
| <i>AM.III.C.K9</i> | Types of oxygen systems and/or oxygen system component(s) operation. |
| <i>AM.III.C.K10</i> | Oxygen system maintenance procedures. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.III.C.R1</i> | Oxygen system maintenance procedures and safety precautions. |
| <i>AM.III.C.R2</i> | Environmental precautions for dealing with vapor-cycle refrigerant. |
| <i>AM.III.C.R3</i> | Safety precautions when handling, or performing maintenance, on chemical oxygen generating systems. |
| <i>AM.III.C.R4</i> | Safety precautions associated with the storage, handling and use of compressed gas cylinders. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.III.C.S1</i> | Inspect, check, service and troubleshoot an oxygen system. |
| <i>AM.III.C.S2</i> | Locate and explain procedures for troubleshooting a cabin heater. |
| <i>AM.III.C.S3</i> | Locate and explain the procedures for protecting a refrigerant (vapor-cycle) system from contamination during replacement of a component. |
| <i>AM.III.C.S4</i> | Identify sources of contamination in a refrigerant (vapor-cycle) system. |
| <i>AM.III.C.S5</i> | Locate and explain the procedures for checking a combustion heater fuel system for leaks. |
| <i>AM.III.C.S6</i> | Identify and describe the units in a refrigerant (vapor-cycle) system in relation to each other. |
| <i>AM.III.C.S7</i> | Locate and explain the servicing procedures for a vapor-cycle air conditioning system. |
| <i>AM.III.C.S8</i> | Locate and explain the inspection requirements for a cabin heater system equipped with an exhaust heat exchanger. |
| <i>AM.III.C.S9</i> | Locate and explain the procedures for inspecting an outflow valve in a pressurization system. |
| <i>AM.III.C.S10</i> | Locate and explain operating instructions for a refrigerant (vapor-cycle) system. |
| <i>AM.III.C.S11</i> | Locate and explain the instructions for the Inspection of a pressurization system. |
| <i>AM.III.C.S12</i> | Troubleshoot an air-cycle air conditioning system. |

III. Airframe Systems

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| Subject | <i>D. Aircraft Instruments</i> |
| References | 14 CFR parts 43 and 91, FAA-H-8083-31, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft instruments. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.III.D.K1</i> | Annunciator indicating systems and the meaning of warning, caution, and advisory lights. |
| <i>AM.III.D.K2</i> | Magnetic compass operation. |
| <i>AM.III.D.K3</i> | Magnetic compass swinging procedures. |
| <i>AM.III.D.K4</i> | Pressure indicating instruments. |
| <i>AM.III.D.K5</i> | Temperature indicating instruments. |
| <i>AM.III.D.K6</i> | Position indication sensors and instruments. |
| <i>AM.III.D.K7</i> | Gyroscopic instruments. |
| <i>AM.III.D.K8</i> | Direction indicating instruments. |
| <i>AM.III.D.K9</i> | Instrument pneumatic systems. |
| <i>AM.III.D.K10</i> | Pitot static system. |
| <i>AM.III.D.K11</i> | Fuel quantity indicating systems. |
| <i>AM.III.D.K12</i> | Instrument range markings. |
| <i>AM.III.D.K13</i> | Electronic displays. |
| <i>AM.III.D.K14</i> | Electrostatic sensitive devices. |
| <i>AM.III.D.K15</i> | Built in test equipment. |
| <i>AM.III.D.K16</i> | Central maintenance computer system. |
| <i>AM.III.D.K17</i> | Electronic flight instrument system. |
| <i>AM.III.D.K18</i> | Engine indication and crew alerting system. |
| <i>AM.III.D.K19</i> | Heads-up guidance system. |
| <i>AM.III.D.K20</i> | 14 CFR parts 43 and/or 91 requirements for static system checks. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.III.D.R1</i> | Using caution not to exceed the instrument limitations during testing which can lead to instrument failure. |
| <i>AM.III.D.R2</i> | The consequences of not taking appropriate actions in response to a warning or caution annunciator light. |
| <i>AM.III.D.R3</i> | Safety precautions to be taken when performing maintenance on equipment identified as electrostatic sensitive. |
| <i>AM.III.D.R4</i> | Handling precautions for mechanical gyros or instruments containing mechanical gyros. |
| <i>AM.III.D.R5</i> | Precautions for performing pitot/static systems test to prevent instrument damage. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.III.D.S1</i> | Perform a static system pressure system leak test. |
| <i>AM.III.D.S2</i> | Remove and install instruments. |
| <i>AM.III.D.S3</i> | Install range marks on an instrument glass. |
| <i>AM.III.D.S4</i> | Determine barometric pressure using an altimeter. |
| <i>AM.III.D.S5</i> | Check for proper indication of a manifold pressure gauge. |
| <i>AM.III.D.S6</i> | Inspect a magnetic compass. |
| <i>AM.III.D.S7</i> | Locate and explain the procedure for troubleshooting vacuum operated instruments. |
| <i>AM.III.D.S8</i> | Select proper altimeter for installation on a given aircraft. |
| <i>AM.III.D.S9</i> | Check a heated pitot tube for proper operation. |
| <i>AM.III.D.S10</i> | Identify exhaust gas temperature system components. |

III. Airframe Systems

| Subject | <i>D. Aircraft Instruments</i> |
|---------------------|--|
| <i>AM.III.D.S11</i> | Inspect a vacuum system filter for serviceability. |
| <i>AM.III.D.S12</i> | Check an altimeter system for certification for instrument flight rules (IFR). |
| <i>AM.III.D.S13</i> | Adjust gyro/instrument air pressure. |
| <i>AM.III.D.S14</i> | Describe the effects of gyro precession on a directional gyro or vertical gyro system. |
| <i>AM.III.D.S15</i> | Locate and explain the purpose of an aircraft's alternate air (static) source. |
| <i>AM.III.D.S16</i> | Locate and explain the adjustment procedures for a stall warning system. |

III. Airframe Systems

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|------------------------|---|
| Subject | <i>E. Communication and Navigation</i> |
| References | 14 CFR part 91, FAA-H-8083-31, AC 43.13-1, AC 43.13-2 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft communication and navigation systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.III.E.K1</i> | Radio operating principles. |
| <i>AM.III.E.K2</i> | Radio components. |
| <i>AM.III.E.K3</i> | Antennas, antenna inspection requirements, and mounting in the pressure vessel area of a pressurized aircraft. |
| <i>AM.III.E.K4</i> | Interphone and intercom systems. |
| <i>AM.III.E.K5</i> | Systems including very high frequency (VHF), high frequency (HF) and SATCOM systems. |
| <i>AM.III.E.K6</i> | Aircraft communication addressing and reporting system (ACARS). |
| <i>AM.III.E.K7</i> | Audio integration system (AIS). |
| <i>AM.III.E.K8</i> | Emergency locator transmitter (ELT). |
| <i>AM.III.E.K9</i> | Automatic direction finder (ADF). |
| <i>AM.III.E.K10</i> | Very high frequency omnidirectional radio range (VOR). |
| <i>AM.III.E.K11</i> | Distance measuring equipment (DME). |
| <i>AM.III.E.K12</i> | Instrument landing system (ILS). |
| <i>AM.III.E.K13</i> | Global positioning system (GPS). |
| <i>AM.III.E.K14</i> | Inertial navigation system (INS). |
| <i>AM.III.E.K15</i> | Traffic collision avoidance system (TCAS). |
| <i>AM.III.E.K16</i> | Weather radar. |
| <i>AM.III.E.K17</i> | Ground proximity warning systems (GPWS). |
| <i>AM.III.E.K18</i> | Warning systems. |
| <i>AM.III.E.K19</i> | Auto-pilot theory, components and operation. |
| <i>AM.III.E.K20</i> | Auto-throttle theory, components and operation. |
| <i>AM.III.E.K21</i> | Stability augmentation. |
| <i>AM.III.E.K22</i> | Antennas and antenna inspection requirements. |
| <i>AM.III.E.K23</i> | Automatic Dependent Surveillance Broadcast (ADS-B). |
| <i>AM.III.E.K24</i> | Radio Altimeter (RA). |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.III.E.R1</i> | Using caution when testing ELT systems so as not to not give false signals to the ATC system. |
| <i>AM.III.E.R2</i> | Precautions to be taken when performing maintenance on high power/high frequency systems such as weather radar and SATCOM. |
| <i>AM.III.E.R3</i> | Improper wire harness routing and interference consequences. |
| <i>AM.III.E.R4</i> | Safety and interference considerations when mounting antennas. |
| <i>AM.III.E.R5</i> | Electro-static discharge considerations. |
| <i>AM.III.E.R6</i> | Correctly reading a wiring diagram so as to not damage a component or system. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.III.E.S1</i> | Locate and explain return-to-service instructions for an autopilot system. |
| <i>AM.III.E.S2</i> | Locate and explain autopilot inspection procedures. |
| <i>AM.III.E.S3</i> | List autopilot major components. |
| <i>AM.III.E.S4</i> | Locate and identify navigation and/or communication antennas. |
| <i>AM.III.E.S5</i> | Check very high frequency (VHF) communications for operation. |

III. Airframe Systems

| Subject | <i>E. Communication and Navigation</i> |
|---------------------|---|
| <i>AM.III.E.S6</i> | Inspect a coaxial cable installation for security. |
| <i>AM.III.E.S7</i> | Check an emergency locator transmitter for operation. |
| <i>AM.III.E.S8</i> | Inspect ELT batteries for expiration date and locate proper testing procedures. |
| <i>AM.III.E.S9</i> | Inspect electronic equipment mounting base for security and condition. |
| <i>AM.III.E.S10</i> | Inspect electronic equipment shock mount bonding jumpers for resistance. |
| <i>AM.III.E.S11</i> | Inspect static discharge wicks for security and/or resistance. |
| <i>AM.III.E.S12</i> | Inspect a radio installation for security. |
| <i>AM.III.E.S13</i> | Locate and explain the installation procedures for antennas including mounting and coaxial connections. |
| <i>AM.III.E.S14</i> | Make a list of required placards for communication and navigation avionic equipment. |
| <i>AM.III.E.S15</i> | Locate and explain the adjustment procedures for a stall warning system. |

III. Airframe Systems

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|------------------------|---|
| Subject | <i>F. Aircraft Fuel</i> |
| References | FAA-H-8083-31, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft fuel. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.III.F.K1</i> | Fuel system types. |
| <i>AM.III.F.K2</i> | Fuel system components including filters and selector valves. |
| <i>AM.III.F.K3</i> | Aircraft fuel tanks. |
| <i>AM.III.F.K4</i> | Fuel flow. |
| <i>AM.III.F.K5</i> | Fuel transfer and defueling. |
| <i>AM.III.F.K6</i> | Fuel dump systems. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.III.F.R1</i> | Hazards associated with fuel system maintenance. |
| <i>AM.III.F.R2</i> | Understanding the risks of fuel system contamination and prevention procedures. |
| <i>AM.III.F.R3</i> | Precautions to be taken during fuel system maintenance in case of a spill. |
| <i>AM.III.F.R4</i> | Precautions/considerations that should be taken when performing fuel system maintenance requiring fuel tank entry. |
| <i>AM.III.F.R5</i> | Observing proper procedure and cautions when defueling aircraft for maintenance. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.III.F.S1</i> | Inspect, check, troubleshoot, or repair a fuel system. |
| <i>AM.III.F.S2</i> | Inspect a metal fuel tank. |
| <i>AM.III.F.S3</i> | Inspect a bladder fuel tank. |
| <i>AM.III.F.S4</i> | Inspect an integral fuel tank. |
| <i>AM.III.F.S5</i> | Check manually operated fuel valves for proper operation and/or leaks. |
| <i>AM.III.F.S6</i> | Troubleshoot a fuel valve problem. |
| <i>AM.III.F.S7</i> | Drain fuel system sumps. |
| <i>AM.III.F.S8</i> | Service a fuel system strainer. |
| <i>AM.III.F.S9</i> | Determine the increment of calibration of a direct reading fuel indicating system. |
| <i>AM.III.F.S10</i> | Inspect a remote indicating fuel quantity system. |
| <i>AM.III.F.S11</i> | Locate and explain fuel system operating instructions. |
| <i>AM.III.F.S12</i> | Locate and explain fuel system inspection procedures. |
| <i>AM.III.F.S13</i> | Locate and explain fuel system crossfeed procedures. |
| <i>AM.III.F.S14</i> | Locate and explain fuel system required placards. |
| <i>AM.III.F.S15</i> | Locate and explain fuel system defueling procedures. |
| <i>AM.III.F.S16</i> | Troubleshoot fuel pressure warning system. |
| <i>AM.III.F.S17</i> | Locate and explain troubleshooting procedures for fuel temperature systems. |
| <i>AM.III.F.S18</i> | Remove and/or install a fuel quantity transmitter. |
| <i>AM.III.F.S19</i> | Troubleshoot fuel quantity indicating system. |
| <i>AM.III.F.S20</i> | Troubleshoot aircraft fuel systems. |
| <i>AM.III.F.S21</i> | Remove and install a fuel selector valve. |

III. Airframe Systems

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| Subject | <i>G. Aircraft Electrical</i> |
| References | FAA-H-8083-31, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft electrical systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.III.G.K1</i> | Generators, DC generation systems, DC power distribution systems. |
| <i>AM.III.G.K2</i> | Alternators, AC generation systems, AC power distribution systems. |
| <i>AM.III.G.K3</i> | Starter generators. |
| <i>AM.III.G.K4</i> | Constant Speed Drive (CSD) and Integrated Drive Generator (IDG) systems and components. |
| <i>AM.III.G.K5</i> | Voltage regulators, over-volt and over-current protection. |
| <i>AM.III.G.K6</i> | Inverter systems. |
| <i>AM.III.G.K7</i> | Aircraft wiring sizes, types and selection. |
| <i>AM.III.G.K8</i> | Use of derating factors in switch selection. |
| <i>AM.III.G.K9</i> | Aircraft wiring shielding. |
| <i>AM.III.G.K10</i> | Aircraft lightning protection. |
| <i>AM.III.G.K11</i> | Aircraft bonding. |
| <i>AM.III.G.K12</i> | Aircraft lighting systems. |
| <i>AM.III.G.K13</i> | Using an electrical system troubleshooting table. |
| <i>AM.III.G.K14</i> | What flight deck effect might result from a shorted circuit. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.III.G.R1</i> | Using caution when testing/troubleshooting electrical systems or components to avoid damage to the system or components. |
| <i>AM.III.G.R2</i> | Precautions when connecting or disconnecting external power. |
| <i>AM.III.G.R3</i> | Personal safety steps that should be taken when performing maintenance on energized circuits/systems. |
| <i>AM.III.G.R4</i> | Precautions to take when performing maintenance in areas containing aircraft wiring to prevent wiring damage. |
| <i>AM.III.G.R5</i> | Safety concerns when routing and securing wires and wire bundles. |
| <i>AM.III.G.R6</i> | The use of the wrong size wire in an electrical circuit. |
| <i>AM.III.G.R7</i> | The hazards created by the incorrect selection or installation of wire terminals. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.III.G.S1</i> | Inspect aircraft wiring to verify installation and routing. |
| <i>AM.III.G.S2</i> | Perform wire terminating and splicing. |
| <i>AM.III.G.S3</i> | Perform build-up and repair of connectors. |
| <i>AM.III.G.S4</i> | Interpret wiring circuit diagrams. |
| <i>AM.III.G.S5</i> | Solder aircraft wiring. |
| <i>AM.III.G.S6</i> | Troubleshoot an airframe electrical circuit. |
| <i>AM.III.G.S7</i> | Install, check and service airframe electrical wiring, switches, and protective devices. |
| <i>AM.III.G.S8</i> | Secure wire bundles. |
| <i>AM.III.G.S9</i> | Determine an electrical load in a given aircraft system. |
| <i>AM.III.G.S10</i> | Install bonding jumpers. |
| <i>AM.III.G.S11</i> | Check output voltage of a DC generator. |
| <i>AM.III.G.S12</i> | Check the resistance of an electrical system component. |
| <i>AM.III.G.S13</i> | Explain generator brush serviceability and brush spring tension. |

III. Airframe Systems

| Subject | <i>G. Aircraft Electrical</i> |
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| <i>AM.III.G.S14</i> | Inspect and check anti-collision, position, and/or landing lights for proper operation. |
| <i>AM.III.G.S15</i> | Identify components in an electrical system. |
| <i>AM.III.G.S16</i> | Troubleshoot a DC electrical system supplied by an AC electrical system. |
| <i>AM.III.G.S17</i> | Identify components in an electrical schematic where AC is rectified to a DC voltage. |
| <i>AM.III.G.S18</i> | Visually identify and describe operation of components in a constant speed drive (CSD) or integrated drive generator (IDG). |
| <i>AM.III.G.S19</i> | Troubleshoot an aircraft system or component using an aircraft drawing. |
| <i>AM.III.G.S20</i> | Perform a continuity test to verify the condition of a conductor and explain a normal test result and one indicating a fault. |
| <i>AM.III.G.S21</i> | Perform a test on a conductor for a short to ground and explain a normal test result and one indicating a fault. |
| <i>AM.III.G.S22</i> | Perform a test on a conductor for a short to other conductors and explain a normal test result and one indicating a fault. |
| <i>AM.III.G.S23</i> | Explain an intermittent electric trim failure. |

III. Airframe Systems

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| Subject | <i>H. Ice and Rain Control</i> |
| References | FAA-H-8083-31, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft ice and rain control systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.III.H.K1</i> | Aircraft icing causes/effects. |
| <i>AM.III.H.K2</i> | Ice detection systems. |
| <i>AM.III.H.K3</i> | Anti-ice systems and components. |
| <i>AM.III.H.K4</i> | De-ice systems and components. |
| <i>AM.III.H.K5</i> | Wiper blade, electric, and pneumatic bleed air rain control systems. |
| <i>AM.III.H.K6</i> | Anti-icing and/or de-icing system maintenance. |
| <i>AM.III.H.K7</i> | Types of rain removal systems and/or operating characteristics. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.III.H.R1</i> | The hazards of possible damage to system components during system testing or maintenance. |
| <i>AM.III.H.R2</i> | The storage and handling of deicing fluids. |
| <i>AM.III.H.R3</i> | The selection and use of appropriate cleaning materials for heated windshields. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.III.H.S1</i> | Inspect or operationally check pitot-static anti-ice system. |
| <i>AM.III.H.S2</i> | Inspect or operationally check deicer boot. |
| <i>AM.III.H.S3</i> | Clean a pneumatic deicer boot. |
| <i>AM.III.H.S4</i> | Check an electrically-heated pitot tube system. |
| <i>AM.III.H.S5</i> | Locate and explain procedures for troubleshooting an electrically-heated pitot system. |
| <i>AM.III.H.S6</i> | Inspect thermal anti-ice systems. |
| <i>AM.III.H.S7</i> | Check an electrically-heated windshield. |
| <i>AM.III.H.S8</i> | Inspect an electrically-operated windshield wiper system. |
| <i>AM.III.H.S9</i> | Check an electrically or hydraulically-operated windshield wiper system. |
| <i>AM.III.H.S10</i> | Replace blades on a windshield wiper system. |
| <i>AM.III.H.S11</i> | Check pneumatic rain removal system. |
| <i>AM.III.H.S12</i> | Check a rain repellent system. |
| <i>AM.III.H.S13</i> | Locate and explain inspection procedures for chemical rain protection of a windscreen. |

III. Airframe Systems

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|------------------------|---|
| Subject | <i>I. Overheat and Fire Detection, Protection, and Suppression</i> |
| References | FAA-H-8083-31, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft overheat and fire detection, protection, and suppression systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.III.I.K1</i> | Types of fires and aircraft fire zones. |
| <i>AM.III.I.K2</i> | Fire detection and warning systems. |
| <i>AM.III.I.K3</i> | Fire detection system maintenance and inspection. |
| <i>AM.III.I.K4</i> | Smoke and carbon monoxide detection systems. |
| <i>AM.III.I.K5</i> | Fire extinguishing agents and types of extinguishing systems. |
| <i>AM.III.I.K6</i> | Fire extinguishing system maintenance and inspection requirements. |
| <i>AM.III.I.K7</i> | Using appropriate caution to avoid personal injury when working on or testing fire extinguishing systems. |
| <i>AM.III.I.K8</i> | Hazards of electro-static discharge. |
| <i>AM.III.I.K9</i> | Hazards of fire suppressant systems. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.III.I.R1</i> | Precautions to take when performing maintenance on circuits associated with fire bottle squibs. |
| <i>AM.III.I.R2</i> | Using appropriate caution to avoid personal injury when working on or testing fire extinguishing systems. |
| <i>AM.III.I.R3</i> | Hazards of electro-static discharge. |
| <i>AM.III.I.R4</i> | Hazards of fire suppressant systems. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.III.I.S1</i> | Troubleshoot an aircraft fire detection or extinguishing system. |
| <i>AM.III.I.S2</i> | Determine proper container pressure for an installed fire extinguisher system. |
| <i>AM.III.I.S3</i> | Identify maintenance procedures for fire detection and/or extinguishing system(s) and/or system component(s). |
| <i>AM.III.I.S4</i> | Inspect and/or check a smoke and/or toxic gas detection system. |
| <i>AM.III.I.S5</i> | Locate and explain inspection procedures for carbon monoxide detectors. |
| <i>AM.III.I.S6</i> | Locate and explain the procedures for checking a smoke detection system. |
| <i>AM.III.I.S7</i> | Locate and explain the procedures for inspecting a thermal switch fire detection system. |
| <i>AM.III.I.S8</i> | Inspect fire protection system cylinders and check for hydrostatic test date. |
| <i>AM.III.I.S9</i> | Inspect fire detection/protection system. |
| <i>AM.III.I.S10</i> | Check fire detection/protection system. |
| <i>AM.III.I.S11</i> | Inspect fire extinguishing agent bottle discharge cartridge. |
| <i>AM.III.I.S12</i> | Inspect fire-extinguisher bottle or cylinder for hydrostatic test date. |

III. Airframe Systems

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| Subject | <i>J. Rotorcraft Fundamentals</i> |
| References | FAA-H-8083-31, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with rotorcraft systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.III.J.K1</i> | Rotorcraft aerodynamics. |
| <i>AM.III.J.K2</i> | Flight controls. |
| <i>AM.III.J.K3</i> | Transmissions. |
| <i>AM.III.J.K4</i> | Rigging requirements for rotary wing aircraft. |
| <i>AM.III.J.K5</i> | Design and operation of rotor systems. |
| <i>AM.III.J.K6</i> | Flutter and flight control balance. |
| <i>AM.III.J.K7</i> | Rotor blade track and balance. |
| <i>AM.III.J.K8</i> | Types of rotorcraft rotor systems. |
| <i>AM.III.J.K9</i> | Rotor vibrations. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.III.J.R1</i> | The dangers of working around helicopter blades during ground operations such as balancing and tracking. |
| <i>AM.III.J.R2</i> | Safety procedures when working around operating rotor blades. |
| <i>AM.III.J.R3</i> | Damage to rotor blades due to maintenance that can render the blades unairworthy. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.III.J.S1</i> | Locate causes of vertical vibration in a two-blade helicopter rotor system. |
| <i>AM.III.J.S2</i> | Explain helicopter rotor blade track and balance procedures. |

IV. Powerplant Theory and Maintenance

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|------------------------|--|
| Subject | A. Reciprocating Engines |
| References | 14 CFR part 43, FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft reciprocating engines. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.IV.A.K1</i> | Types of reciprocating engines. |
| <i>AM.IV.A.K2</i> | Engine operating principles/theory of operation. |
| <i>AM.IV.A.K3</i> | Compression combustion engine operating principles/theory of operation. |
| <i>AM.IV.A.K4</i> | Horizontally opposed engine construction and internal components. |
| <i>AM.IV.A.K5</i> | Radial engine construction and internal component differences. |
| <i>AM.IV.A.K6</i> | Storage and preservation. |
| <i>AM.IV.A.K7</i> | Engine performance (PLANK, SFC). |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.IV.A.R1</i> | Safety considerations when performing maintenance which requires moving the propeller on a reciprocating engine with magnetos installed. |
| <i>AM.IV.A.R2</i> | Safety considerations in preparation and during the ground operation of a reciprocating engine. |
| <i>AM.IV.A.R3</i> | Actions that should be taken in the event of an engine fire during an engine run. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.IV.A.S1</i> | Explain a cylinder assembly inspection and installation. |
| <i>AM.IV.A.S2</i> | Ground operate and troubleshoot reciprocating engine. |
| <i>AM.IV.A.S3</i> | Explain piston and/or knuckle pin(s) installation. |
| <i>AM.IV.A.S4</i> | Identify the parts of a cylinder. |
| <i>AM.IV.A.S5</i> | Identify the parts of a crankshaft. |
| <i>AM.IV.A.S6</i> | Identify and inspect various types of bearings. |
| <i>AM.IV.A.S7</i> | Check and/or rig cable and push-pull engine controls. |
| <i>AM.IV.A.S8</i> | Inspect engine mounts. |
| <i>AM.IV.A.S9</i> | Demonstrate engine starting procedures. |
| <i>AM.IV.A.S10</i> | Locate top dead-center position of a piston. |
| <i>AM.IV.A.S11</i> | Check cylinder compression with differential compression tester. |
| <i>AM.IV.A.S12</i> | Explain the considerations needed when performing an engine run. |

IV. Powerplant Theory and Maintenance

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| Subject | <i>B. Turbine Engines</i> |
| References | 14 CFR part 43, FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft turbine engines. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.IV.B.K1</i> | Engine operating principles/ theory of operation. |
| <i>AM.IV.B.K2</i> | Types of turbine engines and their differences. |
| <i>AM.IV.B.K3</i> | Engine terms and definitions. |
| <i>AM.IV.B.K4</i> | Checks necessary to verify proper operation. |
| <i>AM.IV.B.K5</i> | Turbine engine troubleshooting procedures. |
| <i>AM.IV.B.K6</i> | Procedures required after the installation of a turbine engine. |
| <i>AM.IV.B.K7</i> | Causes for turbine engine performance loss. |
| <i>AM.IV.B.K8</i> | Turbine engine components including inlet ducts, centrifugal compressors, axial-flow compressors, turbofans, blade design and attachment, diffuser section, combustion section, turbine section, exhaust. |
| <i>AM.IV.B.K9</i> | Bearings and seals. |
| <i>AM.IV.B.K10</i> | Accessory drives. |
| <i>AM.IV.B.K11</i> | Bleed air systems. |
| <i>AM.IV.B.K12</i> | Difference and uses between turboprop, turbofan, and turboshaft engines. |
| <i>AM.IV.B.K13</i> | Storage and preservation. |
| <i>AM.IV.B.K14</i> | Auxiliary power unit(s). |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.IV.B.R1</i> | Safety concerns that should be considered when operating a turbine engine. |
| <i>AM.IV.B.R2</i> | Precautions that should be taken when performing maintenance on a turbine engine ignition system. |
| <i>AM.IV.B.R3</i> | Actions to be taken in the event of an engine nacelle fire. |
| <i>AM.IV.B.R4</i> | Actions to be taken in the event of a tailpipe fire. |
| <i>AM.IV.B.R5</i> | Hazards associated with foreign object damage (FOD). |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.IV.B.S1</i> | Ground operate and troubleshoot turbine engine. |
| <i>AM.IV.B.S2</i> | Identify characteristics of different turbine compressors. |
| <i>AM.IV.B.S3</i> | Identify types of turbine blades. |
| <i>AM.IV.B.S4</i> | Identify major components of turbine engines. |
| <i>AM.IV.B.S5</i> | Identify airflow direction and pressure changes in turbojet engines. |
| <i>AM.IV.B.S6</i> | Remove and install a fuel nozzle in a turbine engine. |
| <i>AM.IV.B.S7</i> | Inspect combustion liners. |
| <i>AM.IV.B.S8</i> | Locate and describe the procedures for the adjustment of a fuel control unit. |
| <i>AM.IV.B.S9</i> | Perform turbine engine inlet guide vane and compressor blade inspection. |
| <i>AM.IV.B.S10</i> | Locate and describe the installation or removal procedures of a turbine engine. |
| <i>AM.IV.B.S11</i> | Locate and explain the procedures for trimming a turbine engine. |
| <i>AM.IV.B.S12</i> | Identify damaged turbine blades. |
| <i>AM.IV.B.S13</i> | Identify causes for engine performance loss. |
| <i>AM.IV.B.S14</i> | Identify damaged inlet nozzle guide vanes. |
| <i>AM.IV.B.S15</i> | Inspect the first two stages of a turbine fan or compressor for foreign object damage. |

IV. Powerplant Theory and Maintenance

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| Subject | C. Engine Inspection |
| References | 14CFR part 43, FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft engine inspections. |
| Knowledge | The applicant demonstrates understanding of: |
| AM.IV.C.K1 | Inspection and maintenance record requirements and entries. |
| AM.IV.C.K2 | The identification of life limited parts and their replacement interval. |
| AM.IV.C.K3 | Special Inspections required after a potentially damaging event, including but not limited to any of the following: over speed, sudden stoppage, or over temperature. |
| AM.IV.C.K4 | Conformity inspections in accordance with FAA approved data, such as TCDS and supplemental type certificates (STCs). |
| AM.IV.C.K5 | Aircraft engine service bulletin and/or airworthiness directive compliance. |
| AM.IV.C.K6 | Aircraft turbine engine records of time or cycles left on life limited parts. |
| AM.IV.C.K7 | Requirements for an over temperature inspection. |
| AM.IV.C.K8 | Requirements for an engine over torque inspection. |
| AM.IV.C.K9 | Requirements for an aircraft engine over speed inspection. |
| AM.IV.C.K10 | Conformity of installed spark plugs or igniters. |
| AM.IV.C.K11 | 100-hour inspection procedures. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| AM.IV.C.R1 | Safety precautions that should be followed when performing a compression test on a reciprocating engine. |
| AM.IV.C.R2 | Safety considerations for personnel performing maintenance on an operating reciprocating engine. |
| AM.IV.C.R3 | Safety considerations for personnel performing maintenance on an operating turbine engine. |
| Skills | The applicant demonstrates the ability to: |
| AM.IV.C.S1 | Perform a compression check. |
| AM.IV.C.S2 | Accomplish a powerplant conformity check. |
| AM.IV.C.S3 | Perform a powerplant inspection to include a records check. |
| AM.IV.C.S4 | Inspect an engine for compliance with applicable ADs. |
| AM.IV.C.S5 | Identify an engine by type without reference material other than the data plate. |
| AM.IV.C.S6 | Determine engine conformity with engine specifications or type certificate data sheet. |
| AM.IV.C.S7 | Construct a checklist for a 100-hour inspection on an engine. |
| AM.IV.C.S8 | Perform a portion of the 100-hour inspection on an engine. |
| AM.IV.C.S9 | Check engine controls for proper operation and proper adjustment. |
| AM.IV.C.S10 | Identify what type and where fluids may leak. |
| AM.IV.C.S11 | Inspect aircraft engine accessories for conformity. |
| AM.IV.C.S12 | Inspect aircraft engine for service bulletin compliance. |
| AM.IV.C.S13 | Inspect aircraft turbine engine records for time or cycle time on life limited parts. |
| AM.IV.C.S14 | Identify the steps for an over temperature inspection. |
| AM.IV.C.S15 | Identify the steps for an engine over torque inspection. |
| AM.IV.C.S16 | Identify the steps for an aircraft engine over speed inspection. |
| AM.IV.C.S17 | Determine conformity of installed spark plugs or igniters. |

V. Powerplant Systems and Components

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| Subject | A. Engine Instruments |
| References | FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft engine instruments. |
| Knowledge | The applicant demonstrates understanding of: |
| AM.V.A.K1 | Fuel flow. |
| AM.V.A.K2 | Temperature. |
| AM.V.A.K3 | Tachometers. |
| AM.V.A.K4 | Manifold pressure. |
| AM.V.A.K5 | Pressure measuring. |
| AM.V.A.K6 | Position indicating. |
| AM.V.A.K7 | Torque meters. |
| AM.V.A.K8 | Engine pressure ratio (EPR). |
| AM.V.A.K9 | Engine indicating and crew alerting. |
| AM.V.A.K10 | Full authority digital engine controls (FADEC). |
| AM.V.A.K11 | Electronic centralized aircraft monitoring. |
| AM.V.A.K12 | Engine instrument range markings. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| AM.V.A.R1 | Considerations to avoid damage to the instrument or indicating system. |
| AM.V.A.R2 | Safety considerations associated with improper calibrated or indicating engine instruments. |
| Skills | The applicant demonstrates the ability to: |
| AM.V.A.S1 | Inspect, check and troubleshoot an engine instrument system. |
| AM.V.A.S2 | Troubleshoot a fuel flow and/or low fuel pressure indicating system. |
| AM.V.A.S3 | Remove, inspect, and/or install a fuel-flow transmitter. |
| AM.V.A.S4 | Remove, inspect, and/or install fuel flow gauge. |
| AM.V.A.S5 | Identify various components installed on an engine. |
| AM.V.A.S6 | Check fuel flow transmitter power supply. |
| AM.V.A.S7 | Inspect tachometer markings for accuracy. |
| AM.V.A.S8 | Perform resistance measurements of thermocouple indication system. |
| AM.V.A.S9 | Remove, inspect, and/or install turbine engine exhaust gas temperature (EGT) harness. |
| AM.V.A.S10 | Troubleshoot a turbine EPR system. |
| AM.V.A.S11 | Troubleshoot a tachometer system. |
| AM.V.A.S12 | Replace a cylinder head temperature thermocouple. |
| AM.V.A.S13 | Inspect EGT probes. |
| AM.V.A.S14 | Locate and inspect engine low fuel pressure warning system components. |
| AM.V.A.S15 | Check aircraft engine manifold pressure gauge for proper operation. |
| AM.V.A.S16 | Inspect a leaking manifold pressure system. |
| AM.V.A.S17 | Repair a low oil pressure warning system. |
| AM.V.A.S18 | Troubleshoot an EGT indicating system. |

V. Powerplant Systems and Components

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| Subject | <i>B. Engine Fire Detection and Protection</i> |
| References | FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft engine fire detection and protection systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.V.B.K1</i> | Types of fires and engine fire zones. |
| <i>AM.V.B.K2</i> | Fire detection warning system operation. |
| <i>AM.V.B.K3</i> | Fire detection system maintenance and inspection requirements. |
| <i>AM.V.B.K4</i> | Fire extinguishing agents, types of systems, and operation. |
| <i>AM.V.B.K5</i> | Fire extinguishing system maintenance and inspection. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.V.B.R1</i> | The applicant should be able to demonstrate an understanding of the safety considerations when working with container blow-out cartridges. |
| <i>AM.V.B.R2</i> | Hazards associated with extinguishing agents. |
| <i>AM.V.B.R3</i> | Precautions to take when performing maintenance on circuits associated with fire bottle squibs. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.V.B.S1</i> | Inspect, check, service, troubleshoot and repair an engine fire detection and extinguishing system. |
| <i>AM.V.B.S2</i> | Identify fire detection sensing units. |
| <i>AM.V.B.S3</i> | Inspect fire detection continuous loop system. |
| <i>AM.V.B.S4</i> | Inspect fire detection thermal switch or thermocouple system. |
| <i>AM.V.B.S5</i> | Locate and explain troubleshooting process for a fire detection system. |
| <i>AM.V.B.S6</i> | Inspect and explain the purpose of engine fire extinguisher system blowout plugs. |
| <i>AM.V.B.S7</i> | Inspect a turbine engine fire extinguisher agent container pressure. |
| <i>AM.V.B.S8</i> | Check fire extinguisher discharge circuit. |
| <i>AM.V.B.S9</i> | Troubleshoot a fire protection system. |
| <i>AM.V.B.S10</i> | Inspect a fire extinguisher container discharge cartridge. |
| <i>AM.V.B.S11</i> | Inspect fire extinguisher system for hydrostatic test requirements. |
| <i>AM.V.B.S12</i> | Check flame detectors for operation. |
| <i>AM.V.B.S13</i> | Explain how to check operation of master caution press-to-test and troubleshoot faults. |
| <i>AM.V.B.S14</i> | Identify continuous-loop fire detection system components. |

V. Powerplant Systems and Components

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| Subject | <i>C. Engine Electrical</i> |
| References | FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft engine electrical systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.V.C.K1</i> | Generators. |
| <i>AM.V.C.K2</i> | Alternators. |
| <i>AM.V.C.K3</i> | Starter generators. |
| <i>AM.V.C.K4</i> | Voltage regulators, over-volt and over-current protection. |
| <i>AM.V.C.K5</i> | DC generation systems. |
| <i>AM.V.C.K6</i> | AC generation systems. |
| <i>AM.V.C.K7</i> | The procedure for locating the correct electrical cable/wire size needed to fabricate a cable/wire. |
| <i>AM.V.C.K8</i> | The purpose and procedure for parallelling a dual-generator electrical system. |
| <i>AM.V.C.K9</i> | Over-voltage protection. |
| <i>AM.V.C.K10</i> | Annunciator Indicating systems and the meaning of warning, caution, and advisory lights. |
| <i>AM.V.C.K11</i> | CSD and IDG systems and components. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.V.C.R1</i> | Hazards of improper polarity when performing electrical system maintenance. |
| <i>AM.V.C.R2</i> | The consequences of not taking appropriate actions in response to a warning or caution annunciator light. |
| <i>AM.V.C.R3</i> | Safety precautions that should be take when performing maintenance on energized aircraft circuits/systems. |
| <i>AM.V.C.R4</i> | Safety concerns with routing and security of wiring near flammable fluid lines. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.V.C.S1</i> | Inspect, check, and service engine electrical wiring, switches, and protective devices. |
| <i>AM.V.C.S2</i> | Use publications to determine replacement part numbers. |
| <i>AM.V.C.S3</i> | Replace an engine-driven generator or alternator. |
| <i>AM.V.C.S4</i> | Service an engine-driven DC generator in accordance with manufacturer's instructions. |
| <i>AM.V.C.S5</i> | Inspect an engine-driven generator or alternator. |
| <i>AM.V.C.S6</i> | Troubleshoot a voltage regulator in an aircraft electrical generating system. |
| <i>AM.V.C.S7</i> | Repair an engine direct-drive electric starter. |
| <i>AM.V.C.S8</i> | Troubleshoot a direct-drive electric starter system. |
| <i>AM.V.C.S9</i> | Inspect an electrical system cable. |
| <i>AM.V.C.S10</i> | Determine wire size for engine electrical system. |
| <i>AM.V.C.S11</i> | Repair a broken engine electrical system wire. |
| <i>AM.V.C.S12</i> | Replace a wire bundle lacing. |
| <i>AM.V.C.S13</i> | Explain an electrical system related to a powerplant using a schematic or wiring diagram. |
| <i>AM.V.C.S14</i> | Fabricate a bonding jumper. |
| <i>AM.V.C.S15</i> | Inspect a turbine engine starter generator. |
| <i>AM.V.C.S16</i> | Install solderless terminals. |
| <i>AM.V.C.S17</i> | Inspect engine electrical connectors. |

V. Powerplant Systems and Components

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| Subject | <i>D. Lubrication</i> |
| References | FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft lubrication systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.V.D.K1</i> | Functions and characteristics of engine oils. |
| <i>AM.V.D.K2</i> | Types and grades of engine oil. |
| <i>AM.V.D.K3</i> | Lubrication system operation and components. |
| <i>AM.V.D.K4</i> | Wet-sump system. |
| <i>AM.V.D.K5</i> | Dry-sump system. |
| <i>AM.V.D.K6</i> | Chip detectors. |
| <i>AM.V.D.K7</i> | The reasons for changing engine lubricating oil at specified intervals. |
| <i>AM.V.D.K8</i> | Reasons for excessive oil consumption without evidence of oil leaks in a reciprocating and/or turbine aircraft engine. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.V.D.R1</i> | Hazards associated with use of improper or mixing engine oils. |
| <i>AM.V.D.R2</i> | The storage and handling of engine lubricants. |
| <i>AM.V.D.R3</i> | The handling, storage, and disposal of used lubricating oil. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.V.D.S1</i> | Inspect and service a lubrication system. |
| <i>AM.V.D.S2</i> | Determine the correct type of oil for a specific engine. |
| <i>AM.V.D.S3</i> | Identify turbine engine oil filter bypass indicator. |
| <i>AM.V.D.S4</i> | Determine approved oils for different climatic temperatures. |
| <i>AM.V.D.S5</i> | Describe procedures for obtaining oil samples. |
| <i>AM.V.D.S6</i> | Inspect an oil filter or screen. |
| <i>AM.V.D.S7</i> | Check engine oil pressure. |
| <i>AM.V.D.S8</i> | Perform oil pressure adjustment. |
| <i>AM.V.D.S9</i> | Identify oil system components. |
| <i>AM.V.D.S10</i> | Replace an oil system component. |
| <i>AM.V.D.S11</i> | Identify oil system flow. |
| <i>AM.V.D.S12</i> | Troubleshoot an engine oil pressure malfunction. |
| <i>AM.V.D.S13</i> | Troubleshoot an engine oil temperature system. |
| <i>AM.V.D.S14</i> | Determine the process to investigate the cause of metal found in an oil filter. |

V. Powerplant Systems and Components

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| Subject | <i>E. Ignition and Starting</i> |
| References | FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft ignition and starting systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.V.E.K1</i> | Ignition system theory. |
| <i>AM.V.E.K2</i> | Spark plug theory. |
| <i>AM.V.E.K3</i> | Shower of sparks and impulse coupling. |
| <i>AM.V.E.K4</i> | Three electrical circuits of a magneto system. |
| <i>AM.V.E.K5</i> | Solid state ignition systems. |
| <i>AM.V.E.K6</i> | Full authority digital engine controls (FADEC) for reciprocating and turbine aircraft. |
| <i>AM.V.E.K7</i> | Engine starters with Bendix or right-angle drive. |
| <i>AM.V.E.K8</i> | Magneto system components and operation. |
| <i>AM.V.E.K9</i> | Starters. |
| <i>AM.V.E.K10</i> | Turbine engine igniter systems. |
| <i>AM.V.E.K11</i> | High tension magneto systems. |
| <i>AM.V.E.K12</i> | Low tension magneto systems. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.V.E.R1</i> | Hazards associated with advanced and retarded ignition timing (piston engine). |
| <i>AM.V.E.R2</i> | Precautions for performing maintenance on a turbine engine ignition system. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.V.E.S1</i> | Repair and/or set magneto internal timing. |
| <i>AM.V.E.S2</i> | Time magneto to engine. |
| <i>AM.V.E.S3</i> | Remove, clean and install spark plug. |
| <i>AM.V.E.S4</i> | Perform an ignition system operational check and inspection. |
| <i>AM.V.E.S5</i> | Inspect, troubleshoot and repair an ignition system. |
| <i>AM.V.E.S6</i> | Inspect, check and troubleshoot an electrical starting system. |
| <i>AM.V.E.S7</i> | Inspect magneto breaker points. |
| <i>AM.V.E.S8</i> | Inspect an ignition harness. |
| <i>AM.V.E.S9</i> | Check serviceability of condensers. |
| <i>AM.V.E.S10</i> | Check ignition coils. |
| <i>AM.V.E.S11</i> | Troubleshoot ignition switch circuit. |
| <i>AM.V.E.S12</i> | Inspect and check gap of spark plugs. |
| <i>AM.V.E.S13</i> | Identify the correct spark plugs used for replacement installation. |
| <i>AM.V.E.S14</i> | Troubleshoot a turbine or reciprocating engine ignition system. |
| <i>AM.V.E.S15</i> | Identify the correct igniter plug and replace turbine engine igniter plugs. |
| <i>AM.V.E.S16</i> | Troubleshoot turbine engine igniters. |
| <i>AM.V.E.S17</i> | Inspect turbine engine ignition system. |
| <i>AM.V.E.S18</i> | Inspect igniters. |

V. Powerplant Systems and Components

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| Subject | <i>F. Fuel Metering Systems</i> |
| References | FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft fuel metering systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.V.F.K1</i> | Engine mixture requirements. |
| <i>AM.V.F.K2</i> | Float carburetor theory, components, operation and adjustments. |
| <i>AM.V.F.K3</i> | Pressure carburetor theory, operation, and adjustments. |
| <i>AM.V.F.K4</i> | Continuous flow fuel injection theory, components, operation, troubleshooting and adjustment. |
| <i>AM.V.F.K5</i> | Full authority digital engine controls. |
| <i>AM.V.F.K6</i> | Hydromechanical system design and components. |
| <i>AM.V.F.K7</i> | Fuel nozzles and manifolds. |
| <i>AM.V.F.K8</i> | Fuel nozzle design and operation. |
| <i>AM.V.F.K9</i> | Components of a turbine engine fuel system. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.V.F.R1</i> | Safety precautions to consider when trimming a turbine engine fuel control. |
| <i>AM.V.F.R2</i> | Safety precautions to be considered when adjusting reciprocating engine idle speed and mixture. |
| <i>AM.V.F.R3</i> | Hazards associated with improperly adjusted or miss-trimmed fuel metering system. |
| <i>AM.V.F.R4</i> | The handling, storage, and shipping of fuel metering system components that have been in service and may contain fuel. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.V.F.S1</i> | Inspect, troubleshoot, and repair a fuel metering system. |
| <i>AM.V.F.S2</i> | Remove, inspect, and install a turbine engine fuel nozzle. |
| <i>AM.V.F.S3</i> | Identify carburetor components. |
| <i>AM.V.F.S4</i> | Interpret diagram showing fuel and air flow through float-type carburetor. |
| <i>AM.V.F.S5</i> | Remove and/or install a main metering jet in a carburetor. |
| <i>AM.V.F.S6</i> | Service a carburetor fuel inlet screen. |
| <i>AM.V.F.S7</i> | Identify carburetor air-bleed system. |
| <i>AM.V.F.S8</i> | Check the float level on a float-type carburetor. |
| <i>AM.V.F.S9</i> | Inspect float needle and/or seat in a float-type carburetor. |
| <i>AM.V.F.S10</i> | Identify, remove, and/or install a float-type carburetor. |
| <i>AM.V.F.S11</i> | Adjust idle speed and/or mixture. |
| <i>AM.V.F.S12</i> | Describe the conditions that may result in turbine engine RPM overspeed. |
| <i>AM.V.F.S13</i> | Set or position fuel metering cockpit controls for engine start. |
| <i>AM.V.F.S14</i> | Trimming procedures for a hydromechanical fuel control unit. |
| <i>AM.V.F.S15</i> | Adjustment of the fuel injection system on a reciprocating engine. |
| <i>AM.V.F.S16</i> | Trimming the fuel control on a turbine engine. |

V. Powerplant Systems and Components

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|------------------------|--|
| Subject | <i>G. Engine Fuel Systems</i> |
| References | FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft engine fuel systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.V.G.K1</i> | Inspection requirements for an engine fuel system. |
| <i>AM.V.G.K2</i> | Checks of fuel systems to verify proper operation. |
| <i>AM.V.G.K3</i> | Troubleshooting an engine fuel system. |
| <i>AM.V.G.K4</i> | Procedure for inspection of an engine driven fuel pump for leaks and security. |
| <i>AM.V.G.K5</i> | Function and/or operation of one or more types of fuel pumps. |
| <i>AM.V.G.K6</i> | Function and/or operation of one or more types of fuel valves. |
| <i>AM.V.G.K7</i> | Function and/or operation of engine fuel filters. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.V.G.R1</i> | Safety considerations during fuel system maintenance. |
| <i>AM.V.G.R2</i> | The handling, storage, and shipping of engine fuel system components that have been in service and may contain fuel. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.V.G.S1</i> | Identify components of an engine fuel system. |
| <i>AM.V.G.S2</i> | Remove and/or install an engine-driven fuel pump. |
| <i>AM.V.G.S3</i> | Check a remotely operated fuel valve. |
| <i>AM.V.G.S4</i> | Rig a remotely operated fuel valve. |
| <i>AM.V.G.S5</i> | Inspect a main fuel filter assembly for leaks. |
| <i>AM.V.G.S6</i> | Check fuel boost pumps for correct pressure. |
| <i>AM.V.G.S7</i> | Inspect fuel boost pump. |
| <i>AM.V.G.S8</i> | Locate and identify a turbine engine fuel heater. |
| <i>AM.V.G.S9</i> | Check fuel pressure warning light function. |
| <i>AM.V.G.S10</i> | Adjust fuel pump fuel pressure. |
| <i>AM.V.G.S11</i> | Inspect engine fuel system fluid lines and/or components. |
| <i>AM.V.G.S12</i> | Troubleshoot abnormal fuel pressure. |
| <i>AM.V.G.S13</i> | Troubleshoot a turbine engine fuel heater system. |
| <i>AM.V.G.S14</i> | Remove, clean, and/or replace an engine fuel strainer. |
| <i>AM.V.G.S15</i> | Troubleshoot engine fuel pressure fluctuation. |
| <i>AM.V.G.S16</i> | Inspect fuel selector valve. |
| <i>AM.V.G.S17</i> | Determine correct fuel nozzle spray pattern. |
| <i>AM.V.G.S18</i> | Locate and identify fuel selector placards. |

V. Powerplant Systems and Components

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|------------------------|---|
| Subject | <i>H. Induction and Engine Airflow</i> |
| References | FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft induction and engine airflow systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.V.H.K1</i> | Reciprocating and turbine engine induction system design. |
| <i>AM.V.H.K2</i> | Induction system icing, causes and effects. |
| <i>AM.V.H.K3</i> | Superchargers. |
| <i>AM.V.H.K4</i> | Turbochargers and controls. |
| <i>AM.V.H.K5</i> | Engine anti-ice systems. |
| <i>AM.V.H.K6</i> | Compressor bleed air systems for ice control. |
| <i>AM.V.H.K7</i> | Compressor/turbine case cooling. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.V.H.R1</i> | Hazards of performing maintenance on hot system components. |
| <i>AM.V.H.R2</i> | Hazards associated with the ground operation of aircraft engines for maintenance purposes. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.V.H.S1</i> | Inspect a carburetor preheat system. |
| <i>AM.V.H.S2</i> | Check a carburetor heater box shutter for full travel. |
| <i>AM.V.H.S3</i> | Identify probable location of induction ice. |
| <i>AM.V.H.S4</i> | Identify turbine engine air intake ice protected areas. |
| <i>AM.V.H.S5</i> | Service an induction air filter. |
| <i>AM.V.H.S6</i> | Inspect a turbocharger for exhaust leaks and security. |
| <i>AM.V.H.S7</i> | Check a turbocharger for operation. |
| <i>AM.V.H.S8</i> | Inspect an induction system for obstruction. |
| <i>AM.V.H.S9</i> | Inspect an air intake manifold for leaks. |
| <i>AM.V.H.S10</i> | Troubleshoot reciprocating engine that idles poorly. |
| <i>AM.V.H.S11</i> | Troubleshoot reciprocating engine that fails to start. |
| <i>AM.V.H.S12</i> | Identify components of a turbocharger induction system. |
| <i>AM.V.H.S13</i> | Troubleshoot a carburetor heat system. |
| <i>AM.V.H.S14</i> | Troubleshoot turbine engine air inlet ice protection system. |
| <i>AM.V.H.S15</i> | Identify turboprop engine ice and rain protection system components. |
| <i>AM.V.H.S16</i> | Inspect a turbocharger. |
| <i>AM.V.H.S17</i> | Inspect a carburetor air inlet duct attachment. |

V. Powerplant Systems and Components

| | |
|------------------------|---|
| Subject | <i>I. Engine Cooling Systems</i> |
| References | FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft engine cooling systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.V.I.K1</i> | Cooling system design and components. |
| <i>AM.V.I.K2</i> | Inspection and maintenance requirements. |
| <i>AM.V.I.K3</i> | Operation of cowl flaps, and how cooling is accomplished. |
| <i>AM.V.I.K4</i> | How turbine engine cooling is accomplished. |
| <i>AM.V.I.K5</i> | Cooling of engine bearings and other parts on turbine engines. |
| <i>AM.V.I.K6</i> | The importance of proper engine baffle and seal installation. |
| <i>AM.V.I.K7</i> | The operation of a heat exchanger. |
| <i>AM.V.I.K8</i> | The function and operation of an augments cooling system. |
| <i>AM.V.I.K9</i> | Cooling systems and their differences in rotorcraft, turbine and reciprocating engines. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.V.I.R1</i> | Hazards of performing maintenance on hot system components. |
| <i>AM.V.I.R2</i> | Hazards associated with a damaged or improperly installed cooling system. |
| <i>AM.V.I.R3</i> | Hazards associated with the ground operation of aircraft engines for maintenance purposes. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.V.I.S1</i> | Perform an induction and cooling system inspection. |
| <i>AM.V.I.S2</i> | Repair cylinder baffle. |
| <i>AM.V.I.S3</i> | Inspect cylinder head baffle plates. |
| <i>AM.V.I.S4</i> | Check cowl flap travel. |
| <i>AM.V.I.S5</i> | Inspect cylinder cooling fins. |
| <i>AM.V.I.S6</i> | Identify location of turbine engine insulation blankets. |
| <i>AM.V.I.S7</i> | Identify turbine engine cooling air flow. |
| <i>AM.V.I.S8</i> | Troubleshoot a cowl flap system. |
| <i>AM.V.I.S9</i> | Troubleshoot an engine cooling system. |
| <i>AM.V.I.S10</i> | Identify exhaust augments cooled engine components. |
| <i>AM.V.I.S11</i> | Identify rotorcraft engine cooling components. |
| <i>AM.V.I.S12</i> | Troubleshoot rotorcraft engine cooling system. |
| <i>AM.V.I.S13</i> | Inspect rotorcraft engine cooling system. |
| <i>AM.V.I.S14</i> | Inspect engine exhaust augments cooling system. |

V. Powerplant Systems and Components

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|------------------------|--|
| Subject | <i>J. Engine Exhaust and Reverser Systems</i> |
| References | FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft engine exhaust and reverser systems. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.V.J.K1</i> | Exhaust system and/or nozzle design. |
| <i>AM.V.J.K2</i> | Cabin and carburetor heat. |
| <i>AM.V.J.K3</i> | Mufflers. |
| <i>AM.V.J.K4</i> | Noise suppressors. |
| <i>AM.V.J.K5</i> | Design and operation of thrust reversers (cascade versus mechanical blockage). |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.V.J.R1</i> | Hazards of performing maintenance on hot system components. |
| <i>AM.V.J.R2</i> | Precautions and potential hazards of operating turbine engine reversing systems. |
| <i>AM.V.J.R3</i> | Potential hazards of operating reciprocating engines with exhaust systems leaks. |
| <i>AM.V.J.R4</i> | Dangers associated with exhaust system failures. |
| <i>AM.V.J.R5</i> | Hazards associated with the ground operation of aircraft engines for maintenance purposes. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.V.J.S1</i> | Perform an exhaust system inspection. |
| <i>AM.V.J.S2</i> | Identify the type of exhaust system on a particular aircraft. |
| <i>AM.V.J.S3</i> | Inspect exhaust system components. |
| <i>AM.V.J.S4</i> | Explain how to repair exhaust system components. |
| <i>AM.V.J.S5</i> | Inspect reciprocating engine exhaust system. |
| <i>AM.V.J.S6</i> | Inspect exhaust system internal baffles or diffusers. |
| <i>AM.V.J.S7</i> | Inspect exhaust heat exchanger. |
| <i>AM.V.J.S8</i> | Perform a heat exchanger collector tube leak test. |
| <i>AM.V.J.S9</i> | Inspect a turbine engine exhaust nozzle. |
| <i>AM.V.J.S10</i> | Explain how to check turbine thrust reverser system. |
| <i>AM.V.J.S11</i> | Explain how to troubleshoot a thrust reverser system. |
| <i>AM.V.J.S12</i> | Troubleshoot exhaust muffler heat exchanger. |
| <i>AM.V.J.S13</i> | Identify an exhaust system leak and explain the appropriate repair procedure. |
| <i>AM.V.J.S14</i> | Locate and explain procedures for performing exhaust system leak checks. |

V. Powerplant Systems and Components

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|------------------------|---|
| Subject | <i>K. Propellers and Rotor Blades</i> |
| References | FAA-H-8083-32, AC 43.13-1 |
| Objective | To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft propellers. |
| Knowledge | The applicant demonstrates understanding of: |
| <i>AM.V.K.K1</i> | Propeller theory of operation including forces and aerodynamic factors. |
| <i>AM.V.K.K2</i> | Types of propellers and blade design. |
| <i>AM.V.K.K3</i> | Functions of rotor blades and their construction. |
| <i>AM.V.K.K4</i> | Pitch control. |
| <i>AM.V.K.K5</i> | Operation, synchronizing and ice protection. |
| <i>AM.V.K.K6</i> | Reciprocating engine constant speed propellers and governors. |
| <i>AM.V.K.K7</i> | Turbine engine propellers and governors design, construction and operation. |
| <i>AM.V.K.K8</i> | Checks necessary to verify proper operation of propeller systems. |
| <i>AM.V.K.K9</i> | Procedures for proper application of propeller lubricants. |
| <i>AM.V.K.K10</i> | Installation or removal of a propeller. |
| <i>AM.V.K.K11</i> | Measurement of blade angle with a propeller protractor. |
| <i>AM.V.K.K12</i> | Identify repairs classified as major repairs on an aluminum propeller. |
| <i>AM.V.K.K13</i> | Reference data for reducing the diameter of a type certificated propeller. |
| <i>AM.V.K.K14</i> | Operation of propeller system component(s). |
| <i>AM.V.K.K15</i> | Propeller governor components and operation. |
| <i>AM.V.K.K16</i> | Theory and operation of various types of constant speed propellers. |
| <i>AM.V.K.K17</i> | Function and operation of propeller synchronizing systems. |
| <i>AM.V.K.K18</i> | Function and operation of propeller ice control systems. |
| Risk Management | The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing: |
| <i>AM.V.K.R1</i> | Hazards associated with working around an operational propeller. |
| <i>AM.V.K.R2</i> | Hazards associated with improper propeller maintenance. |
| <i>AM.V.K.R3</i> | Importance of rotor blade inspection with an emphasis on bond line area inspections. |
| Skills | The applicant demonstrates the ability to: |
| <i>AM.V.K.S1</i> | Remove and/or install an aircraft engine propeller. |
| <i>AM.V.K.S2</i> | Check blade tracking. |
| <i>AM.V.K.S3</i> | Perform a tap test on a rotor blade. |
| <i>AM.V.K.S4</i> | Inspect an aircraft propeller for airworthiness. |
| <i>AM.V.K.S5</i> | Measure blade angle with a propeller protractor. |
| <i>AM.V.K.S6</i> | Repair an aluminum alloy propeller blade. |
| <i>AM.V.K.S7</i> | Perform propeller lubrication. |
| <i>AM.V.K.S8</i> | Locate and explain the procedures for balancing a fixed-pitch propeller. |
| <i>AM.V.K.S9</i> | Remove, inspect, and/or install a propeller governor. |
| <i>AM.V.K.S10</i> | Adjust a propeller governor. |
| <i>AM.V.K.S11</i> | Determine propeller blade pitch angle. |
| <i>AM.V.K.S12</i> | Determine propeller critical range of operation. |
| <i>AM.V.K.S13</i> | Describe the operation of a propeller. |
| <i>AM.V.K.S14</i> | Inspect a wooden propeller metal tipping. |
| <i>AM.V.K.S15</i> | Check propeller blade feather angle. |

V. Powerplant Systems and Components

| Subject | <i>K. Propellers and Rotor Blades</i> |
|-------------------|--|
| <i>AM.V.K.S16</i> | Repair metal propeller leading edges, trailing edges or tips that have nicks, scratches, and cuts and determine what minor propeller alterations are acceptable using the appropriate type certificate data sheet. |
| <i>AM.V.K.S17</i> | Clean an aluminum alloy propeller. |
| <i>AM.V.K.S18</i> | Explain how to inspect a turboprop propeller system. |
| <i>AM.V.K.S19</i> | Perform a 100-hour inspection on a propeller. |
| <i>AM.V.K.S20</i> | Explain how to troubleshoot a turboprop propeller system. |
| <i>AM.V.K.S21</i> | Repair anti-icing or de-icing system on a propeller. |

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Appendix 1: The Knowledge Test Eligibility, Prerequisites and Testing Centers

Knowledge Test Description

The knowledge test is an important part of the airman certification process. Applicants must pass the knowledge test before taking the practical test. Federal Aviation Administration (FAA) airman knowledge tests are effective instruments for aviation safety and regulation measurement. However, these tests can only sample the vast amount of knowledge every aviation maintenance technician needs.

Comments may be e-mailed to AFS630Comments@faa.gov.

The knowledge test consists of objective, multiple-choice questions. There is a single correct response for each test question. Each test question is independent of other questions. A correct response to one question does not depend upon, or influence, the correct response to another.

Knowledge Test Tables

| Test Code | Test Name | Number of Questions | Age | Allotted Time | Passing Score |
|------------|--|---------------------|-----|---------------|---------------|
| AMG | Aviation Maintenance Technician – General | 60 | N/A | 2.0 | 70 |
| AMA | Aviation Maintenance Technician – Airframe | 100 | N/A | 2.0 | 70 |
| AMP | Aviation Maintenance Technician – Powerplant | 100 | N/A | 2.0 | 70 |

Knowledge Test Blueprint

| AMG Knowledge Areas Required by 14 CFR section 65.75 are on the Knowledge Test | Percent of Questions Per Test |
|--|-------------------------------|
| Basic Electricity | 5 – 15% |
| Aircraft Technical Graphics | 5 – 10% |
| Weight and Balance | 5 – 10% |
| Fluid Lines and Fittings | 5 – 10% |
| Materials, Hardware and Processes | 5 – 10% |
| Ground Operation and Servicing | 5 – 15% |
| Cleaning and Corrosion Control | 5 – 10% |
| Mathematics | 5 – 10% |
| Regulations, Publications and Recordkeeping | 5 – 10% |
| Aviation Physics | 5 – 10% |
| Inspections | 5 – 10% |
| Human Factors | 5 – 10% |
| Total Number of Questions | 60 |

| AMA Knowledge Areas Required by 14 CFR section 65.75 are on the Knowledge Test | Percent of Questions Per Test |
|--|-------------------------------|
| Metallic Structures | 5 – 15% |
| Non-Metallic Structures | 5 – 10% |
| Aircraft Finishes | 5 – 10% |
| Welding | 5 – 10% |
| Assembly and Rigging | 5 – 10% |
| Airframe Inspection | 5 – 15% |
| Landing Gear | 5 – 10% |
| Hydraulic and Pneumatic Systems | 5 – 10% |
| Cabin Atmosphere Control | 5 – 10% |
| Aircraft Instruments | 5 – 10% |
| Communication and Navigation | 5 – 10% |
| Aircraft Fuel | 5 – 10% |
| Aircraft Electrical | 5 – 10% |
| Ice and Rain Control | 5 – 10% |
| Overheat and Fire Detection, Protection and Suppression | 5 – 10% |
| Rotorcraft Fundamentals | 5 – 10% |
| Total Number of Questions | 100 |

| AMP Knowledge Areas Required by 14 CFR section 65.75 are on the Knowledge Test | Percent of Questions Per Test |
|--|-------------------------------|
| Reciprocating Engines | 5 – 15% |
| Turbine Engines | 5 – 10% |
| Engine Inspection | 5 – 10% |
| Engine Instruments | 5 – 10% |
| Engine Fire Detection and Protection | 5 – 10% |
| Engine Electrical | 5 – 15% |
| Lubrication | 5 – 10% |
| Ignition and Starting | 5 – 10% |
| Fuel Metering Systems | 5 – 10% |
| Engine Fuel Systems | 5 – 10% |
| Induction and Engine Airflow | 5 – 10% |
| Engine Cooling Systems | 5 – 10% |
| Engine Exhaust and Reverser Systems | 5 – 10% |
| Propellers | 5 – 10% |
| Total Number of Questions | 100 |

English Language Standard

In accordance with the requirements of 14 CFR part 65.71 and the FAA Aviation English Language Proficiency standard, throughout the application and testing process the applicant must demonstrate the ability to read, write, speak, and understand the English language. English language proficiency is required for effective crew communication and coordination. Normal restatement of questions as would be done for a native English speaker is permitted, and does not constitute grounds for disqualification.

Knowledge Test Requirements

An airman applicant may present one or more of the following acceptable forms of authorization for ALL tests listed above:

- Original FAA Form 8610-2, Airman Certificate and/or Rating Application.
 - NOTE 1: Proctor should verify that applicable blocks are marked (in upper left corner of form). Those not applicable will have a line drawn through them. (Example located in FAA Order 8080.6, Appendix.) If either or both the Airframe and Powerplant boxes are checked on the FAA Form 8610-2, along with the 'Original Issuance' box (and NOT the 'Added Rating' box), this serves as authorization for the Aviation Mechanic General (AMG) test. DO NOT ACCEPT AN "ORIGINAL ISSUANCE" APPLICATION FOR AN AMG TEST ONLY. (If the 'Added Rating' box is marked, this indicates that the AMG test is NOT required.)
 - NOTE 2: Proctor should ensure block V is completed, including date, inspector's original signature, and FAA Flight Standards District Office (FSDO) identifier. (A sample form is located in Order 8080.6, Appendix.)
 - NOTE 3: The applicant must retain both original 8610-2 forms issued by the FSDO. The proctor must make a copy of the form and attach it to the applicable daily log (refer to Order 8080.6, 'Test Procedures-General' Chapter); or, if the testing center is approved for electronic filing, the proctor must file the form electronically in accordance with (IAW) their Airman Knowledge Testing (AKT) Organization Designation Authorization (ODA) Holder's Procedures Manual.
- Certificate of graduation or completion from an FAA-certificated Aviation Maintenance Technician School (AMTS).
 - NOTE 1: The proctor must ensure the certificate includes the AMTS name and certificate number, graduation date, curriculum from which the applicant graduated, applicant name, and signature of an authorized school official.
 - NOTE 2: The proctor must ensure the applicant is only allowed the test(s) authorized on the certificate.
 - NOTE 3: The proctor must make a legible photocopy of the certificate presented at the time of applicant processing, and attach this copy to the applicable daily log; or, if the testing center is approved for electronic filing, the proctor must file the certificate electronically in accordance with their AKT ODA Holder's Procedures Manual. The proctor must return the original certificate to the applicant.
- Military Certificate of Eligibility.
 - NOTE 1: The proctor must ensure the applicant is only allowed the test(s) authorized on the certificate; and that the test date does not precede the certificate date. (A sample certificate is located in Order 8080.6, Appendix.)
 - NOTE 2: The proctor must make a legible photocopy of the certificate presented at the time of applicant processing, and attach this copy to the applicable daily log; or, if the testing center is approved for electronic filing, the proctor must file the certificate electronically in accordance with their AKT ODA Holder's Procedures Manual. The proctor must return the original certificate to the applicant.

Acceptable form of authorization for AMG (ONLY for applicants attending exempted AMTSs):

- Evidence of authorization to take the general test based on the school having an exemption issued under 14 CFR part 11 to § 65.75(a).

Acceptable forms of retest authorization for ALL tests listed above:

- Original passing Airman Knowledge Test Report (AKTR).
- Original expired AKTR.
- Original failed AKTR.
 - NOTE 1: Requires a 30-day waiting period for retesting if the applicant presents a failed AKTR, but no authorized instructor endorsement.
 - NOTE 2: Retests do not require a 30-day waiting period if the applicant presents a signed statement from an airman holding the certificate and rating(s) sought by the applicant. This statement must certify that the airman has given the applicant additional instruction in each of the subjects failed, and that the airman considers the applicant ready for retesting.
 - NOTE 3: An applicant retesting AFTER FAILURE is required to submit the applicable AKTR indicating failure to the testing center prior to retesting.
 - The original failed AKTR must be retained by the proctor and attached to the applicable daily log. o If the testing center is approved for electronic filing, the proctor must: initial the AKTR within the embossed seal; file the AKTR in accordance with their AKT ODA Holder's Procedures Manual; verify the original failed AKTR has been successfully captured and stored prior to destruction; and destroy the AKTR.

Knowledge Test Centers

The FAA authorizes hundreds of knowledge testing center locations that offer a full range of airman knowledge tests. For information on authorized testing centers and to register for the knowledge test, contact one of the providers listed at www.faa.gov.

Knowledge Test Registration

When you contact a knowledge testing center to register for a test, please be prepared to select a test date, choose a testing center, and make financial arrangements for test payment when you call. You may **register** for test(s) several weeks in advance, and you may cancel in accordance with the testing center's cancellation policy.

Appendix 2: Knowledge Test Procedures and Tips

Before starting the actual test, the testing center will provide an opportunity to practice navigating through the test. This practice or tutorial session may include sample questions to familiarize the applicant with the look and feel of the software. (e.g., selecting an answer, marking a question for later review, monitoring time remaining for the test, and other features of the testing software.)

Acceptable Materials

The applicant may use the following aids, reference materials, and test materials, as long as the material does not include actual test questions or answers:

| Acceptable Materials | Unacceptable Materials | Notes |
|--|---|---|
| Supplement book provided by proctor | Written materials that are handwritten, printed, or electronic | Testing centers may provide calculators and/or deny the use of personal calculators |
| All models of aviation-oriented calculators or small electronic calculators that perform only arithmetic functions | Electronic calculators incorporating permanent or continuous type memory circuits without erasure capability | Unit Member (proctor) may prohibit the use of your calculator if he or she is unable to determine the calculator's erasure capability |
| Calculators with simple programmable memories, which allow addition to, subtraction from, or retrieval of one number from the memory; or simple functions, such as square root and percentages | Magnetic Cards, magnetic tapes, modules, computer chips, or any other device upon which pre-written programs or information related to the test can be stored and retrieved | Printouts of data must be surrendered at the completion of the test if the calculator incorporates this design feature |
| Manufacturer's permanently inscribed instructions on the front and back of such aids, e.g., formulas, conversions, regulations, signals, weather data, holding pattern diagrams, frequencies, weight and balance formulas, and air traffic control procedures | Any booklet or manual containing instructions related to use of test aids | Unit Member makes the final determination regarding aids, reference materials, and test materials |

Test Tips

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

- Carefully read the instructions provided with the test.
- 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 trying to solve it.
- After formulating a response, determine which answer option corresponds with your answer. The answer you choose should completely solve the problem.
- Remember that only one answer is complete and correct. The other possible answers are either incomplete or erroneous.
- If a certain question is difficult for you, mark it for review and return to it after you have answered the less difficult questions. This procedure will enable you to use the available time to maximum advantage.
- When solving a calculation problem, be sure to read all the associated notes.

- For questions involving use of a graph, you may request a printed copy that you can mark in computing your answer. This copy and all other notes and paperwork must be given to the testing center upon completion of the test.

Cheating or Other Unauthorized Conduct

To avoid test compromise, computer testing centers must follow strict security procedures established by the FAA and described in FAA Order 8080.6 (as amended), Conduct of Airman Knowledge Tests. The FAA has directed testing centers to terminate a test at any time a test unit member suspects that a cheating incident has occurred.

The FAA will investigate and, if the agency determines that cheating or unauthorized conduct has occurred, any airman certificate or rating you hold may be revoked. You will also be prohibited from applying for or taking any test for a certificate or rating for a period of one year.

Testing Procedures for Applicants Requesting Special Accommodations

An applicant with learning or reading disability may request approval from AFS-630 through the local Flight Standards District Office (FSDO) or **International Field Office/International Field Unit (IFO/IFU)** to take airman knowledge test using one of the three options listed below, in preferential order:

Option 1: Use current testing facilities and procedures whenever possible.

Option 2: Use a self-contained, electronic device which pronounces and displays typed-in words (e.g., the Franklin Speaking Wordmaster®) to facilitate the testing process.

Note: *The device should consist of an electronic thesaurus that audibly pronounces typed-in words and presents them on a display screen. The device should also have a built-in headphone jack in order to avoid disturbing others during testing.*

Option 3: Request the proctor's assistance in reading specific words or terms from the test questions and/or supplement book. To prevent compromising the testing process, the proctor must be an individual with no aviation background or expertise. The proctor may provide reading assistance only (i.e., no explanation of words or terms). When an applicant requests this option, the FSDO **or IFO/IFU** inspector must contact the Airman Testing Standards Branch (AFS-630) for assistance in selecting the test site and assisting the proctor. Before approving any option, the FSDO **or IFO/IFU** inspector must advise the applicant of the regulatory certification requirement to be able to read, write, speak, and understand the English language.

Appendix 3: Airman Knowledge Test Report

Immediately upon completion of the knowledge test, the applicant receives a printed Airman Knowledge Test Report documenting the score with the testing center's raised, embossed seal. The applicant must retain the original Airman Knowledge Test Report. When taking the practical test, the applicant must present the original Airman Knowledge Test Report to the evaluator, who is required to assess the noted areas of deficiency during the oral portion of the practical test.

An Airman Knowledge Test Report expires 24 calendar months after the month the applicant completes the knowledge test. If the Airman Knowledge Test Report expires before completion of the practical test, the applicant must retake the knowledge test.

To obtain a duplicate Airman Knowledge Test Report due to loss or destruction of the original, the applicant can send a signed request accompanied by a check or money order for \$12.00 (U.S. funds), payable to the FAA to:

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

To obtain a copy of the application form or a list of the information required, please see the [Airman Certification Branch \(AFS-760\) web page](#).

FAA Knowledge Test Question Coding

Each Subject in the Airman Certification Standard includes an ACS code. This ACS code will soon be displayed on the airman test report to indicate what Subject element was proven deficient on the Knowledge Exam. Instructors can then provide remedial training in the deficient areas and evaluators can re-test this element during the practical exam.

The ACS coding consists of 4 elements. For example: this code is deciphered as follows:

AM.XI.A.K1:

- AM** = Applicable ACS (Aviation Mechanic)
- I** = Section (General)
- A** = Subject (Basic Electricity)
- K1** = Subject element Knowledge 1 [Electron theory (conventional flow vs. electron flow).]

Knowledge test questions are mapped to the ACS codes, which will soon replace the system of "Learning Statement Codes." After this transition occurs, the airman knowledge test report will list an ACS code that correlates to a specific Subject element for a given Section and Subject. Remedial study and re-testing will be specific, targeted, and based on specified learning criteria. Similarly, a Notice of Disapproval for the practical test will use the ACS codes to identify the deficient Subject elements.

Appendix 4: The Oral and Practical Test – Eligibility and Prerequisites

The prerequisite requirements and general eligibility for an oral and practical test and the specific requirements for the original issuance of an aviation mechanic certificate with an airframe and/or powerplant rating can be found in 14 CFR part 65.79.

Appendix 5: Practical Test Roles, Responsibilities, and Outcomes

Applicant Responsibilities

The applicant is responsible for mastering the established standards for knowledge, skill, and risk management elements in all Subjects appropriate to the certificate and rating sought. The applicant should use this ACS and its references in preparation to take the oral and practical test.

All applicants must demonstrate an approval for return to service standard, where applicable and demonstrate the ability to locate and apply the required reference materials. In instances where an approval for return to service standard cannot be achieved, the applicant must be able to explain why the return to service standard was not met (e.g., when tolerances are outside of a product's limitations).

Applicants meeting the experience requirements of 14 CFR 65.77, and are then eligible to take the airman knowledge test for the general, airframe and powerplant knowledge exams without any additional formal training. It is highly recommended that applicants seek guidance from an experience certificated mechanic and/or review the references listed in this ACS in the those subject areas in which they may not have direct experience in. It is the applicants' responsibility to prepare and review the subjects listed in this ACS in order to increase one's ability to obtain a passing score on the exam.

Evaluator Responsibilities

An evaluator is:

- Aviation safety inspector (ASI)
- Designated Mechanic Examiner (DME) or
- Chief instructor, assistant chief instructor or check instructor of aviation maintenance technician school holding examining authority

The DME must accomplish a pretest interview face-to-face, by telephone/fax, through email, or by other methods in accordance with the FAA Order 8900.2. See FAA Order 8900.2 chapter six, section 2 for details.

English proficiency is proven here through a series of questions during this pretest interview to determine if applicants meet the English language requirements. (Before accepting the application and beginning the practical test for certificate or rating, the evaluator must evaluate the applicant's English fluency using the appropriate guidance.) The current edition of Advisory Circular (AC) 60-28, English Language Skill Standards Required by 14 CFR Parts 61, 63, and 65, provides guidance for airman applicants, designees, and ASIs in determining English language skills required for airman certification.

The examiner who conducts the practical test is responsible for determining applicants have met the prescribed experience requirements as stated in 14 CFR part 65, section 65.77 or be an authorized school student per 14 CFR part 65, section 65.80. (See FAA Order 8900.2 (as revised) for information about testing under the provisions of 14 CFR part 65, section 65.80.)

At the initial stage of the oral and practical test, the examiner must also determine that the applicant meets FAA Aviation English Language Proficiency (AELP) standards by verifying that he or she can read, write and understand instructions and communicate in English. The examiner should use English Language Skill Standards Required by 14 CFR parts 65 (current version) when examining the applicant's ability to meet the standard. If, at any point during the practical test, the applicant does not meet the AELP standards, **the examiner must issue a Notice of Disapproval, FAA form 8060-5, with "NOT FAA AELP" in the comments.** If there is any doubt, the examiner should contact the local Flight Standards District Office (FSDO) for assistance.

The examiner must generate a complete test planning sheet to conduct the oral and practical test. The examiner must include all the questions and projects obtained from the Internet based Oral and Practical Test Generator at: <https://av-info.faa.gov/DsgReg/Login.aspx>. See FAA Order 8900.2 chapter 6 for details.

The examiner must personally observe all practical projects performed by the applicant. The examiner who conducts the practical test is responsible for determining that the applicant meets acceptable standards of knowledge and skill in the assigned subject areas within the appropriate ACS.

The following terms may be reviewed with the applicant prior to, or during, element assignment.

1. **Inspect**—means to examine by sight and/or touch (with or without inspection enhancing tools/equipment).
2. **Check**—means to verify proper operation.
3. **Troubleshoot**—means to analyze and identify malfunctions.
4. **Service**—means to perform functions that assure continued operation.
5. **Repair**—means to correct a defective condition. Repair of an airframe or powerplant system includes component replacement and adjustment, but not component repair.
6. **Overhaul**—means disassembled, cleaned inspected, repaired as necessary, and reassembled.

An applicant is not permitted to know before testing begins which selections in each subject area are to be included in his/her test. Therefore, an applicant should be well prepared in **all** oral and skill areas included in the airman certification standards.

The practical portion of the subject areas may be tested simultaneously with other subject areas provided all skill elements are covered. For example, "Mathematics" can be combined when performing calculation(s) in subject areas such as Basic Electricity and Weight and Balance.

Further information and requirements for conducting a practical test is contained in FAA Order 8900.2 (as revised).

The evaluator who conducts the oral and practical test is responsible for determining that the applicant meets the established standards of aeronautical knowledge, risk management, and skill for each Subject in the appropriate ACS. This responsibility also includes verifying the experience requirements specified for a certificate or rating.

In the integrated ACS framework, the Sections contain Subjects that include "knowledge" elements (such as K1), "risk management" elements (such as R1), and "skill" elements (such as S1). Knowledge and risk management elements are primarily evaluated during the knowledge testing phase of the airman certification process. The evaluator administering the oral and practical test has the discretion to combine subjects/elements as appropriate to testing scenarios.

The required minimum elements included on each Oral and Practical are as follows:

- At least two knowledge element;
- At least one risk management element;
- At least one skill element unless otherwise noted; and
- Any Subject elements in which the applicant was shown to be deficient on the knowledge test.

Note: *Subject elements tested on the basis of being listed on the AKTR may satisfy the other minimum Subject element requirements. The missed items on the AKTR are not required to be added in addition to the minimum Subject element requirements.*

There is no expectation for testing every knowledge and risk management element in a Subject, but the evaluator has discretion to sample as needed to ensure the applicant's mastery of that Subject.

Unless otherwise noted in the Subject, the evaluator must test at least one item in the skills section by asking the applicant to perform one. As safety permit, the evaluator should use questions during the practical to test knowledge and risk management elements not evident in the demonstrated skills. To the greatest extent practicable, evaluators should test the applicant's ability to apply and correlate information, and use rote questions only when they are appropriate for the material being tested. If the Subject includes sub-elements (such as AM.II.B.K1a Wood Structures), the evaluator should select either the primary element (such as K1) or an

appropriate sub-element (such as K1a). If the broader primary element is selected, the evaluator must develop questions only from material covered in the references listed for the Subject.

Possible Outcomes of the Test

There are three possible outcomes of the practical test: (1) Pass, (2) Fail, or (3) Not tested.

The regulations governing Aircraft Airframe and Mechanic Rules are established in 14 CFR part 65. As defined in the ACS, they represent the performance expected in normal maintenance conditions. They provide guidance for examiners to use in judging the applicant's qualifications.

The oral and practical test is passed if the applicant demonstrates the prescribed proficiency in the assigned elements in each subject area to the required standard. Applicants shall not be expected to memorize all mathematical formulas that may be required in the performance of various elements in this airman certification standard. However, where relevant, applicants must be able to locate and apply necessary formulas to obtain correct solutions.

Satisfactory performance requires that the applicant:

- Perform the Tasks specified in the Areas of Maintenance for the certificate or rating sought within the established standards;
- Demonstrate knowledge of the assigned element by performing each Task they are assigned successfully at the level they are assigned by the evaluator;
- Demonstrate proficiency and competency in accordance with the approved standards;
- Satisfactory performance will result in the issuance of a temporary certificate. See the 8900.2 for more guidance.

Fail

If, in the objective judgment of the examiner, the applicant does not meet the standards for any practical project or group of questions for a subject resulting in a 69 percent or lower for that subject downloaded from the oral and practical test generator as prescribed in the FAA Order 8900.2, the applicant fails that section of the test and the DME must discontinue testing in that section. See the current version of FAA Order 8900.2 for further information about retesting. When the examiner issues a failure, he or she shall list the section(s) in which the applicant did not meet the standard. The failure must also list any sections not tested in accordance with the FAA Order 8900.2. The examiner will continue the test and the applicant is entitled to credit only those subject areas of maintenance and the associated Tasks satisfactorily performed. Typical areas of unsatisfactory performance and grounds for disqualification include:

- Applicant's lack of understanding of a subject during oral questioning.
- Applicant having to look up an answer to an oral question using any reference materials. All answers to oral questions must be given without the use of reference materials.
- Not being able to complete a project on the first attempt.
- Failure to demonstrate the ability to locate and apply the required reference materials during a practical project.
- Not being able to demonstrate an approval for return to service during a practical project.

Note: See FAA Order 8900.2 for more detailed instructions on evaluation criteria.

Not Tested

Applicants must be retested in all areas that were not tested. See FAA Order 8900.2 for detailed instructions.

Practical Test Checklist – General, Airframe, Powerplant

[Add checklists for Airframe and Powerplant]

AIRFRAME AND POWERPLANT MECHANIC ORAL AND PRACTICAL PLANNING SHEET

| | | | | | | | | | | |
|--|--|--|--|--|----------------------------|--|--|------------------------------|--|-----------------------|
| 1.APPLICANT: | | | | | 3.DME: | | | | | |
| 2.SIGNATURE: | | | | | 4.SIGNATURE: | | | | | |
| | | | | | KNOWLEDGE QUESTIONS | | | SKILL ELEMENTS | | NOTES/COMMENTS |
| Section I - AMG - Aircraft Mechanic General | | | | | Oral: Passed / Failed | | | Projects: Passed / Failed | | |
| A | BASIC ELECTRICITY | | | | | | | | | |
| B | AIRCRAFT DRAWING | | | | | | | | | |
| C | WEIGHT AND BALANCE | | | | | | | | | |
| D | FLUID LINES AND FITTINGS | | | | | | | | | |
| E | MATERIALS AND PROCESSES | | | | | | | | | |
| F | GROUND OPERATION AND SERVICING | | | | | | | | | |
| G | CLEANING AND CORROSION CONTROL | | | | | | | | | |
| H | MATHEMATICS | | | | | | | | | |
| I | MAINTENANCE FORMS AND RECORDS | | | | | | | | | |
| J | BASIC PHYSICS | | | | | | | | | |
| K | MAINTENANCE PUBLICATIONS | | | | | | | | | |
| L | AVIATION MECHANIC PRIVILEGES AND LIMITATIONS | | | | | | | | | |
| 6.BEGINNING DATE: - | | | | | BEGINNING TIME: | | | | | |
| ENDING DATE: - | | | | | ENDING TIME: | | | TOTAL TEST TIME(HRS): | | (MIN): |

| |
|------------------|
| 7.REMARKS |
|------------------|

INSTRUCTIONS FOR COMPLETING THE PLANNING SHEET:

1. Applicant's printed name.
2. Applicant's signature. To be signed after the test has ended.
3. DME's name as it appears on the certificate.
4. DME's signature. To be signed after the test has ended.
5. The Knowledge Element question number assigned by the TPE Test Generator. The Designee **MUST** ask **AT LEAST 4** questions! Minimum passing score is 70%. If the question is answered incorrectly, place an "X" over the number. If an oral subject is failed, circle "Failed" in RED ink in the appropriate box. The Practical Projects will be assigned by the TPE Test Generator. If the project is failed, place an "X" over the project number and circle "Failed" in RED ink in the appropriate box. A failure in ANY subject area ends the test in that section.
6. For Beginning Date and Ending Date use the eight-digit(MM-DD-YYYY) format. For the Total Test Time, indicate the hours and minutes used for the test(example 8 HRS 15 MIN).

Appendix 6: Safety

General

Safety must be the prime consideration at all times. The evaluator and applicant must be constantly alert for performing aspects of a given maintenance or troubleshooting procedure, such as precautions and emergency procedures that would jeopardize safety, the evaluator will ask the applicant to simulate that portion of the procedure.

Included the following standards in DME observations for examining applicant performance:

1. Approach to the project; proper information and tools; preparation of the equipment; and observation of safety precautions.
2. Cleaning, preparing, and protecting parts; skill in handling tools; thoroughness and cleanliness.
3. The functions of the units or systems of the assigned project; use of current maintenance and/or overhaul procedures.
4. Final inspection for safety and operation.
5. Completion of required forms and records.
6. Application of appropriate rules.
7. Attitude toward safety, manufacturer's recommendations, and acceptable industry practices.

Appendix 7: Minimum Tool and Equipment List

GENERAL

To administer the General section of the practical test, a DME will need access to an aircraft with running engine or a run stand with the associated systems. Reference material must be manufacture-specific to the engine/aircraft/equipment being used for testing. However, if no manufacturer's maintenance manuals are available because the manufacturer has not ever published one, AC 43.13-1B, contains Acceptable Methods, Techniques, and Practices –Aircraft Inspection and Repair. This list includes, but is not limited to, the following:

Note: Always refer to the FAA Order 8900.2 for the latest tools and equipment list. This list was up to date as of the day of publishing the ACS.

- A. Basic Electricity
 - 1. Multimeter
 - a. Electrical system with faults (can be mockup)
 - 2. Aircraft battery
 - a. Aircraft battery, aircraft (can be mockup)
 - 3. Resistor(s)
 - a. Electrical system (can be mockup)
- B. Aircraft Drawings
 - 1. Various aircraft drawings, installation diagrams and schematics, blueprints, and graphs and charts.
- C. Weight and Balance
 - 1. Aircraft loading and weight and balance data
 - 2. Various aircraft weight and balance records.
- D. Fluid Lines and Fittings
 - 1. Rigid and flexible fluid lines
 - a. flex hose mandrels flare.
 - b. flare less tubing fittings.
 - c. rigid tubing cutting, bending, and flaring equipment.
 - d. aircraft rigid tubing and flexible hose
 - e. various AN or MS tubing and hose fittings
- E. Material and Processes
 - 1. Safety wire and turnbuckles (can be mockup)
 - 2. Vernier micrometers, Vernier calipers
 - 3. Swaged cable end fittings and 7X7 or 7X19 aircraft
 - 4. Cable swaging tool(s)
- F. Ground Operations
 - 1. A running reciprocating or turbine engine aircraft or test stand
 - 2. An aircraft
 - a. Tow bar, tie downs, ropes, etc.
- G. Cleaning and Corrosion
 - 1. Examples of different types of corrosion
 - 2. Protective coatings for metallic materials
 - a. Spray equipment, brushes, solvents, cleaning equipment for metals

H. Math

1. Calculator

I. Forms and Records

1. FAA Form 337 (Computer generated or paper copies acceptable)

J. Basic Physics

No special tools or equipment needed

K. Maintenance Publications

1. ADs
2. The ability to research Manufacturer's data
 - a. Illustrated parts manuals for the products and equipment that you use.
 - 1) Computer generated or paper copies acceptable
 - b. Maintenance and service manuals for the products and equipment that you use.
 - 1) Computer generated or paper copies acceptable
 - c. Service information, etc. for the products and equipment that you use.
 - 1) Computer generated or paper copies acceptable

Add Equipment lists for Airframe and Powerplant:

Airframe – Order 8900.2B pg 6-64 through 6-66

Powerplant – Order 8900.2B pg 6-67 through 6-69

Appendix 8: References

This ACS is based on the following 14 CFR parts, FAA guidance documents, manufacturer's publications, and other documents.

| Reference | Title |
|----------------|---|
| 14CFR part 43 | Maintenance, Preventive Maintenance, Rebuilding and Alteration |
| 14 CFR part 45 | Identification and Registration Marking |
| 14 CFR part 65 | Certification: Airmen Other Than Flight Crewmembers |
| 14 CFR Part 91 | General Operating and Flight Rules |
| | |
| FAA-H-8083-30 | Aviation Maintenance Technician Handbook – General |
| FAA-H-8083-31 | Aviation Maintenance Technician Handbook – Airframe (Volumes 1 and 2) |
| FAA-H-8083-32 | Aviation Maintenance Technician – Powerplant (Volumes 1 and 2) |
| | |
| AC 43.13-1 | Acceptable Methods, Techniques and Practices Aircraft Inspection & Repair |
| AC 43.13-2 | Acceptable Methods, Techniques and Practical Aircraft Alterations |
| | |

Note: Users should reference the current edition of the reference documents listed above. The current edition of all FAA publications can be found at www.faa.gov.

Appendix 9: Abbreviations and Acronyms

The following abbreviations and acronyms are used in the ACS.

| Abb./Acronym | Definition |
|--------------|--|
| 14 CFR | Title 14 of the Code of Federal Regulations |
| AC | Advisory Circular |
| AC | Alternate Current |
| ACARS | Aircraft Communication Addressing and Reporting System |
| ACS | Airman Certification Standards |
| AD | Airworthiness Directive |
| ADF | Automatic Direction Finder |
| ADS-B | Automatic Dependent Surveillance Broadcast |
| AELPS | Aviation English Language Proficiency Standard |
| AFS | Flight Standards Service |
| AIS | Audio Integration System |
| AKT | Airman Knowledge Test |
| AKTR | Airman Knowledge Test Report |
| AMA | Airframe |
| AMG | General |
| AMP | Powerplant |
| AMTS | Aviation Maintenance Technician School |
| ASI | Aviation Safety Inspector |
| ASRS | Aviation Safety Reporting System |
| ATC | Air Traffic Control |
| CFR | Code of Federal Regulations |
| CG | Center of Gravity |
| CPC | Corrosion Preventive Compounds |
| CSD | Constant Speed Drive |
| DC | Direct Current |
| DME | Designated Mechanic Examiner |
| DME | Distance Measuring Equipment |
| EGT | Exhaust Gas Temperature |
| ELT | Emergency Locator Transmitter |
| EPR | Engine Pressure Ratio |
| FAA | Federal Aviation Administration |
| FADEC | Full Authority Digital Engine Controls |
| FSDO | Flight Standards District Office |
| GPS | Global Positioning System |
| GPWS | Ground Proximity Warning Systems |
| HF | High Frequency |
| IDG | Integrated Drive Generator |

| Abb./Acronym | Definition |
|--------------|---|
| IFR | Instrument Flight Rules |
| ILS | Instrument Landing System |
| INS | Inertial Navigation System |
| LSC | Learning Statement Code |
| MAC | Mean Aerodynamic Chord |
| MSDS | Material Safety Data Sheets |
| NDT | Nondestructive Testing |
| NiCad | Nickle-Cadmium (battery) |
| NVRAM | Nonvolatile Random Access Memory |
| ODA | Organization Designation Authorization |
| RA | Radio Altimeter |
| RAM | Random Access Memory |
| ROM | Read Only Memory |
| SATCOM | Satellite Communications |
| SDS | Safety Data Sheets |
| SFC | Specific Fuel Consumption |
| SMS | Safety Management System |
| STC | Supplemental Type Certificate |
| SUPS | Suspected Unapproved Parts |
| TCAS | Traffic Collision Avoidance System |
| TCDS | Type Certificate Data Sheets |
| TSO | Technical Standard Order |
| VHF | Very High Frequency |
| VOR | Very High Frequency Omnidirectional Radio Range |