



# General/Airframe Oral & Practical Exam Study Guide & Checklist

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This study guide is specifically designed to help you prepare for the FAA Airframe Oral and Practical examination. **IMPORTANT: When you take your Airframe O&P test, you will also take the General O&P test on the same day.** This guide focuses on the 15 Airframe subject areas (FAA-S-ACS-1 Section II). You should also study the 12 General subject areas (FAA-S-ACS-1 Section I) using appropriate General study materials. Each subject area contains specific Knowledge, Risk Management, and Skill elements that you must demonstrate during your test.

*We strive to provide the most accurate information possible. If you identify any corrections or have suggestions for updates, please email us at [office@greasepilot.com](mailto:office@greasepilot.com)*

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## Understanding the ACS Structure

The FAA-S-ACS-1 Airman Certification Standards is divided into three sections: Section I (General), Section II (Airframe), and Section III (Powerplant). When you take your Airframe O&P test, you will be tested on both Section I (General) and Section II (Airframe) on the same day.

**Section I - General:** Contains 12 subject areas covering fundamental aviation maintenance knowledge. Each subject area tests three types of elements: Knowledge (K) – what you must understand and explain, Risk Management (R) – hazards you must identify and mitigate, and Skills (S) – tasks you must physically perform or demonstrate.

### The 12 General Subject Areas (FAA-S-ACS-1 Section I)

- A. Fundamentals of Electricity and Electronics
- B. Aircraft Drawings
- C. Weight and Balance
- D. Fluid Lines and Fittings
- E. Aircraft Materials, Hardware, and Processes
- F. Ground Operations and Servicing
- G. Cleaning and Corrosion Control
- H. Mathematics
- I. Regulations, Maintenance Forms, Records, and Publications
- J. Physics for Aviation
- K. Inspection Concepts and Techniques
- L. Human Factors

**Section II - Airframe:** Contains 15 subject areas (labeled A through O) covering airframe-specific systems and structures. Each subject area tests three types of elements: Knowledge (K) – what you must understand and explain, Risk Management (R) – hazards you must identify and mitigate, and Skills (S) – tasks you must physically perform or demonstrate.

### The 15 Airframe Subject Areas (FAA-S-ACS-1 Section II)

- A. Metallic Structures
- B. Non-Metallic Structures
- C. Flight Controls

- D. Airframe Inspection
- E. Landing Gear Systems
- F. Hydraulic and Pneumatic Systems
- G. Environmental Systems
- H. Aircraft Instrument Systems
- I. Communication and Navigation Systems
- J. Aircraft Fuel Systems
- K. Aircraft Electrical Systems
- L. Ice and Rain Control Systems
- M. Airframe Fire Protection Systems
- N. Rotorcraft Fundamentals
- O. Water and Waste Systems

**Study Tip:** Each subject area in both General (Section I) and Airframe (Section II) lists specific codes (e.g., AM.I.A.K1 for General, AM.II.A.K1 for Airframe). Your oral and practical tests will randomly select elements from these codes. You must be prepared to demonstrate knowledge, risk management, and skills for ANY element within ALL 12 General subject areas AND ALL 15 Airframe subject areas.

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## Study Materials & Resources

The following resources are essential for preparing for your Airframe O&P exam. The FAA handbooks contain the detailed technical knowledge, while the ACS documents show you exactly how you'll be tested.

### FREE FAA RESOURCES (Download All)

- FAA-G-ACS-1 Companion Guide (ESSENTIAL - Read this first!)**
  - Official FAA guide explaining the entire testing process
  - How the Mechanic Test Generator (MTG) works
  - What to expect on test day, pre-test interview requirements
- FAA-H-8083-30B (General Handbook)**
- FAA-H-8083-31B (Airframe Handbook, Volumes 1 & 2)**
- FAA-S-ACS-1 (Airman Certification Standards - Complete Document)**
- 14 CFR Part 43 (Maintenance, Preventive Maintenance, Rebuilding, and Alteration)**
- 14 CFR Part 65 (Certification: Airmen Other Than Flight Crewmembers)**
- 14 CFR Part 91 (General Operating and Flight Rules)**
- AC 43.13-1B (Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair)**

### RECOMMENDED STUDY MATERIALS

- FAA-H-8083-30B General Handbook - Essential reference for all General subjects**
  - Covers electricity, drawings, weight/balance, materials, regulations, and more
  - Free download from [faa.gov](http://faa.gov)
- FAA-H-8083-31B Airframe Handbook (Volumes 1 & 2) - Essential reference**
  - Comprehensive coverage of all airframe systems and structures
  - Free download from [faa.gov](http://faa.gov)
- ASA Oral & Practical Exam Guide (5th Edition) - Covers General, Airframe, AND Powerplant**
  - Single comprehensive book covering all three sections in one volume
  - Organized by ACS subject areas with typical examiner questions
  - Updated to match current FAA-S-ACS-1 standards
  - Available at Amazon or ASA

**Aircraft manufacturer service manuals FOR THE SPECIFIC AIRCRAFT YOUR DME USES**

- Contact your DME early to find out what aircraft they use
- Get manuals for those specific aircraft (e.g., Cessna 172, Piper Cherokee)
- Essential for knowing WHERE to find specifications on test day

**Your OJT training notes and experience logs**

- Review real-world procedures you've performed
- Connect hands-on experience to exam requirements

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## CRITICAL: CONTACT YOUR DME EARLY

The FAA requires your DME to conduct a pretest interview BEFORE your exam. This can be done by phone, email, video call, or in person. During this interview, the DME will discuss fees, testing procedures, schedule, and most importantly: the SPECIFIC aircraft and equipment you'll be tested on.

### WHY THIS MATTERS:

Every DME uses different aircraft and equipment. One DME may test on a Cessna 172, while another uses a Piper Cherokee or Beechcraft Bonanza. Knowing your DME's setup 4-6 weeks in advance allows you to obtain the correct service manuals, study aircraft-specific ADs and service bulletins, review procedures for that specific aircraft type, familiarize yourself with that aircraft's systems and components, and know what tools and equipment will be available.

### QUESTIONS TO ASK YOUR DME IN THE PRETEST INTERVIEW:

- What specific aircraft will be used for practical projects? (Make/model/year/serial number)
- What systems will be available for testing? (hydraulic, pneumatic, electrical, etc.)
- What tools and equipment do you provide vs. what should I bring?
- What are your test fees? When is payment due?
- How long does the O&P test typically take? (Plan for full day minimum)
- What time should I arrive? Where is your facility located?
- I would like to verify the documentation I need to bring. Is this correct:
  - FAA Form 8610-2 (signed by ASI or school)
  - Airman Knowledge Test Reports for General and Airframe
  - Government-issued photo ID
  - FTN (FAA Tracking Number)
  - Proof of experience
- What manuals/references will be available during the practical portion?
- What are common areas where applicants struggle on your tests?
- Do you have any specific preparation recommendations?

**ACTION ITEM:** Contact your DME 4-6 weeks before your planned test date. Find DME contact information at [www.faa.gov](http://www.faa.gov) (search "Designated Mechanic Examiner" or "DME Locator"). Write down their answers to these questions and use them to guide your final weeks of study.

## 8-Week Study Plan Overview

This 8-week plan systematically covers all 12 General subject areas AND all 15 Airframe subject areas. Each week focuses on related subjects from both sections, ensuring thorough preparation for your combined General + Airframe O&P test.

Week	General + Airframe Subjects	Focus Areas
1	General: A. Electricity & Electronics, B. Aircraft Drawings Airframe: A. Metallic Structures	Basic electricity, circuits, diagrams, blueprints, sheet metal inspection, riveting, welding
2	General: C. Weight & Balance, D. Fluid Lines Airframe: B. Non-Metallic Structures	CG calculations, loading, fluid line fittings, composites, fabric, windows, wood structures
3	General: E. Materials & Hardware, F. Ground Ops Airframe: C. Flight Controls	Aircraft hardware, materials, taxiing, towing, cables, rigging, control surfaces, balance
4	General: G. Cleaning & Corrosion, H. Mathematics Airframe: D. Inspection, E. Landing Gear	Corrosion control, finishing, calculations, 100-hour inspections, ADs, landing gear types, brakes, tires
5	General: I. Regulations & Records, J. Physics Airframe: F. Hydraulic, G. Environmental	14 CFR Part 43/65/91, logbook entries, physics laws, hydraulic systems, pressurization, oxygen, heating/cooling
6	General: K. Inspection Concepts, L. Human Factors Airframe: H. Instruments, I. Comm/Nav	NDT methods, human performance, pitot-static, gyros, avionics, antennas, ELT, autopilot
7	Airframe: J. Fuel Systems, K. Electrical, L. Ice/Rain Control	Fuel tanks, pumps, selectors, electrical systems, generators, batteries, de-ice/anti-ice systems
8	Airframe: M. Fire Protection, N. Rotorcraft, O. Water/Waste Final Review	Fire detection/suppression, rotorcraft fundamentals, potable water systems, comprehensive review

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## WEEK 1: General (Electricity/Electronics, Drawings) + Airframe (Metallic Structures)

ACS Codes: AM.I.A, AM.I.B, AM.II.A | Focus: Basic electricity, circuits, blueprints, sheet metal repair, riveting, welding

### GENERAL KNOWLEDGE ELEMENTS (Subject A: Electricity & Electronics):

- GENERAL: AM.I.A.K1 - Electron theory (conventional flow vs. electron flow) (FAA-H-8083-30B)
- GENERAL: AM.I.A.K2 - Magnetism (FAA-H-8083-30B)
- GENERAL: AM.I.A.K3 - Capacitance in a circuit (FAA-H-8083-30B)
- GENERAL: AM.I.A.K4 - Inductance in a circuit (FAA-H-8083-30B)
- GENERAL: AM.I.A.K5 - Alternating current (AC) electrical circuits (FAA-H-8083-30B)
- GENERAL: AM.I.A.K6 - Direct current (DC) electrical circuits (FAA-H-8083-30B)
- GENERAL: AM.I.A.K7 - Electrical laws and theory (FAA-H-8083-30B)
- GENERAL: AM.I.A.K8 - Electrical measurement tools, principles, and procedures (FAA-H-8083-30B)
- GENERAL: AM.I.A.K9 - Voltage (FAA-H-8083-30B)
- GENERAL: AM.I.A.K10 - Current (FAA-H-8083-30B)
- GENERAL: AM.I.A.K11 - Resistance (FAA-H-8083-30B)
- GENERAL: AM.I.A.K12 - Power (FAA-H-8083-30B)
- GENERAL: AM.I.A.K13 - Series circuits (FAA-H-8083-30B)
- GENERAL: AM.I.A.K14 - Parallel circuits (FAA-H-8083-30B)
- GENERAL: AM.I.A.K15 - Aircraft batteries (FAA-H-8083-30B)
- GENERAL: AM.I.A.K16 - Transformers (FAA-H-8083-30B)
- GENERAL: AM.I.A.K17 - Circuit continuity (FAA-H-8083-30B)
- GENERAL: AM.I.A.K18 - Controlling devices, including switches and relays (FAA-H-8083-30B)
- GENERAL: AM.I.A.K19 - Protective devices, including fuses, circuit breakers, and current limiters (FAA-H-8083-30B)
- GENERAL: AM.I.A.K20 - Resistor types and color coding (FAA-H-8083-30B)
- GENERAL: AM.I.A.K21 - Semiconductors, including diodes, transistors, and integrated circuits (FAA-H-8083-30B)
- GENERAL: AM.I.A.K22 - Digital logic, including RAM, ROM, NVRAM, logic gates, inverter, rectifier, and flip flop (FAA-H-8083-30B)

- GENERAL: AM.I.A.K23 - Binary numbers (FAA-H-8083-30B)
- GENERAL: AM.I.A.K24 - Electrostatic discharge (FAA-H-8083-30B)
- GENERAL: AM.I.A.K25 - Electrical circuit drawings (FAA-H-8083-30B)
- GENERAL: AM.I.A.K26 - Complex/combined circuits (FAA-H-8083-30B)
- GENERAL: AM.I.A.K27 - AC and DC motors (FAA-H-8083-30B)

**GENERAL KNOWLEDGE ELEMENTS (Subject B: Aircraft Drawings):**

- GENERAL: AM.I.B.K1 - Drawings, blueprints, sketches, charts, graphs, and system schematics, including commonly used lines, symbols, and terminology (FAA-H-8083-30B)
- GENERAL: AM.I.B.K2 - Repair or alteration of an aircraft system or component(s) using drawings, blueprints, or system schematics to determine whether it conforms to its type design (FAA-H-8083-30B)
- GENERAL: AM.I.B.K3 - Inspection of an aircraft system or component(s) using drawings, blueprints, or system schematics (FAA-H-8083-30B)
- GENERAL: AM.I.B.K4 - Terms used in conjunction with aircraft drawings, blueprints, or system schematics (FAA-H-8083-30B)

### **AIRFRAME KNOWLEDGE ELEMENTS (Subject A: Metallic Structures):**

- AIRFRAME: AM.II.A.K1 - Inspection/testing of metal structures (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.K2 - Types of sheet metal defects (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.K3 - Selection of sheet metal repair materials (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.K4 - Layout, forming, and drilling of sheet metal components (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.K5 - Selection of rivets, hardware, and fasteners for a sheet metal repair (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.K6 - Heat treatment processes for aluminum (FAA-H-8083-30B)
- AIRFRAME: AM.II.A.K7 - Rivet layout (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.K8 - Rivet removal and installation methods (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.K9 - Maintenance safety practices/precautions for sheet metal repairs or fabrications (FAA-H-8083-30B)
- AIRFRAME: AM.II.A.K10 - Flame welding gases (FAA-H-8083-30B)
- AIRFRAME: AM.II.A.K11 - Storage/handling of welding gases (FAA-H-8083-30B)
- AIRFRAME: AM.II.A.K12 - Flame welding practices and techniques (FAA-H-8083-30B)
- AIRFRAME: AM.II.A.K13 - Inert-gas welding practices and techniques (FAA-H-8083-30B)
- AIRFRAME: AM.II.A.K14 - Purpose and types of shielding gases (FAA-H-8083-30B)
- AIRFRAME: AM.II.A.K15 - Types of steel tubing welding repairs (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.K16 - Procedures for weld repairs (FAA-H-8083-30B)
- AIRFRAME: AM.II.A.K17 - Types of structures and their characteristics (FAA-H-8083-31B)

### **Critical Skills to Practice:**

- GENERAL: AM.I.A.S1 - Perform circuit continuity test (FAA-H-8083-30B)
- GENERAL: AM.I.A.S2 - Measure voltage (FAA-H-8083-30B)
- GENERAL: AM.I.A.S3 - Measure current (FAA-H-8083-30B)
- GENERAL: AM.I.A.S4 - Measure resistance (FAA-H-8083-30B)
- GENERAL: AM.I.A.S5 - Test a switch or relay (FAA-H-8083-30B)
- GENERAL: AM.I.A.S6 - Test a fuse or circuit breaker (FAA-H-8083-30B)
- GENERAL: AM.I.A.S7 - Read and interpret aircraft electrical circuit diagrams, and symbols, including solid state devices and logic functions (FAA-H-8083-30B)

- GENERAL: AM.I.A.S8 - Troubleshoot a circuit (FAA-H-8083-30B)
- GENERAL: AM.I.A.S9 - Identify symbols used in electrical and electronic schematic diagrams (e.g., grounds, shields, resistors, capacitors, fuses, circuit breakers, batteries, diodes, transistors, and integrated circuits) (FAA-H-8083-30B)
- GENERAL: AM.I.A.S10 - Demonstrate how to test for short-circuit and open-circuit conditions (FAA-H-8083-30B)
- GENERAL: AM.I.A.S11 - Measure voltage drop across a resistor (FAA-H-8083-30B)
- GENERAL: AM.I.A.S12 - Determine or measure for open electrical circuits (FAA-H-8083-30B)
- GENERAL: AM.I.A.S13 - Inspect an aircraft battery (FAA-H-8083-30B)
- GENERAL: AM.I.A.S14 - Service an aircraft battery (FAA-H-8083-30B)
- GENERAL: AM.I.B.S1 - Draw a sketch of a repair or alteration (FAA-H-8083-30B)
- GENERAL: AM.I.B.S2 - Identify the meaning of lines and symbols used in an aircraft drawing (FAA-H-8083-30B)
- GENERAL: AM.I.B.S3 - Interpret dimensions used in an aircraft drawing (FAA-H-8083-30B)
- GENERAL: AM.I.B.S4 - Identify changes on an aircraft drawing (FAA-H-8083-30B)
- GENERAL: AM.I.B.S5 - Determine material requirements from an aircraft drawing (FAA-H-8083-30B)
- GENERAL: AM.I.B.S6 - Interpret graphs and charts (FAA-H-8083-30B)

- AIRFRAME: AM.II.A.S1 - Install and remove solid rivets (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.S2 - Install and remove a blind rivet (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.S3 - Determine applicability of sheet metal for a repair in a specific application (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.S4 - Select and install special purpose fasteners (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.S5 - Design a repair using a manufacturer's structural repair manual (AC 43.13-1B)
- AIRFRAME: AM.II.A.S6 - Prepare and install a patch to repair an aircraft or component (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.S7 - Make a drawing of a repair, including the number of rivets and size of sheet metal required (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.S8 - Remove a repair that was installed with rivets (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.S9 - Trim and form a piece of sheet metal to fit a prepared area (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.S10 - Fabricate an aluminum part in accordance with a drawing (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.S11 - Determine a rivet pattern for a specific repair (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.S12 - Countersink rivet holes in sheet metal (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.S13 - Perform a repair on a damaged aluminum sheet (FAA-H-8083-31B)
- AIRFRAME: AM.II.A.S14 - Determine extent of damage and decide if metallic structure is repairable (FAA-H-8083-31B)

### **Risk Management Areas:**

- GENERAL: AM.I.A.R1 - Taking voltage, current, resistance, and capacitance measurements (FAA-H-8083-30B)
- GENERAL: AM.I.A.R2 - Handling, storage, and inspection of different types of batteries (i.e., lead acid, NiCad, lithium ion, gel cell) (FAA-H-8083-30B)
- GENERAL: AM.I.A.R3 - High-voltage circuits (e.g., strobe lighting) (FAA-H-8083-30B)
- GENERAL: AM.I.A.R4 - Working around batteries (FAA-H-8083-30B)
- GENERAL: AM.I.B.R1 - Interpretation of plus or minus tolerances as depicted on aircraft drawings (FAA-H-8083-30B)
- GENERAL: AM.I.B.R2 - Specifications for design of alterations and repairs (FAA-H-8083-30B)
- GENERAL: AM.I.B.R3 - Applicability of the drawing or schematic to the particular aircraft by model and serial number (FAA-H-8083-30B)
- GENERAL: AM.I.B.R4 - Identification of the current version and applicability of drawing being used (FAA-H-8083-30B)

- AIRFRAME: AM.II.A.R1 - Selection of repair materials (AC 43.13-1B)
- AIRFRAME: AM.II.A.R2 - Utilizing maintenance safety practices/precautions for sheet metal structures (FAA-H-8083-30B)
- AIRFRAME: AM.II.A.R3 - Use of PPE when working with sheet metal structures (FAA-H-8083-30B)
- AIRFRAME: AM.II.A.R4 - Handling, storage, and use of compressed gas bottles (FAA-H-8083-30B)
- AIRFRAME: AM.II.A.R5 - Use of electric welding equipment (FAA-H-8083-30B)

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## WEEK 2: General (Weight/Balance, Fluid Lines) + Airframe (Non-Metallic Structures)

ACS Codes: AM.I.C, AM.I.D, AM.II.B | Focus: CG calculations, loading, fluid fittings, composites, fabric, wood structures

### GENERAL KNOWLEDGE ELEMENTS (Subject C: Weight & Balance):

- GENERAL: AM.I.C.K1 - Weight and balance terminology (FAA-H-8083-30B)
- GENERAL: AM.I.C.K2 - Purpose for weighing an aircraft (FAA-H-8083-30B)
- GENERAL: AM.I.C.K3 - Weighing procedures, including the general preparations for weighing, with emphasis on aircraft weighing area considerations (FAA-H-8083-30B)
- GENERAL: AM.I.C.K4 - Procedures for calculation of the following: arm, positive or negative moment, center of gravity (CG), or moment index (FAA-H-8083-30B)
- GENERAL: AM.I.C.K5 - Purpose and application of weight and CG limits (FAA-H-8083-30B)
- GENERAL: AM.I.C.K6 - Purpose of determining CG (FAA-H-8083-30B)
- GENERAL: AM.I.C.K7 - Adverse loading considerations and how to calculate if adverse loading causes an out-of-limit condition (FAA-H-8083-30B)
- GENERAL: AM.I.C.K8 - Determine proper empty weight configuration (FAA-H-8083-30B)
- GENERAL: AM.I.C.K9 - Proper ballast placement (FAA-H-8083-30B)
- GENERAL: AM.I.C.K10 - Jacking an aircraft (FAA-H-8083-30B)

### GENERAL KNOWLEDGE ELEMENTS (Subject D: Fluid Lines & Fittings):

- GENERAL: AM.I.D.K1 - Tubing and hose materials, applications, sizes, and fittings (FAA-H-8083-30B)
- GENERAL: AM.I.D.K2 - Rigid line or flexible hose material identification (FAA-H-8083-30B)
- GENERAL: AM.I.D.K3 - Rigid line fabrication, installation, and inspection techniques/practices (FAA-H-8083-30B)
- GENERAL: AM.I.D.K4 - Flexible hose fabrication, installation, and inspection techniques/practices (FAA-H-8083-30B)
- GENERAL: AM.I.D.K5 - Importance of using a torque wrench when securing fluid hose and line fittings (FAA-H-8083-30B)
- GENERAL: AM.I.D.K6 - Use of torque seal or similar witness techniques after installing critical fluid hose and line fittings (FAA-H-8083-30B)

### AIRFRAME KNOWLEDGE ELEMENTS (Subject B: Non-Metallic Structures):

- AIRFRAME: AM.II.B.K1 - Wood structures, including inspection techniques, tools, and practices for wood structures (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K2 - Effects of moisture/humidity on wood and fabric coverings (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K3 - Types and general characteristics of wood used in aircraft structures (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K4 - Permissible substitutes and other materials used in the construction and repair of wood structures (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K5 - Acceptable and unacceptable wood defects (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K6 - Wood repair techniques and practices (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K7 - Factors used in determining the proper type covering material (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K8 - Types of approved aircraft covering material (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K9 - Seams commonly used with aircraft covering (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K10 - Covering textile terms (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K11 - Structure surface preparation (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K12 - Covering methods commonly used (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K13 - Covering means of attachment (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K14 - Areas on aircraft covering most susceptible to deterioration (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K15 - Aircraft covering preservation/restoration (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K16 - Inspection of aircraft covering (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K17 - Covering repair techniques and practices (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K18 - Inspection/testing of composite structures (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K19 - Types of composite structure defects (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K20 - Composite structure fiber, core, and matrix materials (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K21 - Composite materials storage practices and shelf life (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K22 - Composite repair methods, techniques, fasteners, and practices (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K23 - Thermoplastic material inspection/types of defects (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K24 - Thermoplastic material storage and handling (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K25 - Thermoplastic material installation procedures (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K26 - Care and maintenance of windows (FAA-H-8083-31B)

- AIRFRAME: AM.II.B.K27 - Window temporary and permanent repairs (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K28 - Maintenance safety practices/precautions for composite materials/structures, and windows (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.K29 - Inspecting restraints and upholstery (FAA-H-8083-31B)

### **Critical Skills to Practice:**

- GENERAL: AM.I.C.S1 - Research and explain the procedures for weighing an aircraft (FAA-H-8083-30B)
- GENERAL: AM.I.C.S2 - Perform weight and balance calculations (FAA-H-8083-30B)
- GENERAL: AM.I.C.S3 - Calculate ballast weight shift and required weight location (FAA-H-8083-30B)
- GENERAL: AM.I.C.S4 - Check aircraft weighing scales for calibration (FAA-H-8083-30B)
- GENERAL: AM.I.C.S5 - Calculate weight and balance for an aircraft after an equipment change (FAA-H-8083-30B)
- GENERAL: AM.I.C.S6 - Compute forward and aft loaded CG limit (FAA-H-8083-30B)
- GENERAL: AM.I.C.S7 - Create a maintenance record for a weight and balance change (FAA-H-8083-30B)
- GENERAL: AM.I.C.S8 - Compute the empty weight and empty weight CG of an aircraft (FAA-H-8083-30B)
- GENERAL: AM.I.C.S9 - Calculate the moment of an item of equipment (FAA-H-8083-30B)
- GENERAL: AM.I.C.S10 - Identify tare items (FAA-H-8083-30B)
- GENERAL: AM.I.C.S11 - Locate weight and balance information (FAA-H-8083-30B)
- GENERAL: AM.I.C.S12 - Locate datum (FAA-H-8083-30B)
- GENERAL: AM.I.C.S13 - Locate weight and balance placarding and limitation requirements for an aircraft (FAA-H-8083-30B)
- GENERAL: AM.I.C.S14 - Revise an aircraft equipment list after equipment change (FAA-H-8083-30B)
- GENERAL: AM.I.C.S15 - Calculate the change needed to correct an out of balance condition (FAA-H-8083-30B)
- GENERAL: AM.I.C.S16 - Determine an aircraft's CG range using aircraft specifications, Type Certificate Data Sheets (TCDSs), and aircraft listings (FAA-H-8083-30B)
- GENERAL: AM.I.C.S17 - Calculate a weight change and complete required records (FAA-H-8083-30B)
- GENERAL: AM.I.D.S1 - Fabricate a rigid line with a flare and a bend (FAA-H-8083-30B)
- GENERAL: AM.I.D.S2 - Install an aircraft rigid line (FAA-H-8083-30B)
- GENERAL: AM.I.D.S3 - Install an aircraft flexible hose (FAA-H-8083-30B)
- GENERAL: AM.I.D.S4 - Perform a rigid line or flexible hose inspection (FAA-H-8083-30B)
- GENERAL: AM.I.D.S5 - Identify installation and security requirements for rigid lines and flexible hoses (FAA-H-8083-30B)
- GENERAL: AM.I.D.S6 - Identify fluid lines, pneumatic lines, and fittings (FAA-H-8083-30B)
- GENERAL: AM.I.D.S7 - Fabricate a flexible hose (FAA-H-8083-30B)

GENERAL: AM.I.D.S8 - Fabricate a flareless-fitting-tube connection (FAA-H-8083-30B)

- AIRFRAME: AM.II.B.S1 - Identify appropriate fasteners on composite structures (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.S2 - Inspect and repair fiberglass (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.S3 - Inspect composite, plastic, or glass-laminated structures (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.S4 - Clean and inspect acrylic type windshields (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.S5 - Locate and explain procedures for a temporary repair to a side window (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.S6 - Locate and explain the procedures for tying a modified seine knot (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.S7 - Prepare composite surface for painting (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.S8 - Perform a tap test on composite material (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.S9 - Locate and explain repair standard dimensions (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.S10 - Locate and explain repair procedures for elongated bolt holes (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.S11 - Determine extent of damage and decide if nonmetallic structure is repairable (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.S12 - Perform lay up for a repair to a composite panel, including preparation for vacuum bagging, using a manufacturer's repair manual (FAA-H-8083-31B)

**Risk Management Areas:**

- GENERAL: AM.I.C.R1 - Situations and conditions when jacking an aircraft (FAA-H-8083-30B)
- GENERAL: AM.I.C.R2 - Aircraft weighing procedures (FAA-H-8083-30B)
- GENERAL: AM.I.C.R3 - Use of scales (FAA-H-8083-30B)
- GENERAL: AM.I.C.R4 - Aerodynamic effect of CG that is forward or aft of CG limits (FAA-H-8083-30B)
- GENERAL: AM.I.C.R5 - Aerodynamic and performance effects of weight in excess of limits (FAA-H-8083-30B)
- GENERAL: AM.I.D.R1 - System configuration prior to and during maintenance (FAA-H-8083-30B)
- GENERAL: AM.I.D.R2 - Use of required safety equipment (FAA-H-8083-30B)
- GENERAL: AM.I.D.R3 - Hazardous fluids (FAA-H-8083-30B)
- GENERAL: AM.I.D.R4 - High-pressure fluid systems (FAA-H-8083-30B)
- GENERAL: AM.I.D.R5 - A twisted hose (FAA-H-8083-30B)
- GENERAL: AM.I.D.R6 - A loosened fitting or a hose that has moved out of position (FAA-H-8083-30B)

GENERAL: AM.I.D.R7 - Use of tools while applying torque to a fluid line (FAA-H-8083-30B)

- AIRFRAME: AM.II.B.R1 - Selection of glue (adhesive) or fasteners for aircraft structure (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.R2 - Composite structure repairs (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.R3 - Exposure to materials used in composite repair (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.R4 - Storage of composite materials (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.R5 - Measuring and mixing of materials associated with composite construction (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.R6 - Use of materials that are not part of an approved repair system (FAA-H-8083-31B)
- AIRFRAME: AM.II.B.R7 - Material shelf-life (FAA-H-8083-31B)

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## WEEK 3: General (Materials/Hardware, Ground Ops) + Airframe (Flight Controls)

ACS Codes: AM.I.E, AM.I.F, AM.II.C | Focus: Aircraft hardware, materials, taxiing/towing, cables, rigging, control surfaces

### GENERAL KNOWLEDGE ELEMENTS (Subject E: Materials & Hardware):

- GENERAL: AM.I.E.K1 - Materials commonly used in aircraft and their general application (FAA-H-8083-30B)
- GENERAL: AM.I.E.K2 - Heat treatment and metal working processes (FAA-H-8083-30B)
- GENERAL: AM.I.E.K3 - Forces placed on aircraft materials (e.g., tension, compression, torsion, bending, strain, and shear) (FAA-H-8083-30B)
- GENERAL: AM.I.E.K4 - Hardware commonly used in aircraft (e.g., bolts, nuts, screws, pins, washers, turnlock fasteners, cables, cable fittings, and rigid line couplings) (FAA-H-8083-30B)
- GENERAL: AM.I.E.K5 - Safety wire and safety clip requirements and techniques (FAA-H-8083-30B)
- GENERAL: AM.I.E.K6 - Precision measurement tools, principles, and procedures (FAA-H-8083-30B)
- GENERAL: AM.I.E.K7 - Soldering preparation, types of solder, and flux usage (FAA-H-8083-30B)
- GENERAL: AM.I.E.K8 - Torquing tools, principles, and procedures (FAA-H-8083-30B)
- GENERAL: AM.I.E.K9 - Suitability and compatibility of materials and hardware used for maintenance (FAA-H-8083-30B)
- GENERAL: AM.I.E.K10 - Relationship between torque and fastener preload (FAA-H-8083-30B)
- GENERAL: AM.I.E.K11 - Identification markings on materials and hardware (FAA-H-8083-30B)
- GENERAL: AM.I.E.K12 - Characteristics of acceptable welds (FAA-H-8083-30B)
- GENERAL: AM.I.E.K13 - Characteristics of unacceptable welds (FAA-H-8083-30B)
- GENERAL: AM.I.E.K14 - Procedures for weld repairs (FAA-H-8083-30B)

### GENERAL KNOWLEDGE ELEMENTS (Subject F: Ground Operations):

- GENERAL: AM.I.F.K1 - Aircraft towing procedures (FAA-H-8083-30B)
- GENERAL: AM.I.F.K2 - Aircraft securing procedures (FAA-H-8083-30B)
- GENERAL: AM.I.F.K3 - Aviation fueling/defueling procedures (FAA-H-8083-30B)
- GENERAL: AM.I.F.K4 - Airport operation area procedures and ATC communications, including runway incursion prevention (FAA-H-8083-30B)
- GENERAL: AM.I.F.K5 - Engine starting, ground operation, and aircraft taxiing procedures (FAA-H-8083-30B)

- GENERAL: AM.I.F.K6 - Types/classes of fire extinguishers and procedures (FAA-H-8083-30B)
- GENERAL: AM.I.F.K7 - Aircraft oil, hydraulic and pneumatic, and deicing servicing procedures (FAA-H-8083-30B)
- GENERAL: AM.I.F.K8 - Oxygen system servicing procedures (FAA-H-8083-30B)
- GENERAL: AM.I.F.K9 - Characteristics of aviation gasoline and turbine fuels, including basic types and means of identification (FAA-H-8083-30B)
- GENERAL: AM.I.F.K10 - Fuel additives commonly used in the field (FAA-H-8083-30B)
- GENERAL: AM.I.F.K11 - Use of approved grades/types of fuel in aircraft engines (FAA-H-8083-30B)
- GENERAL: AM.I.F.K12 - Tool and hardware use and accountability (FAA-H-8083-30B)
- GENERAL: AM.I.F.K13 - Material handling (FAA-H-8083-30B)
- GENERAL: AM.I.F.K14 - Parts protections (FAA-H-8083-30B)
- GENERAL: AM.I.F.K15 - Hazardous materials, Safety Data Sheets (SDS), and PPE (FAA-H-8083-30B)
- GENERAL: AM.I.F.K16 - Foreign object damage effects (FAA-H-8083-30B)

### **AIRFRAME KNOWLEDGE ELEMENTS (Subject C: Flight Controls):**

- AIRFRAME: AM.II.C.K1 - Control cables (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.K2 - Control cable maintenance (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.K3 - Cable connectors (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.K4 - Cable guides (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.K5 - Control stops (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.K6 - Push-pull tubes (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.K7 - Torque tubes (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.K8 - Bellcranks (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.K9 - Flutter and flight control balance (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.K10 - Rigging of aircraft flight controls (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.K11 - Aircraft flight controls and stabilizer systems (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.K12 - Other aerodynamic wing features (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.K13 - Secondary and auxiliary control surfaces (FAA-H-8083-31B)

### **Critical Skills to Practice:**

- GENERAL: AM.I.E.S1 - Install safety wire on nuts, bolts, and turnbuckles (FAA-H-8083-30B)
- GENERAL: AM.I.E.S2 - Determine and properly torque aircraft hardware (FAA-H-8083-30B)
- GENERAL: AM.I.E.S3 - Inspect and check welds (FAA-H-8083-30B)
- GENERAL: AM.I.E.S4 - Identify aircraft materials and hardware based on manufacturer's markings (FAA-H-8083-30B)
- GENERAL: AM.I.E.S5 - Select and install aircraft bolts (FAA-H-8083-30B)
- GENERAL: AM.I.E.S6 - Make precision measurements with an instrument that has a Vernier scale (FAA-H-8083-30B)
- GENERAL: AM.I.E.S7 - Check the concentricity of a shaft (FAA-H-8083-30B)
- GENERAL: AM.I.E.S8 - Identify aircraft control cable components (FAA-H-8083-30B)
- GENERAL: AM.I.E.S9 - Fabricate a cable assembly using a swaged-end fitting (FAA-H-8083-30B)
- GENERAL: AM.I.E.S10 - Select the correct aluminum alloy for a structural repair (FAA-H-8083-30B)
- GENERAL: AM.I.E.S11 - Identify rivets by physical characteristics (FAA-H-8083-30B)
- GENERAL: AM.I.E.S12 - Determine suitability of materials for aircraft repairs (FAA-H-8083-30B)

- GENERAL: AM.I.E.S13 - Distinguish between heat-treated and non-heat-treated aluminum alloys (FAA-H-8083-30B)
- GENERAL: AM.I.E.S14 - Check for proper calibration of a micrometer (FAA-H-8083-30B)

- GENERAL: AM.I.F.S1 - Perform a foreign object damage control procedure (FAA-H-8083-30B)
- GENERAL: AM.I.F.S2 - Connect external power to an aircraft (FAA-H-8083-30B)
- GENERAL: AM.I.F.S3 - Prepare an aircraft for towing (FAA-H-8083-30B)
- GENERAL: AM.I.F.S4 - Use appropriate hand signals for the movement of aircraft (FAA-H-8083-30B)
- GENERAL: AM.I.F.S5 - Inspect an aircraft fuel system for water and foreign object debris (FOD) contamination (FAA-H-8083-30B)
- GENERAL: AM.I.F.S6 - Identify different grades of aviation fuel (FAA-H-8083-30B)
- GENERAL: AM.I.F.S7 - Select an approved fuel for an aircraft (FAA-H-8083-30B)
- GENERAL: AM.I.F.S8 - Prepare an aircraft for fueling (FAA-H-8083-30B)
- GENERAL: AM.I.F.S9 - Follow a checklist to start up or shut down an aircraft reciprocating or turbine engine (FAA-H-8083-30B)
- GENERAL: AM.I.F.S10 - Identify procedures for extinguishing fires in an engine induction system (FAA-H-8083-30B)
- GENERAL: AM.I.F.S11 - Secure an aircraft (FAA-H-8083-30B)
- GENERAL: AM.I.F.S12 - Locate and explain procedures for securing a turbine-powered aircraft after engine shutdown (FAA-H-8083-30B)
- AIRFRAME: AM.II.C.S1 - Identify fixed-wing aircraft rigging adjustment locations (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.S2 - Identify control surfaces that provide movement about an aircraft's axes (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.S3 - Inspect a primary and secondary flight control surface (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.S4 - Remove and reinstall a primary flight control surface (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.S5 - Inspect primary control cables (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.S6 - Adjust and secure a primary flight control cable (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.S7 - Adjust push-pull flight control systems (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.S8 - Check the balance of a flight control surface (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.S9 - Determine allowable axial play limits for a flight control bearing (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.S10 - Inspect a trim tab for freeplay, travel, and operation (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.S11 - Balance a control surface (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.S12 - Fabricate a primary flight control cable (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.S13 - Locate aircraft flight control travel limits (FAA-H-8083-31B)

### **Risk Management Areas:**

- GENERAL: AM.I.E.R1 - Use of personal protective equipment (PPE) (FAA-H-8083-30B)
- GENERAL: AM.I.E.R2 - Improper torque (FAA-H-8083-30B)
- GENERAL: AM.I.E.R3 - Used hardware or suspected unapproved parts (SUPS) (FAA-H-8083-30B)
- GENERAL: AM.I.E.R4 - Torquing techniques on critical, highly-stressed fasteners (FAA-H-8083-30B)
- GENERAL: AM.I.F.R1 - Preparing to tow an aircraft (FAA-H-8083-30B)
- GENERAL: AM.I.F.R2 - Connecting external power equipment to an aircraft (FAA-H-8083-30B)
- GENERAL: AM.I.F.R3 - Fueling/defueling ungrounded aircraft or using improper equipment (FAA-H-8083-30B)
- GENERAL: AM.I.F.R4 - Misfueling and using incorrect or contaminated fuel (FAA-H-8083-30B)
- GENERAL: AM.I.F.R5 - Oxygen system servicing (FAA-H-8083-30B)
- GENERAL: AM.I.F.R6 - Engine start/run-up without using a checklist (FAA-H-8083-30B)
- GENERAL: AM.I.F.R7 - Engine starting and ground operations (FAA-H-8083-30B)
- GENERAL: AM.I.F.R8 - Engine starting and operation while troubleshooting or adjusting engine controls (FAA-H-8083-30B)
- GENERAL: AM.I.F.R9 - Ground operation of an aircraft engine with cowling removed contrary to manufacturer instructions (FAA-H-8083-30B)
- GENERAL: AM.I.F.R10 - Ground operation of aircraft in the vicinity of other aircraft or ground support equipment (FAA-H-8083-30B)

- AIRFRAME: AM.II.C.R1 - Use of and interpretation of a cable tension chart (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.R2 - Rigging aircraft flight controls (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.R3 - Selection and use of lifting equipment used to move aircraft components into place for assembly (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.R4 - Maintaining a calibration schedule for cable tension meters and other rigging equipment (FAA-H-8083-31B)
- AIRFRAME: AM.II.C.R5 - Use and interpretation of cable tensiometers (FAA-H-8083-31B)

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## WEEK 4: General (Cleaning/Corrosion, Mathematics) + Airframe (Inspection, Landing Gear)

ACS Codes: AM.I.G, AM.I.H, AM.II.D, AM.II.E | Focus: Corrosion control, finishing, calculations, inspection methods, gear systems

### GENERAL KNOWLEDGE ELEMENTS (Subject G: Cleaning and Corrosion Control):

- GENERAL: AM.I.G.K1 - Aircraft cleaning procedures.
- GENERAL: AM.I.G.K2 - Corrosion theory and causation.
- GENERAL: AM.I.G.K3 - Types and effects of corrosion.
- GENERAL: AM.I.G.K4 - Corrosion-prone areas in aircraft.
- GENERAL: AM.I.G.K5 - Corrosion preventive maintenance procedures.
- GENERAL: AM.I.G.K6 - Corrosion identification and inspection.
- GENERAL: AM.I.G.K7 - Corrosion removal and treatment procedures.
- GENERAL: AM.I.G.K8 - Corrosion preventive compounds (CPC) (e.g., waxy sealants, thin-film dielectrics).
- GENERAL: AM.I.G.K9 - Selection of optimal CPC and frequency of treatment.
- GENERAL: AM.I.G.K10 - Use of high-pressure application equipment.
- GENERAL: AM.I.G.K11 - Improper use of cleaners on aluminum or composite materials.
- GENERAL: AM.I.G.K12 - Dissimilar metals causing accelerated corrosion and role of protective barriers to mitigate this risk.
- GENERAL: AM.I.G.K13 - Conversion coatings.
- GENERAL: AM.I.G.K14 - Materials used for protection of airframe structures.
- GENERAL: AM.I.G.K15 - Primer materials.
- GENERAL: AM.I.G.K16 - Topcoat materials.
- GENERAL: AM.I.G.K17 - Surface preparation for a desired finishing material.
- GENERAL: AM.I.G.K18 - Effects of ambient conditions on finishing materials.
- GENERAL: AM.I.G.K19 - Effects of improper surface preparation on finishing materials.
- GENERAL: AM.I.G.K20 - Regulatory requirements for replacing identification, registration markings, and placards.
- GENERAL: AM.I.G.K21 - Inspection of aircraft finishes.
- GENERAL: AM.I.G.K22 - Safety practices/precautions when using finishing materials (e.g., PPE, fire prevention).

- GENERAL: AM.I.G.K23 - Finishing materials application techniques and practices.
- GENERAL: AM.I.G.K24 - Control surface balance considerations after refinishing.

### **GENERAL KNOWLEDGE ELEMENTS (Subject H: Mathematics):**

- GENERAL: AM.I.H.K1 - Areas of various geometrical shapes.
- GENERAL: AM.I.H.K2 - Volumes of various geometrical shapes.
- GENERAL: AM.I.H.K3 - Definitions, descriptions and use of geometrical terms, including but not limited to any of the following: polygon, pi, diameter, radius, and hypotenuse.
- GENERAL: 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.
- GENERAL: 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.
- GENERAL: AM.I.H.K6 - Algebraic operations, including examples of where or how they may be used in relation to aircraft maintenance.
- GENERAL: AM.I.H.K7 - Conditions or areas in which metric conversion may be necessary.
- GENERAL: AM.I.H.K8 - Scientific (exponential) notation, decimal notation, fractional notation, binary notation, and conversion between these various forms of numeric notation.
- GENERAL: AM.I.H.K9 - Rounding numbers.
- GENERAL: AM.I.H.K10 - Powers and special powers.
- GENERAL: AM.I.H.K11 - Measurement systems.
- GENERAL: AM.I.H.K12 - Use of positive and negative integers in mathematical operations.
- GENERAL: AM.I.H.K13 - Basic mathematic functions (addition, subtraction, multiplication, division).

### **AIRFRAME KNOWLEDGE ELEMENTS (Subject D: Airframe Inspection):**

- AIRFRAME: AM.II.D.K1 - Inspection requirements under 14 CFR part 91.
- AIRFRAME: AM.II.D.K2 - Maintenance recordkeeping requirements under 14 CFR part 43.
- AIRFRAME: AM.II.D.K3 - Requirements for complying with ADs.
- AIRFRAME: AM.II.D.K4 - Identification of life-limited parts and their replacement interval.
- AIRFRAME: AM.II.D.K5 - Special inspections.
- AIRFRAME: AM.II.D.K6 - Use of FAA-approved data.
- AIRFRAME: AM.II.D.K7 - Compliance with service letters, service bulletins, instructions for continued airworthiness, or ADs.
- AIRFRAME: AM.II.D.K8 - CFRs applicable to inspection and airworthiness.
- AIRFRAME: AM.II.D.K9 - Corrosion types and identification.

### **AIRFRAME KNOWLEDGE ELEMENTS (Subject E: Landing Gear Systems):**

- AIRFRAME: AM.II.E.K1 - Fixed and retractable landing gear systems.
- AIRFRAME: AM.II.E.K2 - Fixed and retractable landing gear components.
- AIRFRAME: AM.II.E.K3 - Landing gear strut servicing/lubrication.
- AIRFRAME: AM.II.E.K4 - Inspection of bungee and spring steel landing gear systems.
- AIRFRAME: AM.II.E.K5 - Steering systems.
- AIRFRAME: AM.II.E.K6 - Landing gear position and warning system inspection, check, and servicing.
- AIRFRAME: AM.II.E.K7 - Brake assembly servicing and inspection.
- AIRFRAME: AM.II.E.K8 - Anti-skid system components and operation.
- AIRFRAME: AM.II.E.K9 - Wheel, brake, and tire construction.
- AIRFRAME: AM.II.E.K10 - Tire storage, care, and servicing.
- AIRFRAME: AM.II.E.K11 - Landing gear and tire and wheel safety and inspection.
- AIRFRAME: AM.II.E.K12 - Brake actuating systems.
- AIRFRAME: AM.II.E.K13 - Alternative landing gear systems (e.g., skis, floats).

### **Critical Skills to Practice:**

- GENERAL: AM.I.G.S1 - Perform a portion of an aircraft corrosion inspection.
- GENERAL: AM.I.G.S2 - Identify, select, and use aircraft corrosion prevention/cleaning materials.
- GENERAL: AM.I.G.S3 - Apply corrosion prevention/coating materials.
- GENERAL: AM.I.G.S4 - Inspect finishes and identify defects.
- GENERAL: AM.I.G.S5 - Inspect an aircraft compartment for corrosion.
- GENERAL: AM.I.G.S6 - Identify procedures to clean and protect plastics.
- GENERAL: AM.I.G.S7 - Determine location and size requirements for aircraft registration numbers.
- GENERAL: AM.I.G.S8 - Prepare composite surface for painting.
- GENERAL: AM.I.G.S9 - Identify finishing materials and appropriate thinners.
- GENERAL: AM.I.G.S10 - Layout and mask a surface in preparation for painting.
- GENERAL: AM.I.G.S11 - Prepare metal surface for painting.
- GENERAL: AM.I.G.S12 - Determine what paint system can be used on a given aircraft.
- GENERAL: AM.I.G.S13 - Apply etch solution and conversion coating.

- GENERAL: AM.I.G.S14 - Identify types of protective finishes.
- GENERAL: AM.I.H.S1 - Determine the square root of given numbers.
- GENERAL: AM.I.H.S2 - Compute the volume of a cylinder.
- GENERAL: AM.I.H.S3 - Compute the area of a wing.
- GENERAL: AM.I.H.S4 - Calculate the volume of a shape, such as a baggage compartment or fuel tank.
- GENERAL: AM.I.H.S5 - Convert between fractional and decimal numbers.
- GENERAL: AM.I.H.S6 - Compare two numerical values using ratios.
- GENERAL: AM.I.H.S7 - Compute compression ratio.
- GENERAL: AM.I.H.S8 - Compute the torque value when converting from inch-pounds to foot-pounds or from foot-pounds to inch-pounds.

- AIRFRAME: AM.II.D.S1 - Perform an airframe inspection, including a records check.
- AIRFRAME: AM.II.D.S2 - Perform a portion of a 100-hour inspection in accordance with 14 CFR part 43.
- AIRFRAME: AM.II.D.S3 - Enter results of a 100-hour inspection in a maintenance record.
- AIRFRAME: AM.II.D.S4 - Determine compliance with a specific AD.
- AIRFRAME: AM.II.D.S5 - Provide a checklist for conducting a 100-hour inspection.
- AIRFRAME: AM.II.D.S6 - Determine if any additional inspections are required during a particular 100-hour inspection; (i.e., 300-hour filter replacement).
- AIRFRAME: AM.II.D.S7 - Inspect seat and seatbelt, including TSO markings.
- AIRFRAME: AM.II.E.S1 - Inspect and service landing gear.
- AIRFRAME: AM.II.E.S2 - Inspect, check, and service an anti-skid system.
- AIRFRAME: AM.II.E.S3 - Locate and explain procedures for checking operation of an anti-skid warning system.
- AIRFRAME: AM.II.E.S4 - Locate and explain troubleshooting procedures for an anti-skid system.
- AIRFRAME: AM.II.E.S5 - Jack aircraft.
- AIRFRAME: AM.II.E.S6 - Troubleshoot a landing gear retraction check.
- AIRFRAME: AM.II.E.S7 - Inspect wheels, brakes, bearings, and tires.
- AIRFRAME: AM.II.E.S8 - Remove and replace brake lining(s).
- AIRFRAME: AM.II.E.S9 - Service landing gear air/oil shock strut.
- AIRFRAME: AM.II.E.S10 - Bleed air from a hydraulic brake system.
- AIRFRAME: AM.II.E.S11 - Troubleshoot hydraulic brake systems.
- AIRFRAME: AM.II.E.S12 - Remove, inspect, and install a wheel brake assembly.
- AIRFRAME: AM.II.E.S13 - Inspect a tire for defects.
- AIRFRAME: AM.II.E.S14 - Locate tire storage practices.
- AIRFRAME: AM.II.E.S15 - Replace air/oil shock strut air valve.
- AIRFRAME: AM.II.E.S16 - Troubleshoot an air/oil shock strut.
- AIRFRAME: AM.II.E.S17 - Service a nose-wheel shimmy damper.
- AIRFRAME: AM.II.E.S18 - Inspect nose-wheel steering system for proper adjustment.
- AIRFRAME: AM.II.E.S19 - Locate and explain the process for checking landing gear alignment.
- AIRFRAME: AM.II.E.S20 - Replace master brake cylinder packing seals.

- AIRFRAME: AM.II.E.S21 - Troubleshoot aircraft steering system.
- AIRFRAME: AM.II.E.S22 - Identify landing gear position and warning system components.
- AIRFRAME: AM.II.E.S23 - Troubleshoot landing gear position and warning systems.
- AIRFRAME: AM.II.E.S24 - Inspect and repair landing gear position indicating system.
- AIRFRAME: AM.II.E.S25 - Adjust the operation of a landing gear warning system.
- AIRFRAME: AM.II.E.S26 - Remove, install, and adjust a landing gear down-lock switch.
- AIRFRAME: AM.II.E.S27 - Inspect a brake for serviceability.
- AIRFRAME: AM.II.E.S28 - Troubleshoot nose-wheel shimmy.
- AIRFRAME: AM.II.E.S29 - Inspect tube landing gear for damage.

## Risk Management Areas:

- GENERAL: AM.I.G.R1 - Health concerns when using paints, solvents, finishing materials, and processes.
- GENERAL: AM.I.G.R2 - Ventilation.
- GENERAL: AM.I.G.R3 - Identification of materials and processes to be used for cleaning or corrosion treatment on a given part or structure to prevent further damage.
- GENERAL: AM.I.G.R4 - SDS PPE instructions for products during removal and treatment of corrosion.
- GENERAL: AM.I.G.R5 - Working with flammable chemicals.
- GENERAL: AM.I.G.R6 - Disposal of chemicals and waste materials.
- GENERAL: AM.I.G.R7 - Use of PPE when working with paints and solvents.
- GENERAL: AM.I.G.R8 - Application of finishing materials.
- GENERAL: AM.I.H.R1 - Precedence of operations when solving an algebraic equation.
- GENERAL: AM.I.H.R2 - Use of both positive and negative integers in mathematical operations.
- GENERAL: AM.I.H.R3 - Rounding off calculations.
- AIRFRAME: AM.II.D.R1 - Interpretation of inspection instructions, which can lead to over or under maintenance being performed.
- AIRFRAME: AM.II.D.R2 - Visual inspection and where to apply it.
- AIRFRAME: AM.II.D.R3 - Performing radiographic inspections.
- AIRFRAME: AM.II.D.R4 - Selection and use of checklists and other maintenance publications.
- AIRFRAME: AM.II.D.R5 - Maintenance record documentation.
- AIRFRAME: AM.II.E.R1 - Landing gear and tire and wheel practices/precautions.
- AIRFRAME: AM.II.E.R2 - Use of aircraft jacks.
- AIRFRAME: AM.II.E.R3 - High pressure fluids and gases.
- AIRFRAME: AM.II.E.R4 - Storage and handling of hydraulic fluids.
- AIRFRAME: AM.II.E.R5 - High pressure strut or system disassembly.
- AIRFRAME: AM.II.E.R6 - Operation of retractable landing gear systems around personnel.

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## WEEK 5: General (Regulations/Records, Physics) + Airframe (Hydraulic/Pneumatic, Environmental)

ACS Codes: AM.I.I, AM.I.I.J, AM.II.F, AM.II.G | Focus: FARs, maintenance documentation, basic physics, hydraulics, environmental systems

### GENERAL KNOWLEDGE ELEMENTS (Subject I: Regulations, Maintenance Forms, Records, and Publications):

- GENERAL: AM.I.I.K1 - Privileges and limitations of a mechanic certificate.
- GENERAL: AM.I.I.K2 - Recent experience requirements and how to re-establish once lost.
- GENERAL: AM.I.I.K3 - Maintenance record entry for approval for return to service after maintenance and alterations.
- GENERAL: AM.I.I.K4 - Maintenance record entry for approval for return to service after inspection.
- GENERAL: AM.I.I.K5 - The purpose and use of FAA forms (e.g., FAA Forms 337, 8010-4, 8100-2, 8130-3).
- GENERAL: AM.I.I.K6 - 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).
- GENERAL: AM.I.I.K7 - Criteria and responsibility for determining whether a repair or alteration is major or minor.
- GENERAL: AM.I.I.K8 - The regulatory framework, including general subject matter of the parts of 14 CFR relevant to aircraft maintenance and mechanics.
- GENERAL: AM.I.I.K9 - Agency publications and guidance materials, including aircraft specifications, TCDSs, advisory circulars (AC), and airworthiness directives (AD).
- GENERAL: AM.I.I.K10 - Alternative Method of Compliance (AMOC) for an AD.
- GENERAL: AM.I.I.K11 - Manufacturer publications, including maintenance manuals, service bulletins, maintenance alerts, and master minimum equipment lists.
- GENERAL: AM.I.I.K12 - FAA databases and resources available, including TCDSs and supplemental type certificates.
- GENERAL: AM.I.I.K13 - Compliance requirements for manufacturer-specified methods, techniques, and practices.
- GENERAL: AM.I.I.K14 - Compliance requirements for manufacturer-specified maintenance and inspection intervals.
- GENERAL: AM.I.I.K15 - FAA-approved maintenance data, including maintenance manuals and other methods, techniques, and practices acceptable by the administrator.
- GENERAL: AM.I.I.K16 - Difference between approved data and acceptable data, and when each is required.

- GENERAL: AM.I.I.K17 - FAA-approved airworthiness limitations.
- GENERAL: AM.I.I.K18 - Alert, caution, and warning indications; and the basic definition of warnings, cautions, and notes that are used in maintenance and operating manuals.
- GENERAL: AM.I.I.K19 - Inoperative equipment.
- GENERAL: AM.I.I.K20 - Discrepancy records or placards.
- GENERAL: AM.I.I.K21 - Usable on (effectivity) codes in parts manuals.
- GENERAL: AM.I.I.K22 - Methods used to establish the serial number effectivity of an item.
- GENERAL: AM.I.I.K23 - Mechanic address change notification procedures.

### **GENERAL KNOWLEDGE ELEMENTS (Subject J: Physics for Aviation):**

- GENERAL: AM.I.J.K1 - Matter and energy.
- GENERAL: AM.I.J.K2 - Work, power, force, and motion.
- GENERAL: AM.I.J.K3 - Simple machines and mechanics.
- GENERAL: AM.I.J.K4 - Heat and pressure.
- GENERAL: AM.I.J.K5 - Bernoulli's Principle.
- GENERAL: AM.I.J.K6 - Newton's Law of Motion.
- GENERAL: AM.I.J.K7 - Gas law and fluid mechanics.
- GENERAL: AM.I.J.K8 - Theory of flight (aerodynamics).
- GENERAL: AM.I.J.K9 - Standard atmosphere and factors affecting atmospheric conditions.
- GENERAL: AM.I.J.K10 - Primary and secondary aircraft flight controls.
- GENERAL: AM.I.J.K11 - Additional aerodynamic devices, including vortex generators, wing fences, and stall strips.
- GENERAL: AM.I.J.K12 - Relationship between temperature, density, weight, and volume.
- GENERAL: AM.I.J.K13 - Force, area, or pressure in a specific application.

### **AIRFRAME KNOWLEDGE ELEMENTS (Subject F: Hydraulic and Pneumatic Systems):**

- AIRFRAME: AM.II.F.K1 - Hydraulic system components and fluids.
- AIRFRAME: AM.II.F.K2 - Hydraulic system operation.
- AIRFRAME: AM.II.F.K3 - Hydraulic system servicing requirements.
- AIRFRAME: AM.II.F.K4 - Hydraulic system inspection, check, servicing, and troubleshooting.
- AIRFRAME: AM.II.F.K5 - Pneumatic system types and components.
- AIRFRAME: AM.II.F.K6 - Pneumatic system servicing requirements.
- AIRFRAME: AM.II.F.K7 - Servicing, function, and operation of accumulators.
- AIRFRAME: AM.II.F.K8 - Types of hydraulic/pneumatic seals and fluid/seal compatibility.
- AIRFRAME: AM.II.F.K9 - Hoses, lines, and fittings.
- AIRFRAME: AM.II.F.K10 - Pressure regulators, restrictors, and valves.
- AIRFRAME: AM.II.F.K11 - Filter maintenance procedures.

## **AIRFRAME KNOWLEDGE ELEMENTS (Subject G: Environmental Systems):**

- AIRFRAME: AM.II.G.K1 - Pressurization systems.
- AIRFRAME: AM.II.G.K2 - Bleed air heating.
- AIRFRAME: AM.II.G.K3 - Aircraft instrument cooling.
- AIRFRAME: AM.II.G.K4 - Exhaust heat exchanger and system component(s) function, operation, and inspection procedures.
- AIRFRAME: AM.II.G.K5 - Combustion heater and system component(s) function, operation, and inspection procedures.
- AIRFRAME: AM.II.G.K6 - Vapor-cycle system and system component(s) operation, servicing, and inspection procedures.
- AIRFRAME: AM.II.G.K7 - Air-cycle system and system component(s) operation and inspection procedures.
- AIRFRAME: AM.II.G.K8 - Cabin pressurization and system component(s) operation and inspection procedures.
- AIRFRAME: AM.II.G.K9 - Types of oxygen systems and oxygen system component(s) operation (e.g., chemical generator, pressure cylinder).
- AIRFRAME: AM.II.G.K10 - Oxygen system maintenance and inspection procedures.

## **Critical Skills to Practice:**

- GENERAL: AM.I.I.S1 - Complete an FAA Form 337 for a major repair or alteration.
- GENERAL: AM.I.I.S2 - Examine an FAA Form 337 for accuracy.
- GENERAL: AM.I.I.S3 - Determine an aircraft's inspection status by reviewing the aircraft's maintenance records.
- GENERAL: AM.I.I.S4 - Complete an aircraft maintenance record entry for the compliance of a reoccurring AD for a specific airframe, aircraft engine, appliance, or propeller.
- GENERAL: AM.I.I.S5 - Compare an equipment list for an aircraft to equipment installed.
- GENERAL: AM.I.I.S6 - Locate applicable FAA aircraft specifications and FAA TCDS for an aircraft or component.
- GENERAL: AM.I.I.S7 - Complete an aircraft maintenance record entry for return to service.
- GENERAL: AM.I.I.S8 - Determine applicability of an AD.
- GENERAL: AM.I.I.S9 - Check a Technical Standard Order (TSO) or part manufacturing authorization for the proper markings.

- GENERAL: AM.I.I.S10 - Use a manufacturer's illustrated parts catalog to locate a specific part number and applicability.
- GENERAL: AM.I.I.S11 - Locate supplemental type certificates applicable to a specific aircraft.
- GENERAL: AM.I.I.S12 - Determine the conformity of aircraft instrument range markings and placarding.
- GENERAL: AM.I.I.S13 - Determine approved replacement parts for installation on a given aircraft.
- GENERAL: AM.I.I.S14 - Determine maximum allowable weight of a specific aircraft.
- GENERAL: AM.I.I.S15 - Determine whether a given repair or alteration is major or minor.
- GENERAL: AM.I.I.S16 - Determine applicability of approved data for a major repair.
- GENERAL: AM.I.I.S17 - Explain the difference between 'approved data' (required for major repair/alteration) and 'acceptable data' (required for minor repair/alteration).
- GENERAL: AM.I.I.S18 - Complete a 100-hour inspection aircraft maintenance record entry.

- GENERAL: AM.I.J.S1 - Convert temperature units (e.g., from Celsius to Fahrenheit).
- GENERAL: AM.I.J.S2 - Determine density altitude.
- GENERAL: AM.I.J.S3 - Determine pressure altitude.
- GENERAL: AM.I.J.S4 - Calculate force, area, or pressure in a specific application.
- GENERAL: AM.I.J.S5 - Demonstrate the mechanical advantage of various types of levers.
- GENERAL: AM.I.J.S6 - Design an inclined plane on paper, indicating the mechanical advantage.
- GENERAL: AM.I.J.S7 - Identify changes in pressure and velocity as a fluid passes through a venturi.
- GENERAL: AM.I.J.S8 - Calculate horsepower.
- AIRFRAME: AM.II.F.S1 - Identify different types of hydraulic fluids.
- AIRFRAME: AM.II.F.S2 - Identify different packing seals.
- AIRFRAME: AM.II.F.S3 - Install seals and backup rings in a hydraulic component.
- AIRFRAME: AM.II.F.S4 - Remove and install a selector valve.
- AIRFRAME: AM.II.F.S5 - Check a pressure regulator and adjust as necessary.
- AIRFRAME: AM.II.F.S6 - Remove, clean, inspect, and install a hydraulic system filter.
- AIRFRAME: AM.II.F.S7 - Service a hydraulic system accumulator.
- AIRFRAME: AM.II.F.S8 - Service a hydraulic system reservoir.
- AIRFRAME: AM.II.F.S9 - Remove, install, and perform an operational check of a hydraulic pump.
- AIRFRAME: AM.II.F.S10 - Locate procedures for checking pneumatic/bleed air overheat warning systems.
- AIRFRAME: AM.II.F.S11 - Purge air from a hydraulic system.
- AIRFRAME: AM.II.F.S12 - Remove and install a system pressure relief valve.
- AIRFRAME: AM.II.F.S13 - Inspect a hydraulic or pneumatic system for leaks.
- AIRFRAME: AM.II.F.S14 - Troubleshoot a hydraulic or pneumatic system for leaks.
- AIRFRAME: AM.II.F.S15 - Locate and explain hydraulic fluid servicing instructions and identify/select fluid for a given aircraft.
- AIRFRAME: AM.II.F.S16 - Locate installation procedures for a seal, backup ring, or gasket.
- AIRFRAME: AM.II.G.S1 - Inspect an oxygen system.
- AIRFRAME: AM.II.G.S2 - Purge an oxygen system prior to servicing.
- AIRFRAME: AM.II.G.S3 - Service an oxygen system.
- AIRFRAME: AM.II.G.S4 - Clean and inspect a pilot emergency oxygen mask and supply hoses.

- AIRFRAME: AM.II.G.S5 - Inspect an oxygen system pressure regulator.
- AIRFRAME: AM.II.G.S6 - Inspect an oxygen system cylinder for serviceability.
- AIRFRAME: AM.II.G.S7 - Inspect a chemical oxygen generator for serviceability and safe handling.
- AIRFRAME: AM.II.G.S8 - Locate the procedures to troubleshoot a combustion heater.
- AIRFRAME: AM.II.G.S9 - Locate the procedures for servicing a refrigerant (vapor-cycle) system.
- AIRFRAME: AM.II.G.S10 - Inspect a combustion heater fuel system for leaks.
- AIRFRAME: AM.II.G.S11 - Locate the troubleshooting procedures for an air-cycle system.
- AIRFRAME: AM.II.G.S12 - Troubleshoot an air-cycle air conditioning system.
- AIRFRAME: AM.II.G.S13 - Inspect a cabin heater system equipped with an exhaust heat exchanger for cracks.
- AIRFRAME: AM.II.G.S14 - Clean and inspect an outflow valve for a pressurization system.
- AIRFRAME: AM.II.G.S15 - Locate troubleshooting procedures for a pressurization system.

## Risk Management Areas:

- GENERAL: AM.I.I.R1 - Completeness or accuracy of documentation.
- GENERAL: AM.I.I.R2 - Use of SDS.
- GENERAL: AM.I.I.R3 - Complacency during documentation phase of maintenance procedures.
- GENERAL: AM.I.I.R4 - Adherence to warnings, cautions, or notes in maintenance and operational manuals.
- GENERAL: AM.I.I.R5 - Determination of component applicability to a given aircraft.
- GENERAL: AM.I.J.R1 - Changes in aircraft and engine performance due to density altitude.
- GENERAL: AM.I.J.R2 - Effect a repair can have on a flight surface.
- GENERAL: AM.I.J.R3 - Use of performance/testing data.
- GENERAL: AM.I.J.R4 - Use of related units of measure (e.g., Celsius vs. Fahrenheit).
- AIRFRAME: AM.II.F.R1 - Relieving system pressure prior to system servicing or disassembly.
- AIRFRAME: AM.II.F.R2 - High pressure gases and fluids.
- AIRFRAME: AM.II.F.R3 - Storage and handling of hydraulic fluids.
- AIRFRAME: AM.II.F.R4 - Cross-contamination of hydraulic fluids.
- AIRFRAME: AM.II.F.R5 - Compatibility between hydraulic seals and hydraulic fluids.
- AIRFRAME: AM.II.G.R1 - Oxygen system maintenance.
- AIRFRAME: AM.II.G.R2 - Recovery of vapor-cycle refrigerant.
- AIRFRAME: AM.II.G.R3 - Handling or performing maintenance on, chemical oxygen generating systems.
- AIRFRAME: AM.II.G.R4 - Storage, handling, and use of compressed gas cylinder and high pressure systems.
- AIRFRAME: AM.II.G.R5 - Manufacturer's recommended servicing procedures, including refrigerant types.
- AIRFRAME: AM.II.G.R6 - Maintenance of combustion heaters.

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## WEEK 6: General (Inspection Concepts, Human Factors) + Airframe (Instruments, Comm/Nav)

ACS Codes: AM.I.K, AM.I.L, AM.II.H, AM.II.I | Focus: NDT, human performance, instruments, avionics

### GENERAL KNOWLEDGE ELEMENTS (Subject K: Inspection Concepts and Techniques):

- GENERAL: AM.I.K.K1 - Measuring tools, including calipers, micrometers, and gauges.
- GENERAL: AM.I.K.K2 - Calibration and tool accuracy requirements.
- GENERAL: AM.I.K.K3 - Nondestructive Testing (NDT) procedures and methods.
- GENERAL: AM.I.K.K4 - Aircraft inspection programs (e.g., progressive, 100-hour, annual, and other FAA-approved inspections).
- GENERAL: AM.I.K.K5 - Aircraft inspection methods and tools for materials, hardware, and processes.

### GENERAL KNOWLEDGE ELEMENTS (Subject L: Human Factors):

- GENERAL: AM.I.L.K1 - Safety culture and organizational factors.
- GENERAL: AM.I.L.K2 - Human error principles.
- GENERAL: AM.I.L.K3 - Event investigation.
- GENERAL: AM.I.L.K4 - Human performance and limitations.
- GENERAL: AM.I.L.K5 - Physical and social environment.
- GENERAL: AM.I.L.K6 - Communication/reporting of hazards.
- GENERAL: AM.I.L.K7 - Teamwork and leadership.
- GENERAL: AM.I.L.K8 - Professionalism and integrity.
- GENERAL: AM.I.L.K9 - Shift and task turnover.
- GENERAL: AM.I.L.K10 - Conditions/preconditions for unsafe acts.
- GENERAL: AM.I.L.K11 - Types of human errors.

### AIRFRAME KNOWLEDGE ELEMENTS (Subject H: Aircraft Instrument Systems):

- AIRFRAME: AM.II.H.K1 - Annunciator indicating systems and the meaning of warning, caution, and advisory lights.
- AIRFRAME: AM.II.H.K2 - Magnetic compass inspection and operation.
- AIRFRAME: AM.II.H.K3 - Magnetic compass swinging procedures.
- AIRFRAME: AM.II.H.K4 - Pressure indicating instruments.

- AIRFRAME: AM.II.H.K5 - Temperature indicating instruments.
- AIRFRAME: AM.II.H.K6 - Position indication sensors and instruments.
- AIRFRAME: AM.II.H.K7 - Gyroscopic instruments.
- AIRFRAME: AM.II.H.K8 - Direction indicating instruments.
- AIRFRAME: AM.II.H.K9 - Instrument vacuum and pneumatic systems.
- AIRFRAME: AM.II.H.K10 - Pitot-static system.
- AIRFRAME: AM.II.H.K11 - Fuel quantity indicating systems.
- AIRFRAME: AM.II.H.K12 - Instrument range markings.
- AIRFRAME: AM.II.H.K13 - Electronic displays.
- AIRFRAME: AM.II.H.K14 - Electrostatic sensitive devices.
- AIRFRAME: AM.II.H.K15 - Built-in test equipment.
- AIRFRAME: AM.II.H.K16 - Electronic flight instrument system.
- AIRFRAME: AM.II.H.K17 - Engine indication and crew alerting system.
- AIRFRAME: AM.II.H.K18 - Head-up displays (HUDs).
- AIRFRAME: AM.II.H.K19 - 14 CFR parts 43 and 91 requirements for static system leak checks.
- AIRFRAME: AM.II.H.K20 - Instrument limitations, conditions, and characteristics.
- AIRFRAME: AM.II.H.K21 - Angle of attack and stall warning systems.
- AIRFRAME: AM.II.H.K22 - Takeoff and landing gear configuration warning systems.
- AIRFRAME: AM.II.H.K23 - Aircraft bonding and protection.
- AIRFRAME: AM.II.H.K24 - Instrument or instrument panel removal and installation.

## **AIRFRAME KNOWLEDGE ELEMENTS (Subject I: Communication and Navigation Systems):**

- AIRFRAME: AM.II.I.K1 - Radio operating principles.
- AIRFRAME: AM.II.I.K2 - Radio components.
- AIRFRAME: AM.II.I.K3 - Antenna, static discharge wicks, and avionics identification, inspection, and mounting requirements.
- AIRFRAME: AM.II.I.K4 - Interphone and intercom systems.
- AIRFRAME: AM.II.I.K5 - Very high frequency (VHF), high frequency (HF), and SATCOM systems.
- AIRFRAME: AM.II.I.K6 - Aircraft Communication Addressing and Reporting System (ACARS) theory, components, and operation.
- AIRFRAME: AM.II.I.K7 - Emergency locator transmitter (ELT).
- AIRFRAME: AM.II.I.K8 - Automatic direction finder (ADF).
- AIRFRAME: AM.II.I.K9 - VHF omnidirectional range (VOR) theory, components, and operation.
- AIRFRAME: AM.II.I.K10 - Distance measuring equipment (DME) theory, components, and operation.
- AIRFRAME: AM.II.I.K11 - Instrument landing system (ILS) theory, components, and operation.
- AIRFRAME: AM.II.I.K12 - Global positioning system (GPS) theory, components, and operation.
- AIRFRAME: AM.II.I.K13 - Traffic collision avoidance system (TCAS), theory, components, and operation.
- AIRFRAME: AM.II.I.K14 - Weather radar.
- AIRFRAME: AM.II.I.K15 - Ground proximity warning system (GPWS) theory, components, and operation.
- AIRFRAME: AM.II.I.K16 - Autopilot theory, components, and operation.
- AIRFRAME: AM.II.I.K17 - Auto-throttle theory, components, and operation.
- AIRFRAME: AM.II.I.K18 - Stability augmentation systems (SAS) (Rotorcraft).
- AIRFRAME: AM.II.I.K19 - Radio altimeter (RA) theory, components, and operation.
- AIRFRAME: AM.II.I.K20 - Automatic Dependent Surveillance-Broadcast (ADS-B) theory, components, and operation.
- AIRFRAME: AM.II.I.K21 - Transponder/encoder system.

### **Critical Skills to Practice:**

- GENERAL: AM.I.K.S1 - Use Vernier calipers.
- GENERAL: AM.I.K.S2 - Use micrometers.
- GENERAL: AM.I.K.S3 - Use measurement gauges.

- GENERAL: AM.I.K.S4 - Perform a visual inspection.
- GENERAL: AM.I.K.S5 - Perform a dye penetrant inspection.
- GENERAL: AM.I.K.S6 - Inspect aircraft for compliance with an AD.
- GENERAL: AM.I.K.S7 - Identify NDT methods for composite, surface metal, and subsurface metal defects.
- GENERAL: AM.I.K.S8 - Perform a tap test on a composite component.
- GENERAL: AM.I.L.S1 - File a Malfunction or Defect Report.
- GENERAL: AM.I.L.S2 - Brief a shift turnover for continuity of work.
- GENERAL: AM.I.L.S3 - Locate information regarding human factors errors.

- AIRFRAME: AM.II.H.S1 - Perform a static system leak test.
- AIRFRAME: AM.II.H.S2 - Remove and install an instrument.
- AIRFRAME: AM.II.H.S3 - Install range marks on an instrument glass.
- AIRFRAME: AM.II.H.S4 - Determine barometric pressure using an altimeter.
- AIRFRAME: AM.II.H.S5 - Check for proper range markings on an instrument.
- AIRFRAME: AM.II.H.S6 - Inspect a magnetic compass.
- AIRFRAME: AM.II.H.S7 - Locate the procedures for troubleshooting a vacuum-operated instrument system.
- AIRFRAME: AM.II.H.S8 - Select proper altimeter for installation on a given aircraft.
- AIRFRAME: AM.II.H.S9 - Identify exhaust gas temperature system components.
- AIRFRAME: AM.II.H.S10 - Inspect a vacuum system filter for serviceability.
- AIRFRAME: AM.II.H.S11 - Adjust gyro/instrument air pressure/vacuum.
- AIRFRAME: AM.II.H.S12 - Inspect an aircraft's alternate air (static) source.
- AIRFRAME: AM.II.H.S13 - Locate and explain the adjustment procedures for a stall warning system.
- AIRFRAME: AM.II.H.S14 - Inspect outside air temperature gauge for condition and operation.
- AIRFRAME: AM.II.I.S1 - Make a list of required placards for communication and navigation avionic equipment.
- AIRFRAME: AM.II.I.S2 - Locate and explain autopilot inspection procedures.
- AIRFRAME: AM.II.I.S3 - List autopilot major components.
- AIRFRAME: AM.II.I.S4 - Locate and identify navigation and communication antennas.
- AIRFRAME: AM.II.I.S5 - Check VHF communications for operation.
- AIRFRAME: AM.II.I.S6 - Inspect a coaxial cable installation for security.
- AIRFRAME: AM.II.I.S7 - Check an emergency locator transmitter for operation.
- AIRFRAME: AM.II.I.S8 - Inspect ELT batteries for expiration date and locate proper testing procedures.
- AIRFRAME: AM.II.I.S9 - Inspect electronic equipment mounting base for security and condition.
- AIRFRAME: AM.II.I.S10 - Inspect electronic equipment shock mount bonding jumpers for resistance.
- AIRFRAME: AM.II.I.S11 - Inspect static discharge wicks for security and resistance.
- AIRFRAME: AM.II.I.S12 - Inspect a radio installation for security.
- AIRFRAME: AM.II.I.S13 - Locate and explain the installation procedures for antennas, including mounting and coaxial connections.

### **Risk Management Areas:**

- GENERAL: AM.I.K.R1 - Demagnetizing a component following a magnetic particle inspection.
- GENERAL: AM.I.K.R2 - Using precision measuring instruments.
- GENERAL: AM.I.K.R3 - Calibration of precision measuring equipment.
- GENERAL: AM.I.K.R4 - Selection of inspection techniques.
- GENERAL: AM.I.K.R5 - Damage prevention to aircraft components and test equipment when using an ohmmeter.
- GENERAL: AM.I.L.R1 - Selective reporting of hazards.
- GENERAL: AM.I.L.R2 - Fatigue management and fitness for duty.
- GENERAL: AM.I.L.R3 - Non-invasive, condition-monitoring technologies.
- AIRFRAME: AM.II.H.R1 - Use of pressurized air and water during maintenance or cleaning of aircraft instrument systems.
- AIRFRAME: AM.II.H.R2 - Actions in response to a reported intermittent warning or caution annunciator light illumination.
- AIRFRAME: AM.II.H.R3 - Performing maintenance on equipment identified as electrostatic-sensitive.
- AIRFRAME: AM.II.H.R4 - Handling of mechanical gyros or instruments containing mechanical gyros.
- AIRFRAME: AM.II.H.R5 - Performing a pitot/static system test.
- AIRFRAME: AM.II.I.R1 - ELT testing procedures.
- AIRFRAME: AM.II.I.R2 - Performing maintenance on high power/high frequency systems (e.g., weather radar and SATCOM).
- AIRFRAME: AM.II.I.R3 - Wire harness routing.
- AIRFRAME: AM.II.I.R4 - Mounting antennas.
- AIRFRAME: AM.II.I.R5 - Electro-static discharge.
- AIRFRAME: AM.II.I.R6 - Working around live electrical systems.

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## WEEK 7: Airframe (Fuel Systems, Electrical Systems, Ice/Rain Control)

ACS Codes: AM.II.J, AM.II.K, AM.II.L | Focus: Fuel tanks/pumps, electrical power, ice protection

### AIRFRAME KNOWLEDGE ELEMENTS (Subject J: Aircraft Fuel Systems):

- AIRFRAME: AM.II.J.K1 - Fuel system types.
- AIRFRAME: AM.II.J.K2 - Fuel system components, including filters and selector valves.
- AIRFRAME: AM.II.J.K3 - Aircraft fuel tanks/cells.
- AIRFRAME: AM.II.J.K4 - Fuel flow.
- AIRFRAME: AM.II.J.K5 - Fuel transfer, fueling, and defueling.
- AIRFRAME: AM.II.J.K6 - Fuel jettisoning/dump systems.
- AIRFRAME: AM.II.J.K7 - Characteristics of fuel types.
- AIRFRAME: AM.II.J.K8 - Fuel system maintenance and inspection.
- AIRFRAME: AM.II.J.K9 - Fuel quantity indication.

### AIRFRAME KNOWLEDGE ELEMENTS (Subject K: Aircraft Electrical Systems):

- AIRFRAME: AM.II.K.K1 - Generators, DC generation systems, and DC power distribution systems.
- AIRFRAME: AM.II.K.K2 - Alternators, AC generation systems, and AC power distribution systems.
- AIRFRAME: AM.II.K.K3 - Starter generators.
- AIRFRAME: AM.II.K.K4 - Constant speed drive (CSD) and integrated drive generator (IDG) systems and components.
- AIRFRAME: AM.II.K.K5 - Voltage regulators and over-volt and overcurrent protection.
- AIRFRAME: AM.II.K.K6 - Inverter systems.
- AIRFRAME: AM.II.K.K7 - Aircraft wiring sizes, types, selection, installation and circuit protection devices.
- AIRFRAME: AM.II.K.K8 - Derating factors in switch selection.
- AIRFRAME: AM.II.K.K9 - Aircraft wiring shielding.
- AIRFRAME: AM.II.K.K10 - Aircraft lightning protection.
- AIRFRAME: AM.II.K.K11 - Instrument or instrument panel removal and installation.
- AIRFRAME: AM.II.K.K12 - Aircraft lighting systems.
- AIRFRAME: AM.II.K.K13 - Electrical system troubleshooting.
- AIRFRAME: AM.II.K.K14 - Soldering preparation, types of solder, and flux usage.

- AIRFRAME: AM.II.K.K15 - Aircraft electrical connectors, splices, terminals, and switches.
- AIRFRAME: AM.II.K.K16 - Electrical system measurement, adjustment, and testing.
- AIRFRAME: AM.II.K.K17 - Aircraft battery troubleshooting and maintenance.

### **AIRFRAME KNOWLEDGE ELEMENTS (Subject L: Ice and Rain Control Systems):**

- AIRFRAME: AM.II.L.K1 - Aircraft icing causes/effects.
- AIRFRAME: AM.II.L.K2 - Ice detection systems.
- AIRFRAME: AM.II.L.K3 - Aircraft and powerplant anti-ice systems and components.
- AIRFRAME: AM.II.L.K4 - De-ice systems and components.
- AIRFRAME: AM.II.L.K5 - Wiper blade, chemical, and pneumatic bleed air rain control systems.
- AIRFRAME: AM.II.L.K6 - Anti-icing and de-icing system maintenance.
- AIRFRAME: AM.II.L.K7 - Environmental conditions that degrade vision.

### **Critical Skills to Practice:**

- AIRFRAME: AM.II.J.S1 - Inspect, check, troubleshoot, or repair a fuel system.
- AIRFRAME: AM.II.J.S2 - Inspect a metal, bladder, or integral fuel tank.
- AIRFRAME: AM.II.J.S3 - Troubleshoot and repair aircraft fuel system.
- AIRFRAME: AM.II.J.S4 - Inspect a fuel selector valve.
- AIRFRAME: AM.II.J.S5 - Inspect and check manually-operated fuel valves for proper operation and leaks.
- AIRFRAME: AM.II.J.S6 - Troubleshoot a fuel valve problem.
- AIRFRAME: AM.II.J.S7 - Drain fuel system sump(s).
- AIRFRAME: AM.II.J.S8 - Service a fuel system strainer.
- AIRFRAME: AM.II.J.S9 - Inspect a fuel quantity indicating system.
- AIRFRAME: AM.II.J.S10 - Locate fuel system operating instructions.
- AIRFRAME: AM.II.J.S11 - Locate fuel system inspection procedures.
- AIRFRAME: AM.II.J.S12 - Locate fuel system crossfeed procedures.
- AIRFRAME: AM.II.J.S13 - Locate fuel system required placards.
- AIRFRAME: AM.II.J.S14 - Locate fuel system defueling procedures.
- AIRFRAME: AM.II.J.S15 - Troubleshoot fuel pressure warning system.
- AIRFRAME: AM.II.J.S16 - Locate troubleshooting procedures for fuel temperature systems.
- AIRFRAME: AM.II.J.S17 - Remove and install a fuel quantity transmitter.
- AIRFRAME: AM.II.J.S18 - Troubleshoot fuel quantity indicating system.

- AIRFRAME: AM.II.K.S1 - Inspect aircraft wiring to verify installation and routing.
- AIRFRAME: AM.II.K.S2 - Perform wire terminating and splicing.
- AIRFRAME: AM.II.K.S3 - Assemble an aircraft electrical connector.
- AIRFRAME: AM.II.K.S4 - Use a wiring circuit diagram to identify components.
- AIRFRAME: AM.II.K.S5 - Solder aircraft wiring.
- AIRFRAME: AM.II.K.S6 - Troubleshoot an airframe electrical circuit.
- AIRFRAME: AM.II.K.S7 - Install airframe electrical wiring, switches, or protective devices.
- AIRFRAME: AM.II.K.S8 - Secure wire bundles.
- AIRFRAME: AM.II.K.S9 - Determine an electrical load in a given aircraft system.
- AIRFRAME: AM.II.K.S10 - Install bonding jumpers.
- AIRFRAME: AM.II.K.S11 - Check output voltage of a DC generator.
- AIRFRAME: AM.II.K.S12 - Check the resistance of an electrical system component.
- AIRFRAME: AM.II.K.S13 - Inspect generator brush serviceability and brush spring tension.
- AIRFRAME: AM.II.K.S14 - Inspect and check anti-collision, position, and landing lights for proper operation.
- AIRFRAME: AM.II.K.S15 - Inspect components in an electrical system.
- AIRFRAME: AM.II.K.S16 - Troubleshoot a DC electrical system supplied by an AC electrical system.
- AIRFRAME: AM.II.K.S17 - Identify components in an electrical schematic where AC is rectified to a DC voltage.
- AIRFRAME: AM.II.K.S18 - Perform a continuity test to verify the condition of a conductor.
- AIRFRAME: AM.II.K.S19 - Perform a test on a conductor for a short to ground.
- AIRFRAME: AM.II.K.S20 - Perform a test on a conductor for a short to other conductors.
- AIRFRAME: AM.II.L.S1 - Inspect and operationally check pitot-static anti-ice system.
- AIRFRAME: AM.II.L.S2 - Inspect and operationally check deicer boot.
- AIRFRAME: AM.II.L.S3 - Clean a pneumatic deicer boot.
- AIRFRAME: AM.II.L.S4 - Troubleshoot an electrically-heated pitot system.
- AIRFRAME: AM.II.L.S5 - Inspect thermal anti-ice systems.
- AIRFRAME: AM.II.L.S6 - Inspect and operationally check an electrically-heated windshield.
- AIRFRAME: AM.II.L.S7 - Locate and explain the procedures for inspecting an electrically-operated windshield wiper system.

- AIRFRAME: AM.II.L.S8 - Locate and explain the procedures for replacing blades on a windshield wiper system.
- AIRFRAME: AM.II.L.S9 - Locate and explain the procedures for inspecting a pneumatic rain removal system.

### **Risk Management Areas:**

- AIRFRAME: AM.II.J.R1 - Fuel system maintenance.
- AIRFRAME: AM.II.J.R2 - Fuel system contamination.
- AIRFRAME: AM.II.J.R3 - Fuel spills.
- AIRFRAME: AM.II.J.R4 - Fuel system maintenance requiring fuel tank entry.
- AIRFRAME: AM.II.J.R5 - Defueling aircraft.
- AIRFRAME: AM.II.K.R1 - Testing/troubleshooting electrical systems or components.
- AIRFRAME: AM.II.K.R2 - Connecting or disconnecting external power.
- AIRFRAME: AM.II.K.R3 - Maintenance on energized circuits/systems.
- AIRFRAME: AM.II.K.R4 - Maintenance in areas containing aircraft wiring.
- AIRFRAME: AM.II.K.R5 - Routing and securing wires and wire bundles.
- AIRFRAME: AM.II.K.R6 - Selecting the size of wire in an electrical circuit.
- AIRFRAME: AM.II.K.R7 - Selection or installation of wire terminals.
- AIRFRAME: AM.II.K.R8 - Effects of soldering.
- AIRFRAME: AM.II.K.R9 - Soldering practices.
- AIRFRAME: AM.II.L.R1 - System testing or maintenance.
- AIRFRAME: AM.II.L.R2 - Storage and handling of deicing fluids.
- AIRFRAME: AM.II.L.R3 - Selection and use of cleaning materials for heated windshields.

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## WEEK 8: Airframe (Fire Protection, Rotorcraft, Water/Waste) + Final Review

ACS Codes: AM.II.M, AM.II.N, AM.II.O | Focus: Fire detection/suppression, helicopter systems, cabin systems, comprehensive test prep

### AIRFRAME KNOWLEDGE ELEMENTS (Subject M: Airframe Fire Protection Systems):

- AIRFRAME: AM.II.M.K1 - Types of fires and aircraft fire zones.
- AIRFRAME: AM.II.M.K2 - Overheat and fire detection and warning systems.
- AIRFRAME: AM.II.M.K3 - Overheat and fire detection system maintenance and inspection.
- AIRFRAME: AM.II.M.K4 - Smoke and carbon monoxide detection systems.
- AIRFRAME: AM.II.M.K5 - Fire extinguishing agents.
- AIRFRAME: AM.II.M.K6 - Types of fire extinguishing systems.
- AIRFRAME: AM.II.M.K7 - Fire extinguishing system maintenance and inspection requirements.

### AIRFRAME KNOWLEDGE ELEMENTS (Subject N: Rotorcraft Fundamentals):

- AIRFRAME: AM.II.N.K1 - Rotorcraft aerodynamics.
- AIRFRAME: AM.II.N.K2 - Flight controls.
- AIRFRAME: AM.II.N.K3 - Transmissions.
- AIRFRAME: AM.II.N.K4 - Rigging requirements for rotary wing aircraft.
- AIRFRAME: AM.II.N.K5 - Design, type, and operation of rotor systems.
- AIRFRAME: AM.II.N.K6 - Helicopter skid shoe and tube inspection.
- AIRFRAME: AM.II.N.K7 - Rotor blade functions and construction.
- AIRFRAME: AM.II.N.K8 - Rotor vibrations, track, and balance.
- AIRFRAME: AM.II.N.K9 - Drive system vibrations and inspection.

### AIRFRAME KNOWLEDGE ELEMENTS (Subject O: Water and Waste Systems):

- AIRFRAME: AM.II.O.K1 - Potable water system components and operation.
- AIRFRAME: AM.II.O.K2 - Lavatory waste system components and operation.
- AIRFRAME: AM.II.O.K3 - Inspection and servicing requirements for water and waste systems.

### Critical Skills to Practice:

- AIRFRAME: AM.II.M.S1 - Troubleshoot an aircraft fire detection or extinguishing system.

- AIRFRAME: AM.II.M.S2 - Determine proper container pressure for an installed fire extinguisher system.
- AIRFRAME: AM.II.M.S3 - Identify maintenance procedures for fire detection and extinguishing system(s) and system component(s).
- AIRFRAME: AM.II.M.S4 - Inspect a smoke and toxic gas detection system.
- AIRFRAME: AM.II.M.S5 - Inspect a carbon monoxide detector.
- AIRFRAME: AM.II.M.S6 - Locate and explain the procedures for checking a smoke detection system.
- AIRFRAME: AM.II.M.S7 - Locate and explain the procedures for inspecting an overheat detection system.
- AIRFRAME: AM.II.M.S8 - Inspect fire protection system cylinders and check for hydrostatic test date.
- AIRFRAME: AM.II.M.S9 - Inspect fire detection/protection system.
- AIRFRAME: AM.II.M.S10 - Perform operational check of fire detection/protection system.
- AIRFRAME: AM.II.M.S11 - Inspect fire extinguishing agent bottle discharge cartridge.
- AIRFRAME: AM.II.M.S12 - Inspect a continuous-loop type fire detection system.

- AIRFRAME: AM.II.N.S1 - Locate components of a helicopter rotor system.
- AIRFRAME: AM.II.N.S2 - Locate helicopter rotor blade track and balance procedures.
- AIRFRAME: AM.II.N.S3 - Locate and explain procedures needed to rig helicopter controls.
- AIRFRAME: AM.II.N.S4 - Locate and explain procedures to track and balance a rotor system.
- AIRFRAME: AM.II.O.S1 - Locate and explain the procedures for servicing a lavatory waste system.
- AIRFRAME: AM.II.O.S2 - Locate and explain the procedures for servicing a potable water system.

### **Risk Management Areas:**

- AIRFRAME: AM.II.M.R1 - Maintenance on circuits associated with fire bottle squibs.
- AIRFRAME: AM.II.M.R2 - Use of PPEs when working on or testing fire extinguishing systems.
- AIRFRAME: AM.II.M.R3 - Fire extinguishing agents.
- AIRFRAME: AM.II.N.R1 - Working around helicopter blades during ground operations.
- AIRFRAME: AM.II.N.R2 - Ground-handling procedures.
- AIRFRAME: AM.II.N.R3 - Ground operations and functional tests.
- AIRFRAME: AM.II.N.R4 - Maintenance and inspection of rotorcraft systems and components.
- AIRFRAME: AM.II.O.R1 - Servicing lavatory waste systems, including use of safety equipment.

### **FINAL WEEK REVIEW TASKS:**

- Review ALL 12 General subject areas (A through L)
- Review ALL 15 Airframe subject areas (A through O)
- ORAL: Practice explaining concepts without references
- PRACTICAL: Practice finding information quickly in manuals when allowed
- Complete practice practical projects from previous weeks
- Review your Airframe written test report - study missed ACS codes
- Organize all reference materials with tabs
- Practice sheet metal repairs
- Practice fabric and composite work
- Practice flight control rigging and inspection
- Practice landing gear and brake system work

- Review hydraulic/pneumatic system troubleshooting
- Review all system inspections
- Take practice oral exams with coworkers, mentors, or supervisors
- Ensure you have all required tools ready
- Complete Final Preparation Checklist

## Test Day Information

On your test day, you will take TWO separate O&P tests: General AND Airframe. Both tests are administered on the same day. The table below shows the combined test structure:

Test Component	Details
Test Format	TWO SEPARATE TESTS on same day: <ul style="list-style-type: none"> <li>• General O&amp;P (Section I)</li> <li>• Airframe O&amp;P (Section II)</li> </ul> Both oral and practical portions for each rating
Oral Test	Questions on topics from your AKTR (missed written test questions) PLUS minimum additional questions randomly selected by MTG. If you scored 100% on written test, only minimum questions are asked. Covers all 12 General and 15 Airframe subject areas.
Practical Test	Practical projects selected by the MTG, plus practical questioning specific to the projects being tested. You must demonstrate satisfactory skill to the approval for return to service standard.
References	ORAL: NO reference materials allowed PRACTICAL: YES - you may use maintenance manuals, FAA handbooks, and approved data to answer questions during practical projects
Passing Score	Minimum passing grade is 70 percent for each test (14 CFR 65.17). Satisfactory demonstration of each skill tested is required.
What to Bring	<ul style="list-style-type: none"> <li>• Two FAA Forms 8610-2 with original signatures</li> <li>• Passing written test reports (AKTR) for General and Airframe</li> <li>• Government-issued photo ID with signature</li> <li>• Proof of eligibility (graduation certificate or experience documentation)</li> </ul>
Prerequisites	<ul style="list-style-type: none"> <li>• Passed General and Airframe written tests (valid 24 months)</li> <li>• Meet experience requirements (14 CFR 65.77) or AMTS graduation</li> <li>• Completed pretest interview with DME</li> <li>• Agreed upon testing fee with DME</li> </ul>

**About the Mechanic Test Generator (MTG):** Your examiner will use the FAA's online MTG system to generate TWO separate tests for you: one for General and one for Airframe. Each test is generated independently, selecting random questions and projects from the respective ACS sections, plus additional oral questions based on the specific ACS codes you missed on your General and Airframe written tests. This means both tests will be unique to you, and you cannot predict which specific elements will be tested - you must be prepared for everything in all 12 General subject areas AND all 15 Airframe subject areas.

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## Final Preparation Checklist (Complete Before Test)

Use this final checklist in the week before your test to ensure you're fully prepared. Check off each item as you complete it.

*NOTE: This checklist is provided as supplementary guidance based on common test preparation best practices. It is not directly sourced from FAA documents. Always refer to the FAA-G-ACS-1 Companion Guide and your examiner's specific instructions for official requirements.*

### KNOWLEDGE PREPARATION

- Reviewed ALL missed ACS codes from BOTH General AND Airframe written tests
- ORAL: Can explain concepts and procedures without references
- PRACTICAL: Know where to find specifications in manuals when allowed
- Studied all 12 General ACS subject areas (Section I) thoroughly
- Studied all 15 Airframe ACS subject areas (Section II) thoroughly
- Comfortable with Knowledge, Risk Management, AND Skill elements for BOTH tests
- Read FAA-G-ACS-1 Companion Guide completely
- Reviewed FAA-H-8083-30B General Handbook
- Reviewed FAA-H-8083-31B Airframe Handbook

### PRACTICAL SKILLS PREPARATION

- Practiced typical practical projects multiple times
- Can perform sheet metal repairs safely
- Comfortable with fabric covering and doping procedures
- Can perform rivet installations and removals
- Know how to inspect structural components for damage
- Familiar with all necessary tools and their use
- Can perform flight control rigging and adjustment
- Comfortable with landing gear and brake system procedures
- Know hydraulic and pneumatic system servicing
- Can perform electrical system troubleshooting

## **DOCUMENTATION & LOGISTICS**

- Have passing General written test report
- Have passing Airframe written test report
- FAA Form 8610-2 completed and signed
- Government photo ID ready
- Proof of experience/training ready
- Know test location and arrival time
- Have all required tools (as specified by DME)
- Have all reference materials organized and tabbed
- Confirmed pretest interview completed with DME
- Know the specific aircraft that will be used for testing

## **MINDSET & WELLNESS**

- Got adequate sleep night before test
- Ate proper meal before test
- Feeling confident and prepared
- Reviewed test-taking strategies
- Know that it's okay to ask examiner to clarify questions
- Prepared for a full day of testing (6-8 hours)
- Have water and snacks for breaks

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## Key Concept: Oral vs. Practical - What You Must Know

**CRITICAL UNDERSTANDING:** The oral and practical portions have different requirements:

**ORAL TEST (No References):** You must KNOW the information. Be prepared to explain concepts, identify components, describe procedures, and discuss specifications without any reference materials.

**PRACTICAL TEST (References Allowed):** You must know WHERE to find information in maintenance manuals, handbooks, and approved data, and HOW to use it correctly. You are NOT expected to have all numerical values memorized.

### TIPS FOR TEST DAY SUCCESS:

**Listen Carefully:** Make sure you understand each question before answering. It's okay to ask the examiner to repeat or clarify a question.

**Think Before You Act:** On practical projects, plan your approach before starting. Rushing leads to mistakes that could fail you.

**Verbalize Your Process:** During practical projects, explain what you're doing and why. This shows the examiner your knowledge and thought process.

**Use References Properly:** During the practical portion, demonstrate that you know how to find information in manuals quickly and efficiently.

**Safety First:** Always demonstrate proper safety practices. This includes PPE, tool handling, and hazard awareness.

**Stay Calm:** If you make a mistake, acknowledge it and explain how you would correct it. Examiners appreciate honesty and professionalism.

## **COMMON AREAS WHERE APPLICANTS STRUGGLE:**

**Weight and Balance Calculations:** Practice these until you can do them quickly and accurately. Know the terminology.

**Regulations Knowledge:** Understand the difference between major/minor repairs, approved vs acceptable data, and who can approve what.

**Sheet Metal Repair:** Know rivet selection, edge distance, pitch, and when repairs require engineering approval.

**Flight Control Rigging:** Understand cable tension, travel limits, and the importance of proper rigging.

**Electrical Troubleshooting:** Be comfortable using multimeters and reading electrical schematics.

**Human Factors:** Don't overlook this section - it's tested on both written and oral exams.

Remember: The O&P exam tests your ability to work as a professional aviation maintenance technician. The DME wants to see that you can safely and competently perform maintenance, that you understand the risks involved, and that you know where to find the right information when you need it. Be confident, methodical, and don't rush. If you've studied the 15 ACS subject areas thoroughly and practiced the practical skills, you're ready to succeed.

**Good luck on your examination!**

*This study guide is provided as a supplementary resource and does not replace official FAA publications or approved training materials. Always refer to current FAA regulations, airman certification standards, and manufacturer documentation for authoritative information.*