Powerplant Oral & Practical Exam Study Guide & Checklist

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This study guide is specifically designed to help you prepare for the FAA Powerplant Oral and Practical examination. This guide focuses on the 13 Powerplant subject areas (FAA-S-ACS-1 Section III). 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***

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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). This study guide focuses on Section III (Powerplant).

Section III - Powerplant: Contains 13 subject areas (labeled A through M) covering powerplant-specific systems. 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 13 Powerplant Subject Areas (FAA-S-ACS-1 Section III)

A. Reciprocating Engines

B. Turbine Engines

C. Engine Inspection

D. Engine Instrument Systems

E. Engine Fire Protection Systems

F. Engine Electrical Systems

G. Engine Lubrication Systems

H. Ignition and Starting Systems

I. Engine Fuel and Fuel Metering Systems

J. Reciprocating Engine Induction and Cooling Systems

K. Turbine Engine Air Systems

L. Engine Exhaust and Reverser Systems

M. Propellers

Study Tip: Each Powerplant subject area lists specific codes (e.g., AM.III.A.K1 for Reciprocating Engines). 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 13 Powerplant subject areas.

Study Materials & Resources

The following resources are essential for preparing for your Powerplant 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-8083-32B (Powerplant Handbook)**

☐ **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-8083-32B Powerplant Handbook - Essential reference for all Powerplant subjects**

* Covers reciprocating engines, turbine engines, propellers, and all powerplant systems
* Free download from faa.gov

☐ **ASA Oral & Practical Exam Guide (5th Edition) - Powerplant section**

* Comprehensive coverage of Powerplant oral and practical test topics
* Organized by ACS subject areas with typical examiner questions
* Updated to match current FAA-S-ACS-1 standards
* Available at Amazon or ASA

☐ **Aircraft/Engine manufacturer service manuals FOR THE SPECIFIC EQUIPMENT YOUR DME USES**

* Contact your DME early to find out what aircraft and engines they use
* Get manuals for those specific engines (e.g., Lycoming, Continental, PT6)
* 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

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 Report for Powerplant
    * 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 (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 13 Powerplant subject areas. Each week focuses on related subjects from both sections, ensuring thorough preparation for your Powerplant O&P test.

Week	Powerplant Subjects	Focus Areas
1	A. Reciprocating Engines	Engine types, theory of operation, horizontally-opposed/radial construction, cylinder inspection, ground ops
2	B. Turbine Engines	Turbine theory, engine types, construction, components, bleed air, FOD, performance monitoring
3	C. Engine Inspection D. Engine Instrument Systems	14 CFR 43/91, compression tests, life-limited parts, ADs, TCDS, EGT, CHT, EPR, tachometers, FADEC
4	E. Engine Fire Protection F. Engine Electrical Systems	Fire detection/extinguishing, generators, alternators, starters, voltage regulators, CSD/IDG
5	G. Engine Lubrication H. Ignition and Starting	Oil types/grades, wet/dry sump, chip detectors, magnetos, spark plugs, timing, turbine igniters
6	I. Fuel and Fuel Metering J. Induction and Cooling	Carburetors, fuel injection, turbochargers, superchargers, induction icing, engine cooling
7	K. Turbine Engine Air Systems L. Exhaust and Reverser	Bleed air, turbine cooling, exhaust inspection, thrust reversers, noise suppression
8	M. Propellers Final Review	Propeller theory, governors, pitch control, balancing, comprehensive test preparation

WEEK 1: Reciprocating Engines

ACS Codes: AM.III.A | Focus: Engine types, theory of operation, horizontally-opposed/radial construction, cylinder inspection, ground operations

POWERPLANT KNOWLEDGE ELEMENTS (Subject A: Reciprocating Engines):

- ☐ AM.III.A.K1 - Types of reciprocating engines
- ☐ AM.III.A.K2 - Reciprocating engine operating principles/theory of operation
- ☐ AM.III.A.K3 - Internal combustion engine operating principles/theory of operation
- ☐ AM.III.A.K4 - Horizontally-opposed engine construction and internal components
- ☐ AM.III.A.K5 - Radial engine construction and internal components
- ☐ AM.III.A.K6 - Storage and preservation
- ☐ AM.III.A.K7 - Reciprocating engine performance (e.g., PLANK, SFC)
- ☐ AM.III.A.K8 - Reciprocating engine maintenance and inspection
- ☐ AM.III.A.K9 - Reciprocating engine ground operations
- ☐ AM.III.A.K10 - Diesel engine operating principles/theory of operation

POWERPLANT SKILL ELEMENTS (Subject A: Reciprocating Engines):

- ☐ AM.III.A.S1 - Perform a cylinder assembly inspection
- ☐ AM.III.A.S2 - Operate and troubleshoot a reciprocating engine
- ☐ AM.III.A.S3 - Install piston and knuckle/wrist pin(s)
- ☐ AM.III.A.S4 - Identify the parts of a cylinder
- ☐ AM.III.A.S5 - Identify the parts of a crankshaft
- ☐ AM.III.A.S6 - Identify and inspect various types of bearings
- ☐ AM.III.A.S7 - Inspect and rig cable and push-pull engine controls
- ☐ AM.III.A.S8 - Locate top dead-center position of number one cylinder
- ☐ AM.III.A.S9 - Install a cylinder on a horizontally-opposed engine

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject A: Reciprocating Engines):

- ☐ AM.III.A.R1 - Maintenance that requires moving the propeller
- ☐ AM.III.A.R2 - Preparation for and ground operation of a reciprocating engine
- ☐ AM.III.A.R3 - Actions in the event of a reciprocating engine fire
- ☐ AM.III.A.R4 - Use of other than manufacturer's procedures during maintenance

WEEK 2: Turbine Engines

ACS Codes: AM.III.B | Focus: Turbine engine types, theory of operation, construction, components, bleed air, APU, FOD, performance monitoring

POWERPLANT KNOWLEDGE ELEMENTS (Subject B: Turbine Engines):

- ☐ AM.III.B.K1 - Turbine engine operating principles/theory of operation
- ☐ AM.III.B.K2 - Types of turbine engines
- ☐ AM.III.B.K3 - Turbine engine construction and internal components
- ☐ AM.III.B.K4 - Turbine engine performance and monitoring
- ☐ AM.III.B.K5 - Turbine engine troubleshooting, maintenance, and inspection procedures
- ☐ AM.III.B.K6 - Procedures required after the installation of a turbine engine
- ☐ AM.III.B.K7 - Causes for turbine engine performance loss
- ☐ AM.III.B.K8 - Bleed air systems
- ☐ AM.III.B.K9 - Storage and preservation
- ☐ AM.III.B.K10 - Auxiliary power unit(s)
- ☐ AM.III.B.K11 - Turbine engine adjustment and testing

POWERPLANT SKILL ELEMENTS (Subject B: Turbine Engines):

- ☐ AM.III.B.S1 - Identify different turbine compressors
- ☐ AM.III.B.S2 - Identify different types of turbine engine blades
- ☐ AM.III.B.S3 - Identify components of turbine engines
- ☐ AM.III.B.S4 - Map airflow direction and pressure changes in turbine engines
- ☐ AM.III.B.S5 - Remove and install a fuel nozzle in a turbine engine
- ☐ AM.III.B.S6 - Inspect a combustion liner
- ☐ AM.III.B.S7 - Locate the procedures for the adjustment of a fuel control unit
- ☐ AM.III.B.S8 - Perform turbine engine inlet guide vane and compressor blade inspection
- ☐ AM.III.B.S9 - Locate the installation or removal procedures for a turbine engine
- ☐ AM.III.B.S10 - Locate and explain the procedure for trimming a turbine engine
- ☐ AM.III.B.S11 - Identify damaged turbine engine blades
- ☐ AM.III.B.S12 - Identify causes for turbine engine performance loss
- ☐ AM.III.B.S13 - Inspect the first two stages of a turbine fan or compressor for foreign object damage

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject B: Turbine Engines):

- ☐ AM.III.B.R1 - Operation of a turbine engine
- ☐ AM.III.B.R2 - Performing maintenance on a turbine engine
- ☐ AM.III.B.R3 - Actions in the event of a turbine engine fire
- ☐ AM.III.B.R4 - Foreign object damage

WEEK 3: Engine Inspection & Instrument Systems

ACS Codes: AM.III.C, AM.III.D | Focus: 14 CFR 43/91 requirements, compression tests, life-limited parts, ADs, TCDS, EGT, CHT, EPR, fuel flow, oil pressure/temp, tachometers, EICAS, FADEC

POWERPLANT KNOWLEDGE ELEMENTS (Subject C: Engine Inspection):

- ☐ AM.III.C.K1 - Inspection requirements under 14 CFR part 43 and 14 CFR part 91
- ☐ AM.III.C.K2 - Identification of life-limited parts and their replacement interval
- ☐ AM.III.C.K3 - Special inspections
- ☐ AM.III.C.K4 - Use of FAA-approved data
- ☐ AM.III.C.K5 - Compliance with service letters, service bulletins, instructions for continued airworthiness, ADs, or TCDSs
- ☐ AM.III.C.K6 - Maintenance recordkeeping requirements under 14 CFR part 43
- ☐ AM.III.C.K7 - Engine component inspection, checking, and servicing
- ☐ AM.III.C.K8 - Engine mounts, mounting hardware, and the inspection and checking of each

POWERPLANT KNOWLEDGE ELEMENTS (Subject D: Engine Instrument Systems):

- ☐ AM.III.D.K1 - Fuel flow
- ☐ AM.III.D.K2 - Temperature (e.g., exhaust gas, oil, cylinder head, turbine inlet)
- ☐ AM.III.D.K3 - Engine speed indicating systems
- ☐ AM.III.D.K4 - Pressure (e.g., air, fuel, manifold, oil)
- ☐ AM.III.D.K5 - Annunciator indicating systems (e.g., warning, caution, and advisory lights)
- ☐ AM.III.D.K6 - Torquemeters
- ☐ AM.III.D.K7 - Engine pressure ratio (EPR)
- ☐ AM.III.D.K8 - Engine indicating and crew alerting system (EICAS)
- ☐ AM.III.D.K9 - Digital engine control module (e.g., full authority digital engine controls (FADEC))
- ☐ AM.III.D.K10 - Electronic centralized aircraft monitor (ECAM)
- ☐ AM.III.D.K11 - Engine instrument range markings and instrument conditions

POWERPLANT SKILL ELEMENTS (Subject C: Engine Inspection):

- ☐ AM.III.C.S1 - Perform a compression check on a cylinder
- ☐ AM.III.C.S2 - Evaluate powerplant for compliance with FAA-approved or manufacturer data
- ☐ AM.III.C.S3 - Perform a powerplant records inspection
- ☐ AM.III.C.S4 - Inspect for compliance with applicable ADs
- ☐ AM.III.C.S5 - Determine engine installation eligibility
- ☐ AM.III.C.S6 - Determine compliance with engine specifications, TCDS, or engine listings
- ☐ AM.III.C.S7 - Perform a portion of a required inspection on an engine
- ☐ AM.III.C.S8 - Check engine controls for proper operation and adjustment
- ☐ AM.III.C.S9 - Inspect an engine for leaks after performing maintenance
- ☐ AM.III.C.S10 - Inspect an aircraft engine accessory for serviceability
- ☐ AM.III.C.S11 - Inspect engine records for time or cycles on life-limited parts
- ☐ AM.III.C.S12 - Perform an engine start and inspect engine operational parameters
- ☐ AM.III.C.S13 - Perform a portion of a 100-hour inspection on an engine in accordance with part 43
- ☐ AM.III.C.S14 - Inspect an engine mount to determine serviceability

POWERPLANT SKILL ELEMENTS (Subject D: Engine Instrument Systems):

- ☐ AM.III.D.S1 - Troubleshoot an engine oil temperature/pressure instrument system
- ☐ AM.III.D.S2 - Troubleshoot a low fuel pressure indicating system
- ☐ AM.III.D.S3 - Remove, inspect, and install a fuel-flow transmitter
- ☐ AM.III.D.S4 - Remove, inspect, and install fuel-flow gauge
- ☐ AM.III.D.S5 - Identify components of an electric tachometer system
- ☐ AM.III.D.S6 - Check fuel-flow transmitter power supply
- ☐ AM.III.D.S7 - Inspect tachometer markings for accuracy
- ☐ AM.III.D.S8 - Perform resistance measurements of thermocouple indication system
- ☐ AM.III.D.S9 - Remove, inspect, and install turbine engine exhaust gas temperature (EGT) component
- ☐ AM.III.D.S10 - Locate procedures for troubleshooting a turbine EPR system
- ☐ AM.III.D.S11 - Troubleshoot a tachometer system
- ☐ AM.III.D.S12 - Replace a cylinder head temperature thermocouple

- ☐ AM.III.D.S13 - Inspect EGT probes
- ☐ AM.III.D.S14 - Locate and inspect engine low fuel pressure warning system components
- ☐ AM.III.D.S15 - Check aircraft engine manifold pressure gauge for proper operation
- ☐ AM.III.D.S16 - Inspect a manifold pressure system
- ☐ AM.III.D.S17 - Repair a low oil pressure warning system

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject C: Engine Inspection):

- ☐ AM.III.C.R1 - A compression test on a reciprocating engine
- ☐ AM.III.C.R2 - Maintenance on an operating reciprocating engine
- ☐ AM.III.C.R3 - Maintenance on an operating turbine engine

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject D: Engine Instrument Systems):

- ☐ AM.III.D.R1 - Maintenance damage to the instrument or indicating system
- ☐ AM.III.D.R2 - Engine instrument calibration or instrument error

WEEK 4: Fire Protection & Engine Electrical Systems

ACS Codes: AM.III.E, AM.III.F | Focus: Fire detection/extinguishing, generators, alternators, starters, voltage regulators, CSD/IDG, wiring

POWERPLANT KNOWLEDGE ELEMENTS (Subject E: Engine Fire Protection Systems):

- ☐ AM.III.E.K1 - Types of fires and engine fire zones
- ☐ AM.III.E.K2 - Fire detection warning system operation
- ☐ AM.III.E.K3 - Fire detection system maintenance and inspection requirements
- ☐ AM.III.E.K4 - Fire extinguishing agents, types of systems, and operation
- ☐ AM.III.E.K5 - Fire extinguishing system maintenance and inspection

POWERPLANT KNOWLEDGE ELEMENTS (Subject F: Engine Electrical Systems):

- ☐ AM.III.F.K1 - Generators
- ☐ AM.III.F.K2 - Alternators
- ☐ AM.III.F.K3 - Starter generators
- ☐ AM.III.F.K4 - Voltage regulators and overvoltage and overcurrent protection
- ☐ AM.III.F.K5 - DC generation systems
- ☐ AM.III.F.K6 - AC generation systems
- ☐ AM.III.F.K7 - The procedure for locating the correct electrical cable/wire size needed to fabricate a cable/wire
- ☐ AM.III.F.K8 - The purpose and procedure for paralleling a dual-generator electrical system
- ☐ AM.III.F.K9 - CSD and IDG systems and components
- ☐ AM.III.F.K10 - Engine electrical wiring, switches, and protective devices

POWERPLANT SKILL ELEMENTS (Subject E: Engine Fire Protection Systems):

- ☐ AM.III.E.S1 - Troubleshoot and repair an engine fire detection system
- ☐ AM.III.E.S2 - Identify fire detection sensing units
- ☐ AM.III.E.S3 - Inspect fire detection continuous loop system
- ☐ AM.III.E.S4 - Inspect fire detection thermal switch or thermocouple system
- ☐ AM.III.E.S5 - Locate troubleshooting procedures for a fire detection system
- ☐ AM.III.E.S6 - Inspect engine fire extinguisher system blowout plugs
- ☐ AM.III.E.S7 - Inspect a turbine engine fire extinguisher container
- ☐ AM.III.E.S8 - Inspect fire extinguisher discharge circuit
- ☐ AM.III.E.S9 - Troubleshoot and repair a fire extinguishing system
- ☐ AM.III.E.S10 - Inspect a fire extinguisher container discharge cartridge (squib)
- ☐ AM.III.E.S11 - Inspect fire extinguisher container and determine hydrostatic test requirements
- ☐ AM.III.E.S12 - Inspect flame detectors for operation
- ☐ AM.III.E.S13 - Check operation of fire warning press-to-test and troubleshoot faults
- ☐ AM.III.E.S14 - Identify continuous-loop fire detection system components

POWERPLANT SKILL ELEMENTS (Subject F: Engine Electrical Systems):

- ☐ AM.III.F.S1 - Inspect engine electrical wiring, switches, and protective devices
- ☐ AM.III.F.S2 - Determine suitability of a replacement component by part number
- ☐ AM.III.F.S3 - Replace an engine-driven generator or alternator
- ☐ AM.III.F.S4 - Inspect an engine-driven generator or alternator in accordance with manufacturer's instructions
- ☐ AM.III.F.S5 - Troubleshoot an aircraft electrical generating system
- ☐ AM.III.F.S6 - Remove and install an engine direct-drive electric starter
- ☐ AM.III.F.S7 - Troubleshoot a direct-drive electric starter system
- ☐ AM.III.F.S8 - Inspect an electrical system cable
- ☐ AM.III.F.S9 - Determine wire size for engine electrical system
- ☐ AM.III.F.S10 - Repair a broken engine electrical system wire
- ☐ AM.III.F.S11 - Replace a wire bundle lacing

- ☐ AM.III.F.S12 - Troubleshoot an electrical system using a schematic or wiring diagram
- ☐ AM.III.F.S13 - Fabricate a bonding jumper
- ☐ AM.III.F.S14 - Inspect a turbine engine starter generator
- ☐ AM.III.F.S15 - Inspect engine electrical connectors

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject E: Engine Fire Protection Systems):

- ☐ AM.III.E.R1 - Container discharge cartridges
- ☐ AM.III.E.R2 - Extinguishing agents
- ☐ AM.III.E.R3 - Maintenance on circuits associated with electrically-activated container discharge cartridges (squibs)

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject F: Engine Electrical Systems):

- ☐ AM.III.F.R1 - Polarity when performing electrical system maintenance
- ☐ AM.III.F.R2 - Actions in response to a warning or caution annunciator light
- ☐ AM.III.F.R3 - Maintenance on energized aircraft circuits/systems
- ☐ AM.III.F.R4 - Routing and security of wiring near flammable fluid lines

WEEK 5: Lubrication & Ignition/Starting Systems

ACS Codes: AM.III.G, AM.III.H | Focus: Oil types/grades, wet/dry sump, chip detectors, oil analysis, magnetos, spark plugs, ignition harness, FADEC, turbine igniters

POWERPLANT KNOWLEDGE ELEMENTS (Subject G: Engine Lubrication Systems):

- ☐ AM.III.G.K1 - Types, grades, and uses of engine oil
- ☐ AM.III.G.K2 - Lubrication system operation and components
- ☐ AM.III.G.K3 - Wet-sump system
- ☐ AM.III.G.K4 - Dry-sump system
- ☐ AM.III.G.K5 - Chip detectors
- ☐ AM.III.G.K6 - Lubrication system maintenance, inspection, servicing, and analysis
- ☐ AM.III.G.K7 - Excessive aircraft engine oil consumption

POWERPLANT KNOWLEDGE ELEMENTS (Subject H: Ignition and Starting Systems):

- ☐ AM.III.H.K1 - Ignition system theory
- ☐ AM.III.H.K2 - Spark plug theory
- ☐ AM.III.H.K3 - Shower of sparks and impulse coupling
- ☐ AM.III.H.K4 - Three electrical circuits of a magneto system
- ☐ AM.III.H.K5 - Solid-state ignition systems
- ☐ AM.III.H.K6 - Digital engine control module (e.g., FADEC)
- ☐ AM.III.H.K7 - Engine starters
- ☐ AM.III.H.K8 - Magneto system components and operation
- ☐ AM.III.H.K9 - Turbine engine ignition systems

POWERPLANT SKILL ELEMENTS (Subject G: Engine Lubrication Systems):

- ☐ AM.III.G.S1 - Inspect an oil cooler or oil lines
- ☐ AM.III.G.S2 - Determine the correct type of oil for a specific engine
- ☐ AM.III.G.S3 - Identify turbine engine oil filter bypass indicator
- ☐ AM.III.G.S4 - Determine approved oils for different climatic temperatures
- ☐ AM.III.G.S5 - Locate procedures for obtaining oil samples
- ☐ AM.III.G.S6 - Inspect an oil filter or screen
- ☐ AM.III.G.S7 - Perform oil pressure adjustment
- ☐ AM.III.G.S8 - Identify oil system components
- ☐ AM.III.G.S9 - Replace an oil system component
- ☐ AM.III.G.S10 - Identify oil system flow
- ☐ AM.III.G.S11 - Troubleshoot an engine oil pressure malfunction
- ☐ AM.III.G.S12 - Troubleshoot an engine oil temperature system
- ☐ AM.III.G.S13 - Identify types of metal found in an oil filter
- ☐ AM.III.G.S14 - Remove and inspect an engine chip detector

POWERPLANT SKILL ELEMENTS (Subject H: Ignition and Starting Systems):

- ☐ AM.III.H.S1 - Set magneto internal timing
- ☐ AM.III.H.S2 - Time magneto to engine
- ☐ AM.III.H.S3 - Remove, clean, and install spark plug
- ☐ AM.III.H.S4 - Troubleshoot and repair an ignition system
- ☐ AM.III.H.S5 - Inspect an electrical starting system
- ☐ AM.III.H.S6 - Inspect magneto breaker points
- ☐ AM.III.H.S7 - Inspect an ignition harness
- ☐ AM.III.H.S8 - Inspect a magneto impulse coupling
- ☐ AM.III.H.S9 - Troubleshoot an electrical starting system
- ☐ AM.III.H.S10 - Troubleshoot ignition switch circuit
- ☐ AM.III.H.S11 - Inspect and check gap of spark plugs
- ☐ AM.III.H.S12 - Identify the correct spark plugs used for replacement installation

- ☐ AM.III.H.S13 - Troubleshoot a turbine or reciprocating engine ignition system
- ☐ AM.III.H.S14 - Identify the correct igniter plug and replace turbine engine igniter plugs
- ☐ AM.III.H.S15 - Troubleshoot turbine engine igniters
- ☐ AM.III.H.S16 - Inspect turbine engine ignition system
- ☐ AM.III.H.S17 - Inspect igniters

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject G: Engine Lubrication Systems):

- ☐ AM.III.G.R1 - Use or mixing of engine oils
- ☐ AM.III.G.R2 - Following other than manufacturer's recommendations regarding the use of engine lubricants
- ☐ AM.III.G.R3 - Handling, storage, and disposal of used lubricating oil

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject H: Ignition and Starting Systems):

- ☐ AM.III.H.R1 - Advanced and retarded ignition timing (piston engine)
- ☐ AM.III.H.R2 - Maintenance on engines with capacitor discharge ignition systems
- ☐ AM.III.H.R3 - Working around reciprocating engines with an ungrounded magneto

WEEK 6: Fuel/Metering & Induction/Cooling Systems

ACS Codes: AM.III.I, AM.III.J | Focus: Carburetors, fuel injection, FADEC, fuel nozzles, turbochargers, superchargers, engine cooling, baffles

POWERPLANT KNOWLEDGE ELEMENTS (Subject I: Engine Fuel and Fuel Metering Systems):

- ☐ AM.III.I.K1 - Fuel/air ratio and fuel metering, and carburetor theory and operation
- ☐ AM.III.I.K2 - Float carburetor theory, components, operation, and adjustment
- ☐ AM.III.I.K3 - Pressure carburetor theory, operation, and adjustment
- ☐ AM.III.I.K4 - Continuous-flow fuel injection theory, components, operation, troubleshooting and adjustment
- ☐ AM.III.I.K5 - Digital engine control module (e.g., FADEC)
- ☐ AM.III.I.K6 - Hydromechanical fuel control system design and components
- ☐ AM.III.I.K7 - Fuel nozzles and manifolds design, operation, and maintenance
- ☐ AM.III.I.K8 - Components, theory, and operation of turbine engine fuel metering system
- ☐ AM.III.I.K9 - Inspection requirements for an engine fuel system
- ☐ AM.III.I.K10 - Fuel system operation
- ☐ AM.III.I.K11 - Fuel heaters
- ☐ AM.III.I.K12 - Fuel lines
- ☐ AM.III.I.K13 - Fuel pumps
- ☐ AM.III.I.K14 - Fuel valves
- ☐ AM.III.I.K15 - Fuel filters
- ☐ AM.III.I.K16 - Engine fuel drains

POWERPLANT KNOWLEDGE ELEMENTS (Subject J: Reciprocating Engine Induction and Cooling Systems):

- ☐ AM.III.J.K1 - Reciprocating engine induction and cooling system theory, components, and operation
- ☐ AM.III.J.K2 - Causes and effects of induction system icing
- ☐ AM.III.J.K3 - Superchargers and controls
- ☐ AM.III.J.K4 - Turbochargers, intercoolers, and controls
- ☐ AM.III.J.K5 - Augmenter cooling system
- ☐ AM.III.J.K6 - Induction system filtering
- ☐ AM.III.J.K7 - Carburetor heaters
- ☐ AM.III.J.K8 - Pressure cowling air flow and control
- ☐ AM.III.J.K9 - Reciprocating engine baffle and seal installation
- ☐ AM.III.J.K10 - Liquid cooling system theory, components, and operation

POWERPLANT SKILL ELEMENTS (Subject I: Engine Fuel and Fuel Metering Systems):

- ☐ AM.III.I.S1 - Inspect, troubleshoot, and repair a continuous-flow fuel injection system
- ☐ AM.III.I.S2 - Remove, inspect, and install a turbine engine fuel nozzle
- ☐ AM.III.I.S3 - Identify carburetor components
- ☐ AM.III.I.S4 - Identify fuel and air flow through a float-type carburetor
- ☐ AM.III.I.S5 - Remove and install a carburetor main metering jet
- ☐ AM.III.I.S6 - Inspect a carburetor fuel inlet screen
- ☐ AM.III.I.S7 - Adjust a continuous-flow fuel injection system
- ☐ AM.III.I.S8 - Inspect the needle, seat, and float level on a float-type carburetor
- ☐ AM.III.I.S9 - Remove and install a float-type carburetor
- ☐ AM.III.I.S10 - Adjust carburetor idle speed and mixture
- ☐ AM.III.I.S11 - Locate procedures for a turbine engine RPM overspeed inspection
- ☐ AM.III.I.S12 - Inspect fuel metering cockpit controls for proper adjustment
- ☐ AM.III.I.S13 - Locate procedures for adjusting a hydromechanical fuel control unit
- ☐ AM.III.I.S14 - Locate and explain procedures for removing and installing a turbine engine fuel control unit
- ☐ AM.III.I.S15 - Identify components of an engine fuel system

POWERPLANT SKILL ELEMENTS (Subject I: Engine Fuel and Fuel Metering Systems - Continued):

- ☐ AM.III.I.S16 - Remove and install an engine-driven fuel pump
- ☐ AM.III.I.S17 - Inspect a remotely-operated fuel valve for proper operation
- ☐ AM.III.I.S18 - Locate and identify fuel selector placards
- ☐ AM.III.I.S19 - Inspect a main fuel filter assembly for leaks
- ☐ AM.III.I.S20 - Inspect fuel boost pump
- ☐ AM.III.I.S21 - Locate and identify a turbine engine fuel heater
- ☐ AM.III.I.S22 - Inspect fuel pressure warning light function
- ☐ AM.III.I.S23 - Adjust fuel pump fuel pressure
- ☐ AM.III.I.S24 - Inspect engine fuel system fluid lines and components
- ☐ AM.III.I.S25 - Troubleshoot abnormal fuel pressure
- ☐ AM.III.I.S26 - Locate the procedures for troubleshooting a turbine engine fuel heater system
- ☐ AM.III.I.S27 - Remove, clean, and reinstall an engine fuel filter
- ☐ AM.III.I.S28 - Troubleshoot engine fuel pressure fluctuation
- ☐ AM.III.I.S29 - Inspect fuel selector valve
- ☐ AM.III.I.S30 - Determine correct fuel nozzle spray pattern

POWERPLANT SKILL ELEMENTS (Subject J: Reciprocating Engine Induction and Cooling Systems):

- ☐ AM.III.J.S1 - Inspect a carburetor heat system
- ☐ AM.III.J.S2 - Inspect an alternate air valve for proper operation
- ☐ AM.III.J.S3 - Inspect an induction system drain for proper operation
- ☐ AM.III.J.S4 - Inspect engine exhaust augmenter cooling system
- ☐ AM.III.J.S5 - Service an induction air filter
- ☐ AM.III.J.S6 - Inspect a turbocharger for leaks and security
- ☐ AM.III.J.S7 - Inspect and service a turbocharger waste gate
- ☐ AM.III.J.S8 - Inspect an induction system for obstruction
- ☐ AM.III.J.S9 - Inspect an air intake manifold for leaks
- ☐ AM.III.J.S10 - Locate the proper specifications for coolant used in a liquid-cooled engine

- ☐ AM.III.J.S11 - Inspect reciprocating engine cooling ducting (rigid or flexible) or baffle seals
- ☐ AM.III.J.S12 - Identify components of a turbocharger induction system
- ☐ AM.III.J.S13 - Identify exhaust augmenter-cooled engine components
- ☐ AM.III.J.S14 - Inspect an air inlet duct for security
- ☐ AM.III.J.S15 - Perform an induction and cooling system inspection
- ☐ AM.III.J.S16 - Repair a cylinder baffle

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject I: Engine Fuel and Fuel Metering Systems):

- ☐ AM.III.I.R1 - Adjusting a turbine engine fuel control
- ☐ AM.III.I.R2 - Adjusting reciprocating engine fuel control systems
- ☐ AM.III.I.R3 - Handling of fuel metering system components that may contain fuel
- ☐ AM.III.I.R4 - Considerations during fuel system maintenance
- ☐ AM.III.I.R5 - Handling of engine fuel control units that may contain fuel

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject J: Reciprocating Engine Induction and Cooling Systems):

- ☐ AM.III.J.R1 - Maintenance on turbochargers
- ☐ AM.III.J.R2 - Ground operation of aircraft engines
- ☐ AM.III.J.R3 - Maintenance-related FOD
- ☐ AM.III.J.R4 - Chemicals used in liquid cooling systems

WEEK 7: Turbine Air Systems & Exhaust/Reverser

ACS Codes: AM.III.K, AM.III.L | Focus: Turbine cooling, bleed air, anti-ice, exhaust systems, thrust reversers, noise suppression

POWERPLANT KNOWLEDGE ELEMENTS (Subject K: Turbine Engine Air Systems):

- ☐ AM.III.K.K1 - Air cooling system theory, components, and operation
- ☐ AM.III.K.K2 - Turbine engine cowling air flow
- ☐ AM.III.K.K3 - Turbine engine internal cooling
- ☐ AM.III.K.K4 - Turbine engine baffle and seal installation
- ☐ AM.III.K.K5 - Turbine engine insulation blankets and shrouds
- ☐ AM.III.K.K6 - Turbine engine induction system theory, components, and operation
- ☐ AM.III.K.K7 - Turbine engine bleed air system theory, components, and operation
- ☐ AM.III.K.K8 - Turbine engine anti-ice system

POWERPLANT KNOWLEDGE ELEMENTS (Subject L: Engine Exhaust and Reverser Systems):

- ☐ AM.III.L.K1 - Reciprocating engine exhaust system theory, components, operation, and inspection
- ☐ AM.III.L.K2 - Turbine engine exhaust system theory, components, operation, and inspection
- ☐ AM.III.L.K3 - Noise suppression theory, components, and operation (e.g., mufflers, hush kits, augmenter tubes)
- ☐ AM.III.L.K4 - Thrust reverser theory, components, and operation

POWERPLANT SKILL ELEMENTS (Subject K: Turbine Engine Air Systems):

- ☐ AM.III.K.S1 - Perform an induction and cooling system inspection
- ☐ AM.III.K.S2 - Identify location of turbine engine insulation blankets
- ☐ AM.III.K.S3 - Identify turbine engine cooling air flow
- ☐ AM.III.K.S4 - Inspect turbine engine cooling ducting (rigid or flexible) or baffle seals
- ☐ AM.III.K.S5 - Inspect a turbine engine air intake anti-ice system
- ☐ AM.III.K.S6 - Identify turbine engine ice and rain protection system components
- ☐ AM.III.K.S7 - Inspect a particle separator
- ☐ AM.III.K.S8 - Inspect/check a bleed air system

POWERPLANT SKILL ELEMENTS (Subject L: Engine Exhaust and Reverser Systems):

- ☐ AM.III.L.S1 - Identify the type of exhaust system on a particular aircraft
- ☐ AM.III.L.S2 - Inspect a turbine engine exhaust system component
- ☐ AM.III.L.S3 - Inspect a reciprocating engine exhaust system
- ☐ AM.III.L.S4 - Inspect exhaust system internal baffles or diffusers
- ☐ AM.III.L.S5 - Inspect exhaust heat exchanger
- ☐ AM.III.L.S6 - Locate procedures for testing and troubleshooting a turbine thrust reverser system
- ☐ AM.III.L.S7 - Perform a pressure leak check of a reciprocating engine exhaust system

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject K: Turbine Engine Air Systems):

- ☐ AM.III.K.R1 - Maintenance on compressor bleed air systems
- ☐ AM.III.K.R2 - Ground operation of aircraft engines following other than manufacturer's instructions

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject L: Engine Exhaust and Reverser Systems):

- ☐ AM.III.L.R1 - Maintenance and inspection of exhaust system components
- ☐ AM.III.L.R2 - Operation of turbine engine reversing systems
- ☐ AM.III.L.R3 - Operation of reciprocating engines with exhaust systems leaks
- ☐ AM.III.L.R4 - Exhaust system failures
- ☐ AM.III.L.R5 - Ground operation of aircraft engines

WEEK 8: Turbine Air Systems, Exhaust/Reverser, Propellers + Final Review

ACS Codes: AM.III.K, AM.III.L, AM.III.M | Focus: Turbine cooling/bleed air, exhaust systems, thrust reversers, propeller theory, governor, constant speed props

POWERPLANT KNOWLEDGE ELEMENTS (Subject K: Turbine Engine Air Systems):

- ☐ AM.III.K.K1 - Air cooling system theory, components, and operation
- ☐ AM.III.K.K2 - Turbine engine cowling air flow
- ☐ AM.III.K.K3 - Turbine engine internal cooling
- ☐ AM.III.K.K4 - Turbine engine baffle and seal installation
- ☐ AM.III.K.K5 - Turbine engine insulation blankets and shrouds
- ☐ AM.III.K.K6 - Turbine engine induction system theory, components, and operation
- ☐ AM.III.K.K7 - Turbine engine bleed air system theory, components, and operation
- ☐ AM.III.K.K8 - Turbine engine anti-ice system

POWERPLANT KNOWLEDGE ELEMENTS (Subject L: Engine Exhaust and Reverser Systems):

- ☐ AM.III.L.K1 - Reciprocating engine exhaust system theory, components, operation, and inspection
- ☐ AM.III.L.K2 - Turbine engine exhaust system theory, components, operation, and inspection
- ☐ AM.III.L.K3 - Noise suppression theory, components, and operation (e.g., mufflers, hush kits, augmenter tubes)
- ☐ AM.III.L.K4 - Thrust reverser theory, components, and operation

POWERPLANT KNOWLEDGE ELEMENTS (Subject M: Propellers):

- ☐ AM.III.M.K1 - Propeller theory and operation
- ☐ AM.III.M.K2 - Types of propellers and blade design
- ☐ AM.III.M.K3 - Pitch control and adjustment
- ☐ AM.III.M.K4 - Constant speed propeller and governor theory and operation
- ☐ AM.III.M.K5 - Turbine engine propeller reverse/beta range operation
- ☐ AM.III.M.K6 - Propeller servicing, maintenance, and inspection requirements
- ☐ AM.III.M.K7 - Procedures for removal and installation of a propeller
- ☐ AM.III.M.K8 - Propeller TCDS
- ☐ AM.III.M.K9 - Propeller synchronization systems

- [ ] AM.III.M.K10 - Propeller ice control systems

POWERPLANT SKILL ELEMENTS (Subject K: Turbine Engine Air Systems):

- ☐ AM.III.K.S1 - Perform an induction and cooling system inspection
- ☐ AM.III.K.S2 - Identify location of turbine engine insulation blankets
- ☐ AM.III.K.S3 - Identify turbine engine cooling air flow
- ☐ AM.III.K.S4 - Inspect turbine engine cooling ducting (rigid or flexible) or baffle seals
- ☐ AM.III.K.S5 - Inspect a turbine engine air intake anti-ice system
- ☐ AM.III.K.S6 - Identify turbine engine ice and rain protection system components
- ☐ AM.III.K.S7 - Inspect a particle separator
- ☐ AM.III.K.S8 - Inspect/check a bleed air system

POWERPLANT SKILL ELEMENTS (Subject L: Engine Exhaust and Reverser Systems):

- ☐ AM.III.L.S1 - Identify the type of exhaust system on a particular aircraft
- ☐ AM.III.L.S2 - Inspect a turbine engine exhaust system component
- ☐ AM.III.L.S3 - Inspect a reciprocating engine exhaust system
- ☐ AM.III.L.S4 - Inspect exhaust system internal baffles or diffusers
- ☐ AM.III.L.S5 - Inspect exhaust heat exchanger
- ☐ AM.III.L.S6 - Locate procedures for testing and troubleshooting a turbine thrust reverser system
- ☐ AM.III.L.S7 - Perform a pressure leak check of a reciprocating engine exhaust system

POWERPLANT SKILL ELEMENTS (Subject M: Propellers):

- ☐ AM.III.M.S1 - Remove and install a propeller
- ☐ AM.III.M.S2 - Check blade static tracking
- ☐ AM.III.M.S3 - Inspect a propeller for condition and airworthiness
- ☐ AM.III.M.S4 - Measure propeller blade angle
- ☐ AM.III.M.S5 - Perform a minor repair to a metal propeller blade
- ☐ AM.III.M.S6 - Perform propeller lubrication
- ☐ AM.III.M.S7 - Locate and explain the procedures for balancing a fixed-pitch propeller
- ☐ AM.III.M.S8 - Adjust a propeller governor
- ☐ AM.III.M.S9 - Identify propeller range of operation
- ☐ AM.III.M.S10 - Perform a 100-hour inspection of a propeller and determine airworthiness

- [ ] AM.III.M.S11 - Determine what minor propeller alterations are acceptable using the propeller specifications, TCDS, and listings
- [ ] AM.III.M.S12 - Inspect and repair a propeller anti-icing or de-icing system

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject K: Turbine Engine Air Systems):

- ☐ AM.III.K.R1 - Maintenance on compressor bleed air systems
- ☐ AM.III.K.R2 - Ground operation of aircraft engines following other than manufacturer's instructions

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject L: Engine Exhaust and Reverser Systems):

- ☐ AM.III.L.R1 - Maintenance and inspection of exhaust system components
- ☐ AM.III.L.R2 - Operation of turbine engine reversing systems
- ☐ AM.III.L.R3 - Operation of reciprocating engines with exhaust systems leaks
- ☐ AM.III.L.R4 - Exhaust system failures
- ☐ AM.III.L.R5 - Ground operation of aircraft engines

POWERPLANT RISK MANAGEMENT ELEMENTS (Subject M: Propellers):

- ☐ AM.III.M.R1 - Ground operation
- ☐ AM.III.M.R2 - Propeller maintenance and inspections

FINAL WEEK REVIEW TASKS:

- ☐ Review ALL 13 Powerplant subject areas (A through M)
- ☐ ORAL: Practice explaining concepts without references
- ☐ PRACTICAL: Practice finding information quickly in manuals when allowed
- ☐ Complete practice practical projects from previous weeks
- ☐ Review your Powerplant written test report - study missed ACS codes
- ☐ Organize all reference materials with tabs
- ☐ Practice reciprocating and turbine engine inspections
- ☐ Practice ignition system timing and spark plug maintenance
- ☐ Practice fuel system and carburetor adjustments
- ☐ Practice propeller removal, installation, and inspection
- ☐ Review lubrication system troubleshooting
- ☐ Review all engine 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 the Powerplant O&P test. The test is administered on the same day. The table below shows the combined test structure:

Test Component	Details
Test Format	Powerplant O&P test covering all 13 Powerplant subject areas (Section III). Both oral and practical portions.
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 13 Powerplant 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	WRITTEN TEST: Minimum 70 percent (14 CFR 65.17). ORAL AND PRACTICAL: Satisfactory demonstration of knowledge, risk management, and skill elements tested. No percentage score - evaluated as pass/fail by subject area and project.
What to Bring	* Two FAA Forms 8610-2 with original signatures * Passing written test report (AKTR) for Powerplant * Government-issued photo ID with signature * Proof of eligibility (graduation certificate or experience documentation)
Prerequisites	* Passed Powerplant written test (valid 24 months) * Meet experience requirements (14 CFR 65.77) or AMTS graduation * Completed pretest interview with DME * Agreed upon testing fee with DME

About the Mechanic Test Generator (MTG): Your examiner will use the FAA's online MTG system to generate your test. The test is generated selecting random questions and projects from the Powerplant ACS sections, plus additional oral questions based on the specific ACS codes you missed on your Powerplant written test. 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 13 Powerplant subject areas.

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 Powerplant written test
- ☐ ORAL: Can explain concepts and procedures without references
- ☐ PRACTICAL: Know where to find specifications in manuals when allowed
- ☐ Studied all 13 Powerplant ACS subject areas (Section III) thoroughly
- ☐ Comfortable with Knowledge, Risk Management, AND Skill elements for BOTH tests
- ☐ Read FAA-G-ACS-1 Companion Guide completely
- ☐ Reviewed FAA-H-8083-32B Powerplant Handbook

PRACTICAL SKILLS PREPARATION (FAA-S-ACS-1 Section III)

- ☐ Can perform cylinder compression test (AM.III.C.S1)
- ☐ Know how to set magneto internal timing and time magneto to engine (AM.III.H.S1, S2)
- ☐ Can remove, clean, gap, and install spark plugs (AM.III.H.S3, S11)
- ☐ Comfortable with carburetor inspection and adjustment (AM.III.I.S3-S10)
- ☐ Can adjust carburetor idle speed and mixture (AM.III.I.S10)
- ☐ Know how to inspect and service oil system components (AM.III.G.S1-S14)
- ☐ Can inspect and identify chip detector findings (AM.III.G.S14)
- ☐ Know propeller removal, installation, and inspection (AM.III.M.S1, S3)
- ☐ Can measure propeller blade angle and check static tracking (AM.III.M.S2, S4)
- ☐ Comfortable with turbine engine inspections - compressor blades, fuel nozzles (AM.III.B.S5-S13)
- ☐ Can troubleshoot engine instrument systems (AM.III.D.S1-S17)
- ☐ Know exhaust system inspection procedures (AM.III.L.S1-S7)
- ☐ Familiar with fire detection/extinguishing system inspection (AM.III.E.S1-S14)
- ☐ Can perform engine electrical system troubleshooting (AM.III.F.S1-S15)

DOCUMENTATION & LOGISTICS

- ☐ Have passing Powerplant written test report (AKTR)
- ☐ 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 powerplant reference materials organized and tabbed (FAA-H-8083-32B, engine manuals)
- ☐ Confirmed pretest interview completed with DME
- ☐ Know the specific aircraft/engine 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

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 (POWERPLANT):

Magneto Timing: Understand internal timing (E-gap) vs. magneto-to-engine timing. Know how to use a timing light and the significance of timing marks. Be able to explain the three electrical circuits of a magneto.

Ignition System Theory: Know the difference between high-tension and low-tension systems, impulse coupling operation, and why dual ignition is required. Understand magneto checks and what RPM drop indicates.

Carburetor Operation and Adjustment: Understand float-type vs. pressure carburetors, fuel/air mixture theory, idle speed/mixture adjustment, and how to troubleshoot rich/lean conditions.

Turbine Engine Theory: Know the differences between turbojet, turbofan, turboprop, and turboshaft engines. Understand N1/N2 relationship, EGT/ITT limits, compressor stall, and hot/hung starts.

Propeller Operations: Understand constant-speed propeller and governor theory, blade angle measurement, feathering, and beta range. Know propeller inspection criteria and TCDS requirements.

Compression Testing: Know the difference between differential and direct compression tests, acceptable readings, and what low compression indicates (rings vs. valves).

Lubrication Systems: Understand wet-sump vs. dry-sump systems, oil analysis interpretation, chip detector findings, and the significance of metal contamination types.

Engine Instrument Systems: Know how EGT, CHT, oil pressure/temperature, and tachometer systems work. Understand FADEC, EICAS, and engine indicating system troubleshooting.

Fuel System Troubleshooting: Be able to diagnose fuel pressure fluctuations, vapor lock, fuel nozzle problems, and fuel control unit issues on both recip and turbine engines.

Regulations Knowledge: Understand 14 CFR Part 43 and 91 requirements for engine inspections, life-limited parts, ADs, and maintenance recordkeeping.

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 13 Powerplant 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.