November 12, 2026

Mr. Trey McClure
Division Manager, General Aviation and Commercial Division (AFS-800)
Federal Aviation Administration
800 Independence Ave SW
Washington, DC 20591

Subject: Industry Recommendation for Mechanic Airman Certification Standards Revision

Dear Trey,

On behalf of the undersigned organizations representing aviation maintenance educators, employers, labor, manufacturers, maintenance organizations, and certification stakeholders, we submit the attached recommended revision to the Mechanic Airman Certification Standards (ACS).

The proposal reflects more than a year of collaborative work by an industry working group convened by ATEC following the dissolution of the FAA-industry ACS working group. It builds on earlier recommendations submitted by Airlines for America and incorporates input from educators, designated mechanic examiners, technicians, operators, manufacturers, and industry associations.

The recommendations also draw on research conducted by Clemson University in partnership with ATEC through *Bridging the Gaps in Aviation Maintenance Education: Identifying Workforce Needs and Opportunities*, a study supported by the National Aeronautics and Space Administration under Grant No. 80NSSC24K0201.

The coalition's objectives were to:

- Improve clarity and usability for applicants, instructors, and evaluators.
- Strengthen alignment among knowledge, risk management, and skill elements.
- Support consistent training and evaluation.
- Reflect current maintenance practices and emerging technologies.
- Connect certification standards with workforce needs through competency-based principles and observable behaviors.

The proposed revision improves organization, reduces duplication, and strengthens the integration of human factors and risk management. It also clarifies how regulatory requirements, maintenance performance standards, safety, and professional conduct apply throughout the ACS. A proposed Competency Domains framework describes

professional behaviors and work practices that support application of the standards without establishing separate test elements.

These recommendations reflect a consensus-driven industry effort to support a relevant, effective mechanic certification framework. Because the ACS informs both certification testing and maintenance training, clear and consistent standards benefit applicants, training providers, examiners, and employers alike.

We appreciate the FAA's engagement and welcome continued collaboration during its review. The coalition is available for recurring working sessions to explain the recommendations, address questions, and assist with revisions.

Thank you for your consideration and continued partnership in advancing aviation maintenance safety, standardization, and workforce development.

Sincerely,

Aeronautical Repair Station Association

Aircraft Mechanics Fraternal Association

Airlines for America

Aviation Technician Education Council

General Aviation Manufacturers Association

Vertical Aviation International

PROPOSED REVISION
FAA-S-ACS-1A

Aviation Mechanic
General, Airframe, and Powerplant
Airman Certification Standards

Effective Date: TBD

Foreword

The U.S. Department of Transportation (DOT), Federal Aviation Administration (FAA), Office of Safety Standards, Regulatory Support Division, Airman Testing Standards Branch has published the Aviation Mechanic General, Airframe, and Powerplant Airman Certification Standards (ACS) to communicate the aeronautical knowledge, risk management, and proficiency standards for the Mechanic Certificate.

The *Aviation Mechanic General, Airframe, and Powerplant Airman Certification Standards* (FAA-S-ACS-1A), or Mechanic ACS, define the aeronautical knowledge, risk management, and skill performance expectations used to evaluate applicants for the Mechanic Certificate under 14 CFR part 65, subpart D. These certification standards describe what applicants must know, consider, and do during the written, oral, and practical tests. Material in FAA-S-ACS-1A supersedes FAA-S-ACS-1.

The FAA has also revised the *Companion Guide to the Aviation Mechanic General, Airframe, and Powerplant Airman Certification Standards* (FAA-G-ACS-1A) to provide guidance that supports consistent interpretation and use of the Mechanic ACS across testing and training settings.

Skill elements specify what the applicant must demonstrate. Subject order reflects logical grouping and does not prescribe an instructional sequence or curriculum design.

Some Mechanic ACS subjects do not include separate Skill elements. Competencies in these subjects are demonstrated through application in system-specific Skill elements in the appropriate ACS subject areas.

Appendix A describes the performance standards and safety expectations that apply across all ACS competencies and elements, whether explicitly stated or not, and guide both training and evaluation.

The Competency Domains and their observable behaviors are set forth in Appendix B and describe professional behaviors and work practices that provide context for applying ACS proficiency standards during testing and training. They are not evaluated as separate ACS elements. Expanded discussion and examples are provided in FAA-G-ACS-1A, the *Companion Guide to the Mechanic ACS.*

This Mechanic ACS and its Companion Guide are available for download from www.faa.gov.

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Revision History

Document	Description	Date
FAA-S-ACS-1	Aviation Mechanic - General, Airframe, and Powerplant Airman Certification Standards	11/01/2021
FAA-S-ACS-1A	Non-regulatory appendix material has been moved to the *Companion Guide (*FAA-G-ACS-1A). The revision updates technical content, clarifies subject boundaries, and improves the consistency and usability of the ACS for training and evaluation. Major improvements include: **1. Modernized Structure and Organization** • Reorganized Knowledge, Risk Management, and Skill elements and standardized terminology and verb usage across General, Airframe, and Powerplant sections. • Removed legacy Practical Test Standards (PTS) artifacts and outdated terminology. • Clarified subject boundaries to reduce overlap and support curriculum development, consistent evaluation, and future updates, including digital testing and competency-based approaches. **2. Strengthened Regulatory and Technical Alignment** • Updated content to reflect current FAA guidance, manufacturer practices, and contemporary aircraft systems. • Aligned Skill elements with the Minimum Tools and Equipment List (MTEL) used by designated mechanic examiners (DMEs). • Aligned subject organization with Air Transport Association (ATA) system logic where appropriate. **3. Refined Skill Elements for Observability and Testability** • Rewrote Skill elements with observable action verbs and clearer expectations for troubleshooting, measurement, adjustment, and inspection. • Removed Skill elements that were not feasible with MTEL equipment or appropriate for evaluation. • Focused Skill elements on realistic, safety-critical maintenance tasks. • Clarified how competencies in subjects without separate Skill elements are demonstrated in system-specific Skill elements. **4. Enhanced Knowledge Elements for Accuracy and Relevance** • Updated Knowledge elements for modern systems, including ADS-B, ACAS/TCAS, composite structures, and digital engine indications. • Consolidated or separated Knowledge elements, removed redundant content, and added missing foundational concepts.	TBD

Document	Description	Date
	5. Improved Risk Management Integration • Updated Risk Management elements for contemporary hazards, human factors, and system-specific risks. • Replaced ambiguous or non-hazard-based statements with concise, technically accurate risk statements aligned with FAA safety principles. **6. Consistent Terminology and Style** • Applied a unified style guide across all ACS sections to ensure parallel structure, consistent verb usage, and clear intent. • Standardized terminology for system components, maintenance actions, and failure modes. • Eliminated ambiguous or informal terms and replaced them with FAA-authentic language. **7. Increased Clarity for Training Providers and DMEs** • Improved readability and logical flow to support curriculum development, instruction, and testing. • Ensured each element clearly communicates what an applicant must know, consider, or demonstrate. • Reduced ambiguity to support consistent evaluation across the national DME network. **8. Future-Focused and Industry-Responsive Framework** • Created a structure that can accommodate future updates more easily. • Ensured the ACS reflects current aircraft technology while remaining adaptable to emerging systems. • Strengthened the foundation for future modernization efforts, including digital testing and competency-based approaches.	

Airman Certification Standards – General

Current Code	Subject
H.	Mathematics
J.	Physics for Aviation
New	Hand Tools and Measuring Devices
E.	Aircraft Materials, Processes, and Hardware
D.	Fluid Lines and Fittings
A.	Electricity and Electronic Principles
New	Electrical Power Generation and Distribution
New	Aircraft Wiring - Materials and Installation Practices
New	Fire Protection Concepts and Techniques
New	Aircraft Instrumentation
B.	Aircraft Drawings
C.	Weight and Balance
F.	Safety, Ground Operations, and Servicing
G.	Cleaning and Corrosion Control
L.	Human Factors
I.	Regulations, Maintenance Forms, Records, and Publications
K.	Inspection Concepts and Techniques
New	Troubleshooting Concepts and Techniques

Subject H. Mathematics	
Competency	Apply mathematical operations, conversions, and verification techniques to aircraft maintenance calculations and decisions.
Knowledge	**The applicant will be able to:**
.....	**Basic Mathematical Operations**
AM.I.H.K.13.	Perform basic mathematical operations with whole numbers, fractions, decimals, and percentages used in aircraft maintenance.
.....	Convert between fractions, decimals, and percentages and simplify fractional values used in maintenance calculations.
.....	**Ratios, Proportions and Algebra**
AM.I.H.K.4.	Solve ratio problems used in aircraft maintenance and system operation.
AM.I.H.K.5.	Solve proportion and percentage problems relevant to aircraft maintenance tasks.
AM.I.H.K.6.	Apply basic algebraic operations to maintenance-related formulas and calculations.
.....	**Numeral Systems and Conversions**
.....	Explain the purpose and basic structure of common numeral systems (binary, decimal, octal, hexadecimal) and how these values appear in aircraft maintenance documentation.
AM.I.H.K.7.	Convert between metric and conventional units and explain when metric units are required in aircraft maintenance.
.....	**Engineering Notation and Rounding**
AM.I.H.K.8.	Perform conversions and basic operations using engineering notation for maintenance-related values.
AM.I.H.K.9.	Explain how rounding affects tolerance limits, measurement accuracy, and compliance with appropriate specifications.
.....	**Geometry and Trigonometry**
AM.I.H.K.1.	Calculate dimensions, areas, and volumes of common geometric shapes used in aircraft structures.
.....	Apply trigonometric functions and the Pythagorean Theorem to solve right triangle problems relevant to aircraft measurements.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.I.H.R.1.	Inaccurate calculations, including errors involving positive and negative integers.
AM.I.H.R.3.	Improper numerical rounding.
.....	Failure to recognize when a calculated value is clearly unrealistic or inconsistent with expected limits.

Subject J. Physics for Aviation	
Competency	Apply fundamental physical principles to interpret aircraft behavior and inform maintenance decisions.
Knowledge	**The applicant will be able to:**
AM.I.J.K.1.	Describe matter and its fundamental characteristics.
.....	Explain potential and kinetic energy and their relationship to aircraft motion.
.....	Calculate potential and kinetic energy values using standard formulas in aviation scenarios.
AM.I.J.K.2.	Calculate work, power, force, torque, and friction values using standard formulas.
AM.I.J.K.3.	Explain mechanical advantage principles and the functions of simple machines.
AM.I.J.K.4.	Explain how pressure, temperature, and volume relate using the gas laws.
AM.I.J.K.5.	Explain Bernoulli's Principle and its relationship to pressure, temperature, and airflow in aviation.
AM.I.J.K.7.	Explain pressure behavior and force transmission in incompressible fluids using Pascal's Law.
AM.I.J.K.6.	Explain Newton's Laws of Motion and their application to aircraft operation and maintenance.
AM.I.J.K.8.	Describe the theory of flight as it applies to aircraft construction, flight controls, and aerodynamic devices.
.....	Describe high-speed aerodynamic concepts and their effects on airflow behavior and aircraft stability.
AM.I.J.K.9.	Explain the standard atmosphere and how variations in atmospheric conditions affect aircraft performance and altitude references.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.I.J.R.1.	Incorrect recognition of aircraft or engine performance changes.
AM.I.J.R.2.	Adverse aerodynamic effects from improper repairs or alterations to flight surfaces.
AM.I.J.R.3.	Incorrect interpretation or application of performance or test data indications.
AM.I.J.R.4.	Incorrect use or conversion of units of measure.

Subject NEW. Hand Tools and Measuring Devices	
Competency	Select, use, and care for hand tools using appropriate practices and safety precautions. Select and use precision measuring devices, considering calibration status and measurement accuracy.
Knowledge	**The applicant will be able to:**
.....	Describe the proper use, care, maintenance, and safety precautions for hand tools used in aircraft maintenance.
.....	Describe the proper use, care, maintenance, and safety precautions for powered tools used in aircraft maintenance, including electrical, pneumatic, and hydraulic powered tools.
AM.I.K.K.1.	Explain the functions and proper use of layout and measuring tools, including precision instruments.
	Describe the factors that affect measurement accuracy, including tool condition, calibration status, technique, and environmental influences.
.....	Explain calibration principles for precision tools and equipment, including the purpose of calibration, common methods, and limitations.
	Explain how measurement tolerances, limits, and specifications are used to determine part acceptability.
.....	Explain torque-tool techniques that support accurate torque applications.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.I.K.R.2.	Incorrect use of precision measuring instruments.
AM.I.K.R.3.	Incorrect calibration status or failure to maintain calibration schedules for precision measuring devices and equipment.
.....	Improper use or setup of torque measuring tools.
.....	Improper selection or use of hand tools or cutting tools.
.....	Use of damaged or unserviceable hand tools or cutting tools.
Skills	**The applicant demonstrates the ability to:**
AM.I.K.S.1.	Use a vernier scale to measure a part and compare the measurement against specified tolerances to determine acceptability.
AM.I.K.S.2.	Use a micrometer to measure a part and compare the measurement to the specified tolerance to determine acceptability.
.....	Use a torque-measuring tool to apply the specified torque per applicable standards or procedures.
	Use an appropriate instrument to verify a specified clearance or gap.
	Use an appropriate instrument to verify a specified depth measurement.

Subject E. Aircraft Materials, Processes, and Hardware	
Competency	Explain how material treatment processes affect material properties and how these properties determine suitability for aircraft manufacturing, maintenance, and repair. Identify and select aircraft materials using material properties, compatibility, and identification methods to determine conformity to the approved design and applicable certification standards. Identify, inspect, and install aircraft and control system hardware using appropriate selection, installation, torque, and safetying practices.
Knowledge	**The applicant will be able to:**
	Suspected Unapproved Parts
.....	Explain suspected unapproved parts (SUP), including their definition, common indicators, regulatory requirements, and associated safety risks.
	Aircraft Materials
AM.I.E.K.1.	Explain the properties and characteristics of aircraft materials used in maintenance and repair.
.....	Describe how material properties influence the use and performance of aircraft materials.
AM.I.E.K.9.	Explain material compatibility considerations for aircraft materials.
AM.I.E.K.11.	Describe how to identify aircraft materials using manufacturer information and material markings.
	Aircraft Hardware
AM.I.E.K.4.	Interpret appropriate specifications, markings, and documentation to identify aircraft hardware and determine the correct application.
.....	Determine hardware suitability based on material, strength, effectivity, and substitution guidelines.
.....	Explain the principles of material compatibility in aircraft hardware.
.....	Describe the factors that contribute to hardware compatibility risks.
AM.I.E.K.5.	Explain safetying methods and their functional purposes.
AM.I.E.K.10.	Explain the functions and applications of special fasteners.
AM.II.I.S.9.	Explain the function and selection considerations for vibration-isolation hardware, such as shock mounts.
AM.I.D.K.5.	Explain the principles that govern correct torque values and torque application sequences for aircraft hardware.
.....	Describe how torque influences fastener loading and load distribution.
.....	Explain the purpose and principles of torque verification methods.
.....	Describe the consequences of improper torque on hardware integrity and system reliability.
AM.I.D.K.6.	Describe torque-seal and witness-marking methods used to verify hardware security and detect loosening or movement.
	Control System Hardware
	Control Cables
AM.II.C.K.1.	Explain the construction and functional principles of aircraft control cables.
	Describe the inspection criteria for aircraft control cables.
	Explain the maintenance considerations and regulatory requirements that govern control cable servicing and replacement.

Subject E. Aircraft Materials, Processes, and Hardware	
	Connectors
AM.II.C.K.3.	Explain the characteristics and functional role of connectors used in control-system assemblies.
	Describe the inspection considerations for control-system connectors.
	Cable Guides and Stops
AM.II.C.K.4.	Explain the functions of cable guides and stops in maintaining routing and system protection.
	Describe installation considerations for cable guides and stops.
	Push-Pull Tubes
AM.II.C.K.6.	Explain the characteristics of push-pull tubes used in flight-control systems.
	Describe the installation considerations for push-pull tubes.
	Explain how push-pull tubes integrate into flight-control systems.
	Torque Tubes
AM.II.C.K.7.	Explain the characteristics of torque tubes used in flight-control systems.
	Describe the installation considerations for torque tubes.
	Explain how torque tubes integrate into flight-control systems.
	Bellcranks
AM.II.C.K.8.	Explain the principles of bellcrank operation.
.....	**Aircraft Material Processes**
AM.I.E.K.2.	Explain heat treatment processes and their effects on material properties and suitability.
.....	Explain how metalworking processes affect material characteristics.
	Describe how material characteristics influence the use of aircraft materials.
	Welding
AM.I.E.K.13.	Identify common welding defects.
AM.I.E.K.12.	Describe the characteristics of acceptable welds.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
.....	Improper selection or identification of materials or hardware.
.....	Improper installation or securing of hardware.
.....	Material or hardware incompatibility.
AM.I.E.R.2.	Improper torque application.
AM.I.E.R.3.	Used or damaged hardware.
.....	Use of unapproved or unairworthy parts.
AM.I.E.R.5.	Poor or improper safety-wiring.
Skills	**The applicant demonstrates the ability to:**
.....	**Aircraft Materials**
AM.I.E.S.10.	Select the correct aluminum alloy for a structural repair.
AM.I.E.S.12.	Determine the suitability of materials for aircraft repair.
.....	Determine the compatibility of two materials for aircraft repair.
.....	**Aircraft Hardware**
AM.I.E.S.1.	Install safety wire on nuts, bolts, or turnbuckles.
AM.I.E.S.2.	Torque aircraft bolts according to applicable standards or maintenance procedures.

Subject E. Aircraft Materials, Processes, and Hardware	
AM.I.E.S.8.	Identify aircraft control cable components.
AM.I.E.S.11.	Identify rivets by their physical characteristics.
.....	Apply a torque seal or witness-marking method.
.....	**Aircraft Material Processes**
AM.I.E.S.4.	Identify aircraft materials based on the manufacturer’s markings.
.....	Identify aircraft hardware based on the manufacturer’s markings.
AM.I.E.S.13.	Distinguish between heat-treated and non-heat-treated aluminum alloys, based on the manufacturer's markings.
AM.I.E.S.3.	Conduct a basic visual inspection of welded materials to verify structural integrity.
.....	Perform a liquid penetrant inspection on a metallic component.

Subject D. Fluid Lines and Fittings	
Competency	Fabricate, install, and inspect aircraft fluid lines and fittings using appropriate materials, sizing, routing, and inspection practices.
Knowledge	**The applicant will be able to:**
AM.I.D.K.1.	Explain the materials, construction features, and identification methods of rigid aircraft fluid lines.
AM.I.D.K.2.	Explain the materials, construction features, identification methods, and typical applications of flexible hose assemblies.
AM.I.D.K.3.	Explain the principles of tube forming, including bend radius, flare geometry, flareless fitting concepts, and beading.
.....	Explain routing, support, and installation considerations for rigid lines and flexible hoses.
AM.I.D.K.4.	Explain inspection and testing concepts for rigid lines and flexible hoses.
.....	Explain aircraft fluid line identification systems and their purpose in maintenance and safety.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.I.D.R.1.	Improper system configuration and fluid line installation.
AM.I.D.R.3.	Improper handling, identification, or material compatibility with hazardous fluids.
AM.I.D.R.4.	High-pressure fluid system hazards, including line rupture and fitting failure.
AM.I.D.R.5.	Twisted or improperly routed hoses.
AM.I.D.R.6.	Loose fittings or hoses that have shifted out of position.
Skills	**The applicant demonstrates the ability to:**
AM.I.D.S.1.	Fabricate a rigid line with a flare and a bend.
AM.I.D.S.7.	Fabricate a flexible hose.
AM.I.D.S.8.	Fabricate a flareless-fitting tube connection for use in a hydraulic or low-pressure pneumatic system.
AM.I.D.S.2.	Install an aircraft rigid line.
AM.I.D.S.3.	Install an aircraft flexible hose.
AM.I.D.S.4.	Inspect a rigid line or flexible hose for condition and serviceability.

Subject A. Electricity and Electronic Principles	
Competency	Explain how electrical quantities, circuit laws, components, and AC/DC characteristics affect aircraft circuit operation and system performance. Perform electrical measurements and basic troubleshooting using appropriate tools, schematics, and component tests to verify circuit status and identify faults.
Knowledge	**The applicant will be able to:**
	Basic Circuit Theory and Laws
AM.I.A.K.1.	Explain voltage, current, resistance, power, and how they relate to circuit behavior.
	Explain electron flow and conventional current flow, and how each is used in circuit analysis.
AM.I.A.K.2.	Explain magnetic fields and their relationship to current flow.
	Explain electromagnetic induction and its role in aircraft electrical systems.
	Explain the principles of AC and DC power generation.
AM.I.A.K.7.a	Use Ohm's and Watt's Laws to calculate electrical values and determine circuit performance.
AM.I.A.K.7.b	Use Kirchhoff's Voltage and Current Laws to determine current flow and voltage distribution in multi-load circuits.
	AC/DC Fundamentals
.....	Compare AC and DC electrical systems in terms of operation, applications, and safety considerations.
AM.I.A.K.5.	Describe basic AC waveform characteristics (frequency, amplitude, and shape).
AM.I.A.K.11.a	Explain inductive and capacitive reactance and the influence of reactive components on AC circuit impedance.
	Electrical Components
.....	Identify resistors and their function in aircraft electrical circuits.
AM.I.A.K.4.	Explain the operating principles and functions of inductors in AC and DC circuits.
AM.I.A.K.3.	Explain the operating principles and functions of capacitors in AC and DC circuits.
AM.I.A.K.21.	Describe the function and use of common solid-state components in aircraft electrical circuits.
	Describe the function of rectification components and interpret their schematic symbols.
AM.I.A.K.16.	Describe transformer characteristics and their functions in AC circuits.
	Digital Electronic Fundamentals
	Describe the general purpose of aircraft digital data buses used for system communication.
AM.I.A.K.23.	Recognize common digital numeral systems (binary, decimal, hexadecimal) as they appear in aircraft electrical and electronic documentation.
	Describe the differences, advantages, and disadvantages of digital and analog electrical signals.
AM.I.A.K.22.	Explain digital logic conventions, truth tables, and logic gate functions used in aircraft electronic systems.
	Electrical Measurement Tools and Techniques
AM.I.A.K.8.	Use multimeters and other electrical measurement tools to safely measure voltage, current, resistance, continuity, and capacitance.
AM.I.A.K.17.	Describe continuity testing and fault detection using multimeters and continuity testers.

Subject A. Electricity and Electronic Principles	
.....	Explain the operating principles of basic electromagnetic sensors used in aircraft systems.
.....	Describe the purpose of an oscilloscope and its use in observing AC waveforms.
	Circuit Protection, Switching, Relays, and ESD
	Circuit Protection Fundamentals
.....	Identify circuit protection devices and explain their operating principles.
.....	Explain derating requirements and factors affecting device selection.
	Safety Practices
.....	Explain safety practices for working with energized and de-energized circuits when replacing or inspecting protection devices.
AM.I.A.K.24.	Explain the principles of electrostatic discharge (ESD), including how static charge is generated, how it transfers, and its effects on electrical and electronic components.
.....	Describe ESD control procedures, including grounding, wrist straps, and handling precautions.
.....	**Switches, Relays and Protective Devices**
.....	Describe the types and functions of switches, protective devices, and relays used in aircraft electrical systems.
AM.II.K.K.5.	Explain factors that influence switch and protective device compatibility in aircraft electrical circuits.
.....	Identify common failure modes associated with switches, relays, and protective devices.
AM.II.K.K.8.	Describe factors that influence switch derating in aircraft electrical systems.
AM.I.A.K.18.	Explain the operating principles of relays and solenoids used in aircraft electrical systems.
	Differentiate between relays and solenoids and describe their respective functions within aircraft electrical systems.
.....	Identify switch types and contact configurations used in aircraft electrical systems.
.....	Interpret switch and relay symbols and contact positions in wiring diagrams.
.....	**Schematic and Wiring Diagram Interpretation**
.....	Interpret aircraft wiring diagrams, symbols, and routing conventions to support troubleshooting and safe operations.
.....	Identify component locations, interconnections, and circuit paths within wiring diagrams, drawings, and system schematics.
	Basic Circuit Troubleshooting
.....	Explain common electrical faults (open, short, intermittent) and their symptoms.
AM.II.K.K.13.	Verify basic electrical parameters (voltage, current, resistance, continuity) using appropriate measurement procedures and determine whether values are within acceptable limits.
.....	Apply systematic troubleshooting procedures to isolate electrical faults using appropriate data.
.....	Verify circuit status and ensure safe conditions before performing troubleshooting steps.

Subject A. Electricity and Electronic Principles	
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.I.K.R.5.	Damage to aircraft components or test equipment from improper measurement or test procedures.
AM.III.F.R.3.	Electrical shock or arc hazards associated with energized circuits.
.....	Misinterpreting electrical quantities, relationships, or circuit behavior.
.....	Misinterpreting the effects of abnormal AC or DC electrical values on circuit operation.
.....	Misunderstanding component or device functions.
.....	Misinterpretation of measurement results, wiring diagrams, or circuit status.
.....	Incorrect switch or protective device selection.
	Improper bonding or electrostatic discharge protection.
Skills	**The applicant demonstrates the ability to:**
	Circuit Fundamentals and Measurements
AM.I.A.S.11.	Measure voltage, current, resistance, and voltage drop using appropriate tools.
.....	Check resistors, capacitors, inductors, and transformers for serviceability using appropriate tooling.
AM.I.A.S.5.	Test relays, switches, and circuit protective devices for proper function.
	Solid-State Devices and ESD
.....	Check solid-state components for proper operation.
	Basic Circuit Troubleshooting
AM.II.K.S.18.	Verify conductor integrity using continuity and resistance tests.
	Schematic Interpretation
AM.I.A.S.7.	Interpret aircraft electrical circuit diagrams and symbols, including solid-state devices and logic functions.
AM.II.K.S.4.	Trace (highlight) voltage pathways based on their voltage on a schematic or wiring diagram for a specified operating condition.
	Load Analysis and Component Verification
AM.II.K.S.9.	Perform an electrical load analysis.
AM.II.K.S.5.	Solder an electrical joint and verify security and continuity.
AM.II.K.S.16.	Troubleshoot aircraft electrical circuits using a multimeter to isolate basic faults.

Subject NEW. Electrical Power Generation and Distribution	
Competency	Explain the generation, distribution, storage, and control of aircraft electrical power, including buses, batteries, motors, external power interfaces, and load demands.
Knowledge	**The applicant will be able to:**
	Electrical Power Distribution
.....	Describe the function of aircraft electrical bus systems and their role in distributing power.
.....	Identify the effects of power bus failures in multi-bus aircraft electrical systems.
.....	Describe basic AC and DC power distribution paths in aircraft electrical systems.
AM.II.K.K.6.	Describe the function of inverters and rectifiers in converting between AC and DC for aircraft systems.
	Aircraft Batteries
AM.I.A.K.15.	Identify aircraft battery types, operating principles, and key characteristics.
.....	Describe safety procedures for handling, testing, and disposing of aircraft batteries.
.....	Determine the state of charge of an aircraft battery.
.....	Explain hazards associated with aircraft batteries, including chemical, thermal, and electrical risks.
	Motors
AM.I.A.K.27.	Identify the components and operating principles of basic AC and DC motors.
.....	Explain how AC frequency and voltage influence motor operation.
	External Power and Ground Handling
	Describe the function and connection requirements of external power receptacles and ground power units.
	Identify compatibility considerations when connecting external power to aircraft electrical systems.
	Load Analysis and Component Evaluation
.....	Explain electrical load concepts and their impact on circuit and component performance.
	System Integration and Engine-Specific Electrical Behavior
AM.III.F.K.8.	Explain generator paralleling concepts and the effects of incorrect polarity or grounding.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.I.A.R.2.	Chemical, thermal, or electrical hazards associated with battery systems.
AM.II.K.R.3.	Maintenance on energized aircraft electrical buses.
AM.II.K.R.2.	Use of incompatible or improperly connected external power sources.
.....	Incorrect fault isolation or load evaluation.
Skills	**The applicant demonstrates the ability to:**
.....	**Electrical Power Distribution**
AM.II.K.S.17.	Use wiring diagrams to trace basic electrical circuits.
.....	**External Power and Ground Handling**
AM.I.F.S.2.	Connect and disconnect an external power unit.
.....	Inspect external power receptacles for condition and security.

Subject NEW. Aircraft Wiring - Materials and Installation Practices	
Competency	Install, route, join, secure, inspect, and repair aircraft wiring and associated components.
Knowledge	**The applicant will be able to:**
.....	**Aircraft Wiring Materials and Installation Practices**
AM.II.K.K.7.	Explain factors that influence wire gauge and insulation selection for aircraft electrical systems.
.....	Identify common aircraft electrical wire types.
.....	Identify common aircraft electrical connector types and their applications.
.....	Compare common wire termination and splicing methods used in aircraft electrical systems.
.....	Explain what information is commonly conveyed in aircraft wire marking codes used by aircraft manufacturers.
	Wiring Routing, EWIS, and EMI Protection
.....	Describe the purpose of EWIS documentation and how it supports safe wire installation and routing.
.....	Interpret wire routing diagrams to understand installation intent.
	Identify factors in routing diagrams that influence wiring safety and airworthiness.
.....	Describe EWIS elements and general maintenance considerations for electrical wiring.
AM.II.K.K.9.	Describe installation-level EMI mitigation strategies used in airframe and engine wiring.
.....	Describe wire harness security principles used to support safe and airworthy electrical installations.
.....	Analyze how wiring, grounding, or component installation errors affect aircraft electrical system performance.
	Grounding and Bonding
AM.II.I.K.10.	Explain the purpose of bonding jumpers and their role in maintaining electrical continuity in aircraft systems.
.....	Describe how bonding and static discharge support EMI mitigation and lightning protection in aircraft systems.
	Electrical Wiring, Connectors, and Installation
.....	Explain routing, protection, and environmental considerations for electrical wiring.
AM.III.F.K.7.	Describe wire gauge, insulation, and installation requirements for electrical wiring.
.....	Describe inspection considerations for electrical connectors, harnesses, and repairs.
.....	Identify common fault symptoms that indicate wiring or installation issues in aircraft electrical circuits.
.....	**Electrical Joining Methods**
AM.I.E.K.7.	Explain the basic principles of soldering as an electrical joining method.
.....	Identify the key material and thermal factors that influence the reliability of a soldered electrical connection.
.....	**Fiber Optics**
.....	Describe basic awareness level considerations for fiber optic components in aircraft systems.

Subject NEW. Aircraft Wiring - Materials and Installation Practices	
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.K.R.5.	Improper routing or securing of electrical wiring.
AM.II.K.R.6.	Incorrect selection of wire gauge, insulation, or terminals.
.....	Improper installation or termination of electrical conductors or components.
AM.II.K.R.8.	Improper soldering techniques.
AM.II.K.R.9.	Unstable or poorly secured soldered connections.
.....	Improper inspection of soldered connections.
Skills	**The applicant demonstrates the ability to:**
	Aircraft Wiring Materials and Installation Practices
.....	Select wire gauge, insulation type, and terminals appropriate to circuit requirements.
AM.II.K.S.2.	Terminate and splice aircraft wiring and verify security and continuity.
AM.II.K.S.3.	Assemble and install an electrical connector and verify security and continuity.
AM.II.K.S.8.	Secure wire bundles using appropriate clamps, ties, or lacing methods.
AM.II.K.S.7.	Install aircraft electrical wiring, switches, and protective devices.
	Wiring Routing, EWIS, and EMI Protection
AM.II.K.S.1.	Inspect aircraft wiring for physical damage, inadequate support, and other conditions that may affect airworthiness.
	Grounding, Bonding, and Protection Systems
AM.III.F.S.13.	Fabricate and install bonding jumpers and verify continuity.
AM.II.I.S.10.	Check the grounding and bonding of electrical components for continuity.
AM.II.I.S.11.	Inspect static discharge wicks for condition, security, and resistance.
	Wiring, Connectors and Installation
AM.III.F.S.9.	Select the appropriate wire gauge for an electrical component.
AM.III.F.S.10.	Repair electrical wiring.
.....	Perform continuity and insulation resistance tests on electrical wiring.
AM.III.F.S.11.	Remove and install lacing or securing materials on an electrical wire bundle.
	Switches and Protective Devices
AM.III.F.S.1.	Inspect electrical wiring, connectors, switches, and protective devices.-
.....	Remove and install an overvoltage or overcurrent protection device.
.....	**Electrical Joining Methods**
AM.II.K.S.5.	Solder an electrical joint and verify security and continuity.

Subject NEW. Fire Protection Concepts and Techniques	
Competency	Interpret fire-protection principles to support the identification and application of aircraft fire-protection components and features in aircraft systems.
Knowledge	**The applicant will be able to:**
.....	Describe basic aircraft fire detection technologies and their operating principles.
.....	Explain reliability concepts used in aircraft fire detection systems, including dual-loop logic and automatic fault-monitoring features.
.....	Describe the purpose and basic function of aircraft fire protection equipment used across airframe and powerplant installations.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
.....	Misinterpreting the purpose of basic fire detection technologies.
.....	Misinterpreting the role of reliability features.
.....	Misidentifying basic fire protection equipment.

Subject NEW. Aircraft Instrumentation	
Competency	Explain how aircraft instruments sense, process, and display information and how maintenance and configuration controls affect accuracy, reliability, and system performance.
Knowledge	**The applicant will be able to:**
	Principles of Instrumentation
AM.II.H.K.4.	Describe the physical principles used in aircraft instruments, including pressure, temperature, position, gyroscopic, magnetic, and electrical.
.....	Explain how sensing mechanisms convert physical inputs into both physical indicator movements and electrical signals for digital displays.
AM.II.H.K.20.	Identify common sources of instrument error and limitations.
	Basic Sensing Mechanisms
.....	Explain how mechanical pressure sensing elements (e.g., Bourdon tubes, bellows, diaphragms) convert pressure into movement for aircraft indications.
.....	Explain how thermocouples, resistance temperature detectors (RTD), and resistance-type sensors generate and transmit data for aircraft indication systems.
.....	Describe how synchros, potentiometers, and transducers generate position, pressure, and movement indications in aircraft systems.
	Instrument Display Fundamentals
.....	Explain the differences between mechanical, analog, and digital displays.
	Instrument Power Fundamentals
.....	Describe pneumatic and electrical power sources used for instruments.
.....	Explain how power source failures affect general instrument operation.
.....	**Care, Handling and Environmental Factors**
.....	Explain proper handling practices for mechanical and electrostatic-sensitive instruments.
	Maintenance and Inspection
	Describe documentation and regulatory requirements for instrument maintenance.
.....	Describe inspection items and criteria commonly applied to aircraft instruments.
.....	Identify common instrument failure indications.
	Software, Firmware and Configuration Awareness
.....	Explain how software and firmware version control affects system configuration, component compatibility, and maintenance accuracy.
.....	Describe how built-in test equipment (BITE) and self-test functions support aircraft indication and system health monitoring.
	Instrument Range Markings
.....	Identify instrument color-coding conventions, their regulatory basis, and the general operational meaning of standard instrument markings.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
.....	Misinterpreting instrument indications or limitations due to human factor influences.
.....	Improper handling of sensitive instruments.
.....	Misinterpretation of power source issues.
.....	Environmental or contamination-related instrument degradation.
.....	Inaccurate or incomplete maintenance, calibration, or documentation.
.....	Software and firmware configuration errors.

Subject B. Aircraft Drawings	
Competency	Interpret aircraft drawings and technical documentation using symbols, dimensions, effectivity, and revision information to determine maintenance requirements and conformity.
Knowledge	**The applicant will be able to:**
AM.I.B.K.1.	Explain the purpose and function of aircraft drawings in maintenance, inspection, and conformity determination.
.....	Describe the care, use, and limitations of drawings, drafting tools, and digital viewing systems.
.....	Describe types of aircraft drawings and their typical uses.
.....	Interpret drawing standards, notes, revisions, zones, and bill of materials information used in aircraft documentation.
.....	Explain common methods of illustration used in aircraft drawings.
.....	Interpret line types used in aircraft drawings.
.....	Interpret symbols used in aircraft drawings, schematics, and system diagrams.
.....	Interpret dimensions, tolerances, scales, and graphical data presented in aircraft drawings, graphs, and charts.
AM.I.B.K.2.	Explain how drawings, blueprints, schematics, and supplemental type certificates (STCs) are used to verify conformity to type design.
AM.I.B.K.3.	Explain how drawings and schematics support the inspection of aircraft systems and components.
.....	Determine the applicability and revision status of drawings for a specific aircraft model and serial number.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.I.B.R.1.	Incorrect interpretation of dimensional tolerances or scale information.
AM.I.B.R.2.	Incorrect interpretation of repair or alteration specification requirements.
AM.I.B.R.3.	Use of drawings or schematics that are not applicable to the aircraft model or serial number.
AM.I.B.R.4.	Use of outdated, superseded, or improperly revised drawings.
.....	Incorrect interpretation of symbols, line types, or illustration methods.
Skills	**The applicant demonstrates the ability to:**
AM.I.B.S.1.	Prepare an isometric sketch of a simple aircraft component to communicate configuration and key features.
AM.I.B.S.3.	Prepare a dimensioned sketch of a simple aircraft component using measurements obtained from the part.

Subject C. Weight and Balance	
Competency	Determine aircraft weight, center of gravity, and required corrections using manufacturer data and appropriate weighing and calculation practices.
Knowledge	**The applicant will be able to:**
AM.I.C.K.1.	Define standard weight and balance terminology.
AM.I.C.K.2.	Describe the purpose of weight and balance and the factors that influence it.
AM.I.C.K.3.	Explain aircraft weighing principles, required conditions, and the factors that affect accurate weight-and-balance measurements.
AM.I.C.K.4.	Calculate arms, moments, moment indexes, and CG.
AM.I.C.K.5.	Interpret weight and CG limits for allowable loading conditions.
AM.I.C.K.6.	Explain the significance of CG in aircraft stability, controllability, and performance.
AM.I.C.K.7.	Compute forward and aft CG positions for adverse loaded conditions.
AM.I.C.K.8.	Determine empty weight and Empty Weight Center of Gravity (EWCG).
AM.I.C.K.9.	Calculate the required ballast to bring the CG within limits.
AM.I.C.K.10.	Explain aircraft jacking principles and the conditions required for safe lifting operations.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.I.C.R.1.	Improper aircraft lifting or jacking practices.
AM.I.C.R.2.	Unsafe aircraft weighing procedures.
AM.I.C.R.3.	Improper scale setup, use, or calibration.
AM.I.C.R.4.	CG-out-of-limits aerodynamic and handling effects.
AM.I.C.R.5.	Excess-weight aerodynamic and structural effects.
Skills	**The applicant demonstrates the ability to:**
AM.I.C.S.3.	Calculate the required ballast and placement to bring the aircraft’s CG within limits.
AM.I.C.S.5.	Perform weight and balance calculations for an aircraft, including empty weight, CG, and changes after equipment installation or removal.
AM.I.C.S.17.	Complete a maintenance record entry documenting a weight and balance change.

Subject F. Safety, Ground Operations, and Servicing	
Competency	Apply protective measures and maintain situational awareness in shop, hangar, and flight line environments. Coordinate aircraft ground operations using appropriate procedures, equipment, and personnel. Service aircraft using appropriate procedures, condition verification, and hazard controls.
Knowledge	**The applicant will be able to:**
	Safety
.....	Explain safety practices and procedures applicable to shop, hangar, and flight line environments.
.....	Describe procedural non-compliance (Failure to Follow Procedures) and its impact on operational safety and regulatory compliance.
AM.I.F.K.6.	Explain how fires start and behave in aviation environments, including combustion principles and ignition-source hazards.
	Describe fire classes and explain how extinguishing agents work and what hazards they present.
	Explain safe selection, use, and inspection of fire extinguishers in aviation environments.
AM.I.F.K.15.	Describe hazardous materials, Safety Data Sheets (SDS), and Personal Protective Equipment (PPE) requirements.
AM.I.F.K.16.	Explain foreign object damage/debris (FOD) concepts and how they affect aircraft operations and safety.
.....	Explain lockout/tagout procedures used to isolate hazardous energy sources during ground operations or maintenance.
	Ground Operations
AM.I.F.K.1.	Explain aircraft towing principles and the factors that ensure safe and coordinated towing operations.
AM.I.F.K.2.	Explain the principles of aircraft securing and the factors that prevent unintended movement of aircraft on the ground.
.....	Explain the communication and coordination principles used during aircraft ground operations.
AM.I.F.K.4.	Explain airport operating safety areas, including the hazards associated with engine operation.
.....	Explain safety and positioning principles for ground support equipment (GSE) used around aircraft.
AM.I.F.K.5.	Explain engine starting concepts for reciprocating, turboprop, turbofan engines, and APUs, including checklist usage and recognition of abnormal starts.
.....	Describe emergency exit and egress systems basics, including general operations principles and precautions.
	Servicing
AM.I.F.K.3.	Explain aircraft fueling and defueling procedures, including damage protection and personal and environmental safety.
AM.I.F.K.9.	Describe aviation gasoline (AVGAS) and jet fuel characteristics.
AM.I.F.K.11.	Explain fuel selection requirements for aviation gasoline (AVGAS) and jet fuels.
.....	Explain fuel contamination identification concepts.
AM.I.F.K.10.	Explain fuel additives, including types, purpose, application, and impact on fuel system performance.

Subject F. Safety, Ground Operations, and Servicing	
AM.I.F.K.7.	Explain fluid checking and servicing requirements for oil, hydraulic, and pneumatic systems, including contamination prevention and safety.
AM.I.F.K.13.	Describe material-handling practices for aircraft maintenance chemicals and consumables, including management, transportation, storage, and use.
AM.I.F.K.14.	Explain parts protection practices to prevent damage, contamination, or undue stress during maintenance and servicing.
.....	Describe aircraft shoring procedures used to support structures during repairs, modifications, or load redistribution.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
	Safety
.....	Foreign object debris (FOD) hazards and loss of situational awareness.
.....	Improper or incomplete lockout/tagout of hazardous energy sources.
	Ground Operations
AM.I.F.R.1.	Improper preparation, communication, or equipment use during aircraft towing.
AM.I.F.R.6.	Checklist noncompliance during start.
	Improper aircraft positioning during engine start.
	Abnormal engine indications during engine start.
	Fire or ignition-source conditions during engine start.
	Improper extinguisher selection or use.
	Oxygen displacement or toxicity hazards.
AM.I.F.R.10.	Improper positioning or operation of ground support equipment.
	Reduced situational awareness around operating engines and moving aircraft.
	Propeller movement during ground handling operations.
	Procedural noncompliance during ground operations.
	Miscommunication or loss of coordination under reduced visibility conditions.
	Servicing
AM.I.F.R.3.	Improper grounding, equipment use, fuel type selection, or contamination during fueling and defueling.
.....	Incorrect or unsafe aircraft shoring practices.
Skills	**The applicant demonstrates the ability to:**
	Ground Operations
AM.I.F.S.3.	Prepare an aircraft for towing.
AM.I.F.S.4.	Direct aircraft movement using appropriate hand signals.
AM.I.F.S.11.	Secure an aircraft.
AM.II.M.S.2.	Inspect a portable fire extinguisher for condition, pressure status, safety seal integrity, accessibility, and serviceability.
	Servicing
AM.I.F.S.5.	Inspect an aircraft fuel system for contamination.
AM.I.F.S.7.	Select an approved fuel for an aircraft.
AM.I.F.S.8.	Prepare an aircraft for fueling.

Subject G. Cleaning and Corrosion Control	
Competency	Clean aircraft using appropriate materials, procedures, and chemical and environmental hazard controls. Identify, assess, and treat aircraft corrosion by applying inspection, removal, and protection practices to maintain structural integrity and prevent deterioration.
Knowledge	**The applicant will be able to:**
.....	**Aircraft Cleaning**
AM.I.G.K.1.	Explain aircraft cleaning methods and their applications.
AM.I.G.K.11.	Describe aircraft cleaners and their safety considerations.
.....	**Corrosion and Corrosion Control**
AM.I.G.K.2.	Explain corrosion theories and causes.
AM.I.G.K.3.	Describe corrosion types and forms.
AM.I.G.K.4.	Identify corrosion-prone areas in aircraft.
AM.I.G.K.5.	Explain corrosion preventive maintenance practices.
AM.I.G.K.6.	Describe corrosion inspection methods and tools, with emphasis on corrosion-prone areas.
AM.I.G.K.7.	Explain corrosion removal and treatment procedures.
AM.I.G.K.8.	Describe corrosion-preventive compounds and their safety considerations.
AM.I.G.K.14.	Explain protective materials used for corrosion control and their application practices.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.I.G.R.1.	Health hazards from exposure to cleaning agents, solvents, paints, and finishing materials.
AM.I.G.R.2.	Ventilation deficiencies during cleaning, corrosion removal, or coating application.
AM.I.G.R.3.	Misidentification or incorrect selection of materials, cleaners, or corrosion-prevention compounds.
AM.I.G.R.4.	Failure to follow Safety Data Sheet (SDS) instructions or use required personal protective equipment (PPE).
AM.I.G.R.5.	Ignition hazards associated with flammable chemicals.
AM.I.G.R.6.	Improper disposal of chemicals, waste materials, or contaminated rags.
Skills	**The applicant demonstrates the ability to:**
	Aircraft Cleaning
.....	Apply aircraft cleaning materials.
	Interpret Safety Data Sheet (SDS) information to identify hazards associated with aircraft cleaning and finishing materials.
	Corrosion and Corrosion Control
AM.I.G.S.2.	Apply corrosion prevention compounds.
AM.I.G.S.5.	Inspect an aircraft compartment for corrosion.

Subject L. Human Factors	
Competency	Explain human factors in aviation maintenance by describing how human and team performance influences safety, decision-making, and error prevention in maintenance operations.
Knowledge	**The applicant will be able to:**
.....	**Introduction to Human Factors**
.....	Describe the role of human factors in aviation maintenance and its impact on safety and error prevention.
.....	Identify common maintenance-related human errors and their consequences.
.....	**Human Error**
.....	Differentiate between slips, lapses, mistakes, and violations in maintenance tasks.
.....	Explain active vs. latent failures using models (e.g., PEAR, SHEL, and Reason's Swiss Cheese).
AM.I.L.K.10.	Identify error-provoking conditions in aviation maintenance.
.....	**Human Performance and Limitations**
.....	Explain how fatigue, circadian rhythm, and shift work influence alertness, judgment, and error likelihood.
.....	Identify signs and effects of stress on performance.
.....	Explain the impact of alcohol, medications, and drugs on human performance and fitness for duty.
.....	**Communication and Teamwork**
.....	Describe effective communication practices during shift turnover, including the transfer of work status and open discrepancies.
.....	Identify common communication barriers and strategies to overcome them.
.....	Describe behaviors that support coordination and teamwork in maintenance operations.
	Describe how checklist use supports effective communication, coordination, and shared situational awareness during maintenance tasks.
.....	**Safety Culture and Reporting**
	Describe the purpose and typical components of an organization's safety management system (SMS) or human factors or safety program.
.....	Explain the purpose of voluntary and mandatory reporting systems and how they support error identification and organizational learning.
AM.I.L.K.3.	Describe the basic purpose of error investigations in maintenance operations.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
.....	Failure to recognize human limitations.
.....	Failure to identify error-provoking conditions.
.....	Inadequate communication or coordination.
.....	Normalization of deviance and unsafe norms.
.....	Underreporting or ineffective error management.

Subject I. Regulations, Maintenance Forms, Records, and Publications	
Competency	Identify and interpret applicable aviation maintenance regulations using appropriate regulatory resources. Complete and interpret maintenance forms and records to provide accurate, complete, and traceable return-to-service documentation. Interpret and apply agency and manufacturer publications, including effectivity and configuration control information.
Knowledge	**The applicant will be able to:**
	Regulations
AM.I.I.K.6.	Define key maintenance-related terminology in 14 CFR part 1 and explain how these terms establish the regulatory basis for maintenance, repair, and alteration activities.
.....	Explain how aviation safety rules define an aircraft’s airworthiness through conformity to type design and a condition for safe operation.
.....	Explain how the aviation safety rules define “airworthiness” in 14 CFR part 3 (see § 3.5) with respect to products, parts, appliances, or materials that may be used on type certificated products.
AM.I.I.K.8.	Describe the Title 14 CFR regulatory framework applicable to aviation maintenance with emphasis on how its structure establishes mechanic authority, limitations, performance rules, and recordkeeping obligations.
.....	Explain principles of regulatory compliance and the consequences of enforcement actions as established in 14 CFR part 13.
.....	Describe the functions of FAA online systems used for airman certification and administrative tasks.
AM.I.I.K.23.	Explain the process for submitting a mechanic's address change as defined in 14 CFR § 65.21.
	Mechanic Privileges, Limitations, and Professionalism
AM.I.I.K.1.	Describe the privileges and limitations of a mechanic certificate as established in 14 CFR part 65.
AM.I.I.K.2.	Explain recent experience requirements and outline the process for reestablishing currency as defined in 14 CFR § 65.83.
.....	Define ethical conduct as it applies to aviation maintenance.
.....	Explain the regulatory consequences of falsification, improper documentation, or performing work beyond one’s qualifications.
.....	Explain the mechanic’s professional responsibility in supporting airworthiness.
	Compliance
.....	Define regulatory compliance as it applies to maintenance.
AM.I.I.K.13.	Explain compliance requirements for manufacturer-specified methods, techniques, and practices.
AM.I.I.K.14.	Explain compliance requirements for manufacturer-specified maintenance and inspection intervals, including when such intervals are mandatory under applicable regulations or airworthiness limitations.
.....	Differentiate between required, recommended, and operator-adopted intervals and methods.
.....	Describe the mechanic’s role in verifying compliance before approving an aircraft for return to service.
	Maintenance Forms and Records
AM.I.I.K.5.	Identify the purpose and use of FAA forms.

Subject I. Regulations, Maintenance Forms, Records, and Publications	
AM.I.I.K.3.	Explain the required content of maintenance and inspection record entries for return to service as established in 14 CFR §§ 43.9 and 43.11.
.....	Explain the required maintenance record entries when an aircraft or component fails an inspection under 14 CFR § 43.11.
.....	Describe regulatory requirements and limitations for operating with inoperative equipment as established in 14 CFR § 91.213, including conditions for deferral.
AM.I.I.K.19.	Explain regulatory requirements related to inoperative equipment as established in 14 CFR §§ 91.7, 91.405, and 91.407.
AM.I.I.K.20.	Describe regulatory requirements for documenting discrepancies in maintenance and inspection records as established in 14 CFR §§ 43.9 and 43.11, including required inoperative-equipment placards under 14 CFR § 91.213.
AM.I.I.K.7.	Describe the criteria and responsibilities for determining whether a repair or alteration is major or minor.
.....	Explain when an aircraft is subject to a 100-hour inspection and the required record entries.
	Publications and Data Sources
AM.I.I.K.9.	Interpret agency publications and guidance materials, including aircraft specifications, TCDSs, ACs, ADs, and the Master Minimum Equipment List (MMEL).
	Explain the purpose, structure, and applicability of ADs.
AM.I.I.K.10.	Explain the purpose and process of obtaining an Alternative Method of Compliance (AMOC) for an AD.
.....	Identify the purpose of SFAR 88 and its relevance to fuel-system safety.
.....	Recognize Critical Design Configuration Control Limitations (CDCCLs) and their role within the Airworthiness Limitations Section (ALS).
AM.I.I.K.11.	Interpret manufacturer technical publications, such as the AMM, SRM, and IPC, to determine procedures, part eligibility, and configuration requirements.
AM.I.I.K.17.	Explain the requirements of 14 CFR § 43.13(a) for selecting and using maintenance methods, techniques, and practices acceptable to the Administrator.
AM.I.I.K.16.	Determine the applicability of approved data for a major repair or major alteration.
AM.I.I.K.12.	Identify FAA databases and resources used to support maintenance, including TCDSs and STCs.
.....	Describe the purpose and structure of Technical Standard Orders (TSOs).
.....	Describe required markings for TSO and PMA articles as established in 14 CFR § 45.15 and how they support configuration control, part eligibility, and conformity.
	Maintenance Documentation and Interpretation
AM.I.I.K.18.	Explain the purpose of safety-critical statements—warnings, cautions, and notes—in maintenance and operating manuals.
.....	Describe ATA iSpec 2200 with emphasis on the ATA chapter numbering.
.....	Explain how to navigate and interpret maintenance manuals (AMM, CMM, FIM, SRM) to select the correct tasks, apply effectivity, and comply with manufacturer instructions.
.....	Explain how to navigate electronic maintenance manuals—search functions, hyperlinks, effectivity filters, and task structures—to locate and interpret the correct maintenance procedures.
	Effectivity and Configuration Control
	Identify the concepts of effectivity and configuration management.

Subject I. Regulations, Maintenance Forms, Records, and Publications	
AM.I.I.K.21.	Define effectivity and interpret “usable on” codes.
AM.I.I.K.22.	Identify documents used to establish the serial number effectivity.
	Maintenance Programs and Continued Airworthiness Concepts
.....	Explain the purpose and regulatory basis of Airworthiness Limitations (AWLs) contained in the Airworthiness Limitations Section of the Instructions for Continued Airworthiness (ICA).
.....	Describe the purpose and structure of the ICA and its role in defining mandatory maintenance requirements.
.....	Describe how reliability-based maintenance concepts support continued airworthiness.
.....	Describe how corrosion-related inspection and maintenance requirements are incorporated into maintenance programs and how they support structural integrity and continued airworthiness.
.....	Describe how different types of maintenance programs support continued airworthiness across various operating environments.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.I.I.R.1.	Incomplete or inaccurate documentation.
AM.I.I.R.2.	Misinterpreting or failing to use the System Description Section (SDS) or other foundational sections.
AM.I.I.R.3.	Complacency during documentation.
AM.I.I.R.4.	Failure to follow published warnings, cautions, or notes.
AM.I.I.R.5.	Incorrect determination of component effectivity for an aircraft or configuration.
AM.II.D.R.4.	Improper selection or use of checklists and maintenance publications.
AM.II.D.R.5.	Inadequate or incomplete maintenance record documentation.
Skills	**The applicant demonstrates the ability to:**
AM.I.I.S.6.	Locate applicable FAA aircraft specifications and Type Certificate Data Sheets (TCDS) for an aircraft, engine/APU, or propeller.
AM.I.I.S.11.	Locate supplemental type certificate(s) (STC) applicable to an aircraft.
AM.I.I.S.4.	Complete a maintenance record entry documenting compliance with a recurring AD for an airframe, engine, appliance, or propeller.
AM.I.I.S.7.	Complete an aircraft maintenance record entry for return to service.
AM.I.I.S.8.	Determine the applicability of an AD for an aircraft.
AM.I.I.S.3.	Determine the inspection status of an aircraft using its maintenance records.
AM.I.I.S.10.	Use a manufacturer's illustrated parts catalog (IPC) to identify a replacement part.
AM.II.D.S.3.	Enter the results of a 100-hour inspection in a maintenance record.

Subject K. Inspection Concepts and Techniques	
Competency	Apply inspection requirements using applicable regulations, publications, and methods; evaluate findings and document discrepancies.
Knowledge	**The applicant will be able to:**
.....	**Inspection Concepts**
.....	Explain the purpose and benefits of aircraft inspections.
AM.II.D.K.8.	Identify and interpret CFRs applicable to inspection and airworthiness.
AM.II.D.K.1.	Describe annual, 100-hour, and progressive inspections under 14 CFR part 91.
.....	Explain how inspection programs are organized and how they support continued airworthiness.
AM.II.D.K.4.	Identify life-limited parts and their replacement intervals in accordance with applicable requirements.
AM.II.D.K.5.	Explain the purpose and triggers for special inspections.
.....	Identify publications and data sources required to plan and perform inspections.
.....	Describe the regulatory requirements for returning an aircraft to service following an inspection.
.....	**Inspection Techniques**
AM.I.K.K.3.	Describe nondestructive testing (NDT) methods.
.....	Explain the advantages, limitations, and appropriate applications of each NDT method.
.....	Describe personnel qualification requirements for NDT.
AM.I.K.K.5.	Describe inspection tools and how they support access and defect detection.
.....	Explain the purpose and process of damage mapping using appropriate documentation and manufacturer limits.
.....	Describe tasks that require special inspection or independent verification.
.....	Interpret failed inspection entries and deferred discrepancies to assess their impact on airworthiness and required maintenance actions.
.....	Explain inspection decision-making approaches used to evaluate abnormal conditions and determine when further investigation is required.
.....	Describe the role of inspection techniques within system-specific inspections.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
	Inspection Concepts
.....	Incorrect or incomplete documentation of inspection results.
.....	Use of outdated or incorrect methods, techniques, and practices.
.....	Failure to identify conditions requiring special inspections.
.....	Inadequate review of aircraft records.
	Inspection Techniques
AM.I.K.R.4.	Improper selection or application of inspection methods or tools.
.....	Failure to recognize discrepancies requiring additional evaluation or higher-level technical guidance.
.....	Inadequate documentation of discrepancies.
.....	Incorrect interpretation of inspection requirements for critical tasks or tasks requiring independent verification.

Subject NEW. Troubleshooting Concepts and Techniques	
Competency	Isolate faults, interpret data and publications, verify discrepancies, and confirm corrective action using systematic troubleshooting methods.
Knowledge	**The applicant will be able to:**
.....	Explain the purpose and principles of systematic troubleshooting.
.....	Differentiate between symptoms and root causes and describe how incorrect assumptions can lead to unnecessary maintenance or maintenance-induced failures.
.....	Describe how interactions within and between aircraft systems can lead to secondary effects or failures.
.....	Explain how to use manufacturer troubleshooting resources.
.....	Explain how aircraft effectivity, configuration changes, and maintenance history awareness support troubleshooting decisions.
.....	Explain the importance of verifying reported discrepancies.
.....	Describe common diagnostic tools and techniques.
.....	Explain how human factors influence troubleshooting decisions and fault-isolation accuracy.
.....	Describe methods for confirming corrective action.
.....	Explain how troubleshooting integrates with inspection findings.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
.....	Incorrect fault isolation.
.....	Misinterpretation of symptoms.
.....	Incorrect use or interpretation of troubleshooting data.
.....	Failure to verify corrective action.

Airman Certification Standards – Airframe

Current Code	Subject
A.	Metallic Structures
B.	Nonmetallic Structures
New	Aircraft Painting and Finishing
New	Windows
C.	Flight Controls
E.	Landing Gear Systems
F.	Hydraulic Systems
New	Pneumatic Systems
J.	Aircraft Fuel Systems
O.	Water and Waste Systems
K.	Airframe Electrical Systems
New	Lighting Systems
H.	Flight Instruments, Displays, and Alerting Systems
I.	Communications
New	Navigation
G.	Air Conditioning and Pressurization
L.	Ice and Rain Control Systems
M.	Airframe Fire Protection Systems
New	Oxygen Systems
N.	Rotorcraft Systems

Subject A. Metallic Structures	
Competency	Perform basic sheet-metal layout, fabrication, fastening, and repair tasks.
Knowledge	**The applicant will be able to:**
	Materials and Treatments
AM.II.A.K.6.	Explain the effects of heat treatment on aluminum alloy properties and structural suitability.
AM.II.A.K.3.	Describe the properties and applications of common aircraft-grade aluminum alloys.
	Structural Principles
AM.II.A.K.17.	Explain fundamental aircraft structural principles, including load paths, stress distribution, and fatigue behavior.
	Fasteners and Riveting
AM.II.A.K.5.	Explain the principles of aircraft fastening and riveting used to maintain structural integrity.
	Layout and Fabrication
AM.II.A.K.7.	Describe rivet layout concepts used in planning and executing structural repairs.
AM.II.A.K.4.	Explain sheet metal layout and marking concepts used to transfer measurements and establish accurate cut and bend lines.
.....	Describe the operation and capabilities of metal forming tools used in aircraft fabrication.
	Sheet Metal Repair Concepts
.....	Explain sheet metal repair concepts, including patching, bending, and forming.
AM.II.A.K.9.	Describe safety considerations associated with sheet metal fabrication and repair.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.A.R.1.	Structural degradation from incorrect fastener selection or installation.
.....	Misalignment or improper fit caused by inaccurate layout or marking.
.....	Material weakening or cracking caused by improper bending or forming.
.....	Undetected structural defects due to inadequate inspection of metallic components during a repair.
.....	Personal injury or component damage from improper use of cutting, drilling, or forming tools.
Skills	**The applicant demonstrates the ability to:**
	Fasteners and Riveting
AM.II.A.S.1.	Install and remove aircraft rivets.
AM.II.A.S.12.	Prepare sheet metal for flush riveting by countersinking or dimpling as appropriate.
AM.II.A.S.4.	Select and install special-purpose fasteners used in aircraft structures.
	Inspection and Damage Assessment
AM.II.A.S.3.	Determine the extent of damage and identify whether a metallic structure is repairable using applicable standards or maintenance procedures.
	Layout and Repairs
AM.II.A.S.11.	Create a rivet layout.
AM.II.A.S.13.	Perform a patch to repair a damaged aluminum component.

Subject B. Nonmetallic Structures	
Competency	Inspect and perform basic repairs on nonmetallic aircraft structures.
Knowledge	**The applicant will be able to:**
.....	**Wood, Fabric, and Coatings**
AM.II.B.K.1.	Explain the role of wood, fabric, and coatings in aircraft construction.
AM.II.B.K.2.	Describe the effects of humidity, temperature, and UV exposure on wood, fabric, and coating materials.
AM.II.B.K.3.	Identify the wood types and fabric materials used in wood and fabric structures.
AM.II.B.K.5.	Describe common deterioration mechanisms in wood and fabric structures and basic inspection tools.
AM.II.B.K.11.	Describe safety practices for handling adhesives, dopes, solvents, and coating materials.
	Composites
AM.II.B.K.20.	Explain how fiber, core, and matrix properties influence material selection.
.....	Explain how ply orientation, stacking sequence, and laminate design affect structural behavior.
AM.II.B.K.19.	Identify common composite defects.
	Explain how composite defects affect structural performance.
AM.II.B.K.18.	Describe common inspection methods and applications for composite structures.
AM.II.B.K.21.	Describe how storage, moisture, and shelf life affect composite materials.
AM.II.B.K.22.	Interpret composite repair data—including repair limits, material requirements, and allowable fasteners—to determine repair constraints and applicability.
.....	Explain how bonding variables influence repair integrity.
AM.II.B.K.28.	Describe hazards and safety practices associated with composite materials.
.....	Describe how composite laminates fail under different loading conditions.
.....	Explain the core structure behavior in sandwich panels.
.....	Explain how cure variables, including environmental factors, affect composite repair strength.
.....	Explain the principles of lightning protection in composite structures.
.....	Describe environmental effects on composite performance and repairability.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.B.R.1.	Incorrect selection or application of adhesives or fasteners for composite structures.
AM.II.B.R.3.	Exposure to hazardous materials used in composite repair processes.
AM.II.B.R.4.	Improper storage or handling of composite materials.
AM.II.B.R.5.	Incorrect measuring or mixing of adhesives, resins, or curing agents used in composite repair.
AM.II.B.R.7.	Use of composite materials beyond the listed shelf life.
Skills	**The applicant demonstrates the ability to:**
AM.II.B.S.1.	Select appropriate fasteners for composite structures.
AM.II.B.S.2.	Inspect composite structures for damage, deterioration, and other conditions that may affect airworthiness.
AM.II.B.S.8.	Conduct a tap test or other basic inspection method to determine damage.
AM.I.G.S.8.	Prepare a composite surface for coating applications using basic cleaning and surface preparation techniques.

Subject NEW. Aircraft Painting and Finishing	
Competency	Prepare aircraft surfaces, apply finishing materials, and inspect finished coatings.
Knowledge	**The applicant will be able to:**
	Foundational Concepts
.....	Explain the purpose of aircraft finishes and their roles in corrosion protection, maintainability, and appearance.
AM.I.G.S.14.	Identify common types of aircraft finishes.
AM.I.G.S.9.	Identify common finishing materials and compatible thinners.
AM.I.G.K.23.	Describe common finishing materials and their uses for metal and composite surfaces.
.....	**Surface Preparation Concepts**
AM.I.G.K.17.	Explain surface preparation requirements for coating metal and composite surfaces.
.....	Explain the purpose and principles of masking in aircraft finishing.
.....	Identify common masking materials and describe factors that affect masking performance.
.....	**Application and Inspection Concepts**
AM.I.G.K.21.	Describe common coating defects and general inspection considerations for finished aircraft surfaces.
AM.I.G.K.24.	Explain how coating weight affects aircraft control surface balance and performance.
.....	**Regulatory and Documentation Awareness**
AM.I.G.K.20.	Identify regulatory requirements for aircraft identification, registration markings, and placards following refinishing.
AM.I.G.S.12.	Identify the coating systems specified for aircraft surfaces in manufacturer data.
.....	**Environmental and Safety Concepts**
AM.I.G.K.22.	Explain environmental and safety considerations when working with finishing materials.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.I.G.R.8.	Surface preparation defects for finishing materials.
.....	Chemical exposure hazards from finishing materials.
.....	Ventilation deficiencies during finishing or chemical use operations.
.....	Flammable chemical hazards.
.....	Hazards associated with chemical waste handling and disposal.
Skills	**The applicant demonstrates the ability to:**
AM.I.G.S.4.	Inspect a finished surface for visible defects.
AM.I.G.S.10.	Mask a surface for coating applications using standard layout and masking techniques.

Subject NEW. Windows	
Competency	Inspect and maintain aircraft transparent plastic windows.
Knowledge	**The applicant will be able to:**
.....	Describe the properties and physical characteristics of transparent plastics used in aircraft.
.....	Explain the advantages, limitations, and typical applications of transparent plastics in windshields, side windows, and canopies.
AM.II.B.K.23.	Identify common thermoplastic material defects found during inspection.
.....	Explain how specific defect types affect window serviceability and structural integrity.
AM.II.B.K.24.	Describe proper storage and handling requirements for thermoplastic materials to prevent contamination, distortion, or degradation.
AM.II.B.K.25.	Explain installation principles for thermoplastic windows.
AM.II.B.K.26.	Describe care and maintenance practices for aircraft windows.
AM.II.B.K.27.	Explain principles of temporary and permanent window repairs in accordance with appropriate data and FAA guidance.
AM.II.B.K.28.	Identify safety practices and precautions when working with aircraft windows.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
.....	Improper storage or handling of transparent plastics.
.....	Incorrect fit, mounting, or stress distribution of transparent plastic windows or panels.
.....	Use of incorrect materials or improper maintenance techniques.
.....	Inadequate inspection practices or unsafe handling of transparent plastic windows or panels.
Skills	**The applicant demonstrates the ability to:**
AM.II.B.S.4.	Inspect transparent plastic windshields and windows for condition and serviceability and document the findings.
.....	Clean, polish, and assess a window for continued serviceability.
.....	Measure and verify fit and mounting clearances for transparent plastic panel replacement.

Subject C. Flight Controls	
Competency	Inspect, maintain, and adjust aircraft flight control systems.
Knowledge	**The applicant will be able to:**
	General
AM.II.C.K.11.	Describe the purpose of aircraft flight control systems and the general principles by which pilot inputs are transmitted to control surfaces.
	Aileron Systems
.....	Describe aileron system components and their function.
.....	Explain the operating principles of aileron systems.
	Rudder Systems
.....	Describe rudder system components and their function.
.....	Explain the operating principles of rudder systems.
	Elevator and Stabilator Systems
.....	Describe elevator and stabilator components and their function.
.....	Explain the operating principles of elevator and stabilator systems.
	High-Lift and Lift-Dump Devices
.....	Identify flap and leading-edge device types.
.....	Explain the operating principles of flap and leading-edge systems.
.....	Describe the spoiler and speed brake system components and their function.
	Trim and Tab Systems
.....	Identify trim and tab system types.
.....	Describe how trim systems reduce pilot workload and maintain control balance.
.....	Explain the operating principles of trim and tab systems.
	Mechanical Linkage and Control Transmission
AM.II.C.K.1.	Explain mechanical flight control linkage components.
.....	Explain the alignment, security, and freedom-of-movement requirements.
	Position Indication Systems
.....	Describe flap, trim, and control surface position indication systems.
.....	Explain how mechanical movement is converted into an indication.
.....	Identify common failure modes and indicators of improper rigging.
	Flight Control Rigging
AM.II.C.K.9.	Explain the principles of flight control, rigging, and symmetry.
AM.II.C.K.10.	Describe the relationship between rigging, control balance, and flutter.
.....	Identify specialized tools and measurement techniques.
	Fly-by-wire Systems
.....	Describe the operating principles of fly-by-wire control systems.
.....	Identify major components of fly-by-wire systems.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.C.R.1.	Incorrect cable tension.
AM.II.C.R.2.	Improper control-surface alignment or binding.
AM.II.C.R.3.	Unstable or mismatched lifting and support configurations during component positioning.
AM.II.C.R.5.	Incorrect use or calibration of cable tension measuring equipment.

Subject C. Flight Controls	
Skills	**The applicant demonstrates the ability to:**
AM.II.C.S.3.	Inspect a primary flight control surface for condition and security.
AM.II.C.S.5.	Inspect primary flight control cables for condition and security.
AM.II.C.S.10.	Inspect a secondary flight control for condition, free movement, and proper travel.
AM.II.C.S.6.	Adjust a primary flight control cable for proper rigging and security.
AM.II.C.S.7.	Adjust a push-pull flight control system for proper travel and alignment.
AM.II.C.S.8.	Check a flight control surface for proper balance.
.....	Inspect a bellcrank for condition and function.

Subject E. Landing Gear Systems	
Competency	Inspect, maintain, and troubleshoot aircraft landing gear systems.
Knowledge	**The applicant will be able to:**
	Landing Gear System Fundamentals
AM.II.E.K.1.	Compare landing gear system configurations and types used in general aviation and transport-category aircraft.
AM.II.E.K.2.	Identify landing gear system components.
.....	Explain the function and operation of the landing gear system components.
	Landing Gear Doors and Sequencing
.....	Explain the landing gear door function, actuation methods, and integration with gear sequencing.
	Landing Gear System Schematics and Logic
.....	Interpret landing gear system schematics to trace hydraulic, electrical, and mechanical logic pathways.
	Landing Gear System Servicing and Inspection
AM.II.E.K.3.	Describe landing gear servicing requirements related to oleo strut inflation and lubrication.
AM.II.E.K.4.	Describe landing gear inspection requirements related to leaks, wear, corrosion, and structural integrity.
	Extension and Retraction Systems
.....	Explain the purpose, principles, and methods of landing gear extension and retraction systems.
.....	Identify extension and retraction system components.
.....	Explain the function and operation of extension and retraction system components.
	Wheels and Brakes
AM.II.E.K.9.	Identify aircraft wheel assembly components.
.....	Explain the function of aircraft wheel assembly components.
.....	Identify brake system components.
.....	Explain the function and operation of brake system components.
AM.II.E.K.7.	Describe brake assembly servicing requirements and associated safety considerations.
.....	Describe wheel and brake inspection criteria related to wear, corrosion, and overheating.
AM.II.E.K.8.	Explain the anti-skid system's purpose, function, and operational principles.
.....	Identify anti-skid system components.
.....	Explain the function and operation of the anti-skid system.
.....	Interpret anti-skid system schematics to trace signal pathways and logic.
	Tires
.....	Identify aircraft tire types, construction features, and components.
.....	Explain tire inflation principles and servicing considerations.
AM.II.E.K.10.	Describe tire storage and care requirements.
.....	Describe tire inspection criteria and associated safety considerations.
	Position Indication and Warning Systems
.....	Describe the landing gear position indication system's purpose, configurations, and integration with flight deck annunciators and alerts.

Subject E. Landing Gear Systems	
.....	Explain how mechanical and electrical inputs are translated into indication and warning outputs.
AM.II.E.S.22.	Identify landing gear position and warning system components.
.....	Explain the function and operation of the landing gear position indication and warning system components.
.....	Explain the purpose and function of weight-on-wheels systems and safety interlocks.
.....	Interpret landing gear position and warning system schematics to trace logic and signal pathways.
AM.II.E.K.6.	Describe landing gear position and warning system inspection, operational check, and troubleshooting requirements.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
.....	Wheel assembly thermal exposure hazards.
AM.II.E.R.6.	Hydraulic and electrical isolation hazards in landing gear systems.
AM.II.E.R.5.	Oleo strut servicing and pressurization hazards.
.....	Landing gear sensor and connector contamination or corrosion hazards.
.....	Tire inflation pressure and containment hazards.
Skills	**The applicant demonstrates the ability to:**
	Landing Gear
AM.II.E.S.1.	Inspect landing gear for leaks, wear, corrosion, and structural integrity.
	Lubricate landing gear.
AM.II.E.S.9.	Service a landing gear shock strut.
.....	Remove and replace the wheel assembly.
	Extension and Retraction
AM.II.E.S.6.	Troubleshoot a gear extension or retraction fault.
	Wheels and Brakes
AM.II.E.S.12.	Remove and install a brake assembly.
AM.II.E.S.27.	Inspect a brake assembly to determine serviceability.
AM.II.E.S.8.	Remove and install brake lining(s).
AM.II.E.S.10.	Bleed and service a hydraulic brake system.
AM.II.E.S.7.	Inspect a wheel assembly to determine serviceability.
AM.II.E.S.11.	Troubleshoot a hydraulic brake system fault.
	Tires
AM.II.E.S.13.	Inspect a tire for wear, damage, and serviceability.
.....	Service a tire for proper inflation.
	Steering
AM.II.E.S.17.	Inspect a nose-wheel shimmy damper for serviceability.
	Position Indication and Warning Systems
AM.II.E.S.24.	Inspect weight-on-wheels and position sensors.
AM.II.E.S.23.	Troubleshoot a landing gear position or warning system fault.

Subject F. Hydraulic Systems	
Competency	Inspect and maintain aircraft hydraulic systems.
Knowledge	**The applicant will be able to:**
AM.II.F.K.1.	Describe hydraulic fluid types, properties, and compatibility considerations.
AM.II.F.K.8.	Explain material compatibility considerations between hydraulic fluids and hoses, seals, gaskets, and fittings.
AM.II.F.K.2.	Compare hydraulic system design configurations and operational differences between general aviation and transport-category aircraft.
.....	Identify hydraulic system components.
.....	Explain the function of hydraulic system components within system operation.
.....	Interpret hydraulic system schematics to trace fluid flow and component interaction.
AM.II.F.K.4.	Describe hydraulic system maintenance requirements, including inspection, servicing, functional checks, and troubleshooting.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.F.R.3.	Hydraulic fluid handling hazards.
AM.II.F.R.4.	Hydraulic fluid and material compatibility hazards.
AM.II.F.R.1.	Hydraulic component servicing hazards.
AM.II.F.R.2.	Hydraulic system pressure hazards.
Skills	**The applicant demonstrates the ability to:**
AM.II.F.S.1.	Determine the appropriate hydraulic fluid.
AM.II.F.S.4.	Remove and install a hydraulic component.
AM.II.F.S.6.	Service a hydraulic system filter.
AM.II.F.S.7.	Service a hydraulic system accumulator.
AM.II.F.S.8.	Service a hydraulic system reservoir.
AM.II.F.S.11.	Purge air from a hydraulic system.
AM.II.F.S.13.	Inspect a hydraulic system for leaks.
.....	Conduct a functional check of a hydraulic system.
AM.II.F.S.3.	Remove and replace seals and backup rings.

Subject NEW. Pneumatic Systems	
Competency	Inspect and maintain aircraft pneumatic systems.
Knowledge	**The applicant will be able to:**
AM.II.F.K.5.	Compare pneumatic system types and their applications across various aircraft categories.
.....	Identify pneumatic system components.
.....	Explain the function of pneumatic system components within system operation.
AM.II.F.K.6.	Describe pneumatic system maintenance requirements, including inspection, servicing, functional checks, and troubleshooting.
.....	Interpret pneumatic system schematics to trace airflow paths and component interaction.
.....	Describe emergency pneumatic landing gear extension system components and operation.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.F.R.1.	Pneumatic component servicing and disassembly hazards.
AM.II.F.R.2.	Pneumatic system pressure hazards.
Skills	**The applicant demonstrates the ability to:**
AM.II.F.S.13.	Inspect a pneumatic system connection for leakage.

Subject J. Aircraft Fuel Systems	
Competency	Inspect, maintain, and troubleshoot aircraft fuel systems.
Knowledge	**The applicant will be able to:**
	Fuel Systems Fundamentals
AM.II.J.K.1.	Describe common aircraft fuel system types and operational principles.
AM.II.J.K.2.	Describe the purpose and operation of common fuel system components.
	Fuel Tanks and Tank Systems
AM.II.J.K.3.	Describe aircraft fuel tank types and structural integration within the airframe.
.....	Explain fuel tank and fuel cell segmentation, including the purpose of baffles, collector cells, and compartmentalization in maintaining fuel supply and stability.
.....	Describe tank venting systems and surge tank functions used to maintain pressure balance and prevent fuel spillage.
	Distribution and Transfer
AM.II.J.K.4.	Describe fuel flow paths from tanks to engines and auxiliary power units.
AM.II.J.K.5.	Explain gravity-feed and pump-assisted fuel transfer principles, including flow paths, pressure sources, and manual transfer considerations.
.....	Explain the automatic and semi-automatic fuel transfer logic used during ground servicing and in-flight balancing on aircraft equipped with fuel transfer control systems.
.....	Identify the automatic shutoff and transfer-triggering conditions used in fuel transfer and balancing systems.
	Refueling and Defueling
.....	Describe pressure refueling system operation, including valve sequencing, automatic shutoff features, and fuel level control.
	Describe over-wing (gravity) refueling methods and associated safety considerations.
.....	Describe defueling operations and associated safety considerations.
	Fuel Jettison Systems
AM.II.J.K.6.	Describe the purpose and regulatory requirements of fuel jettison systems.
	Fuel Quantity Indicating Systems
AM.II.J.K.9.	Describe fuel quantity indicating system types and operational principles.
.....	Explain fuel quantity system calibration concepts and common error sources.
.....	Describe fuel quantity indication integration with refuel panel controls.
.....	Describe the installation considerations and configuration requirements for fuel quantity transmitters.
.....	Explain the purpose of operational checks for fuel quantity transmitters and the conditions that affect transmitter accuracy.
	Maintenance and Safety
AM.II.J.K.8.	Describe fuel system inspection and operational check requirements.
.....	Identify hazards and regulatory requirements associated with fuel tank entry.
.....	Identify the purpose of CDCCLs and their function in maintaining fuel-system configuration integrity.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.J.R.1.	Improper fuel system maintenance.
AM.II.J.R.2.	Fuel system contamination.

Subject J. Aircraft Fuel Systems	
AM.II.J.R.3.	Fuel spills and improper fuel handling.
AM.II.J.R.4.	Fuel tank entry hazards, including atmospheric, structural, and regulatory risks.
AM.II.J.R.5.	Incorrect or unsafe defueling practices.
Skills	**The applicant demonstrates the ability to:**
AM.II.J.S.2.	Inspect a fuel tank or fuel cell system for condition, leaks, and proper installation.
AM.II.J.S.7.	Inspect fuel system sumps to assess fuel quality for contamination.
AM.II.J.S.8.	Service a fuel system strainer or filter for condition and serviceability.
AM.II.J.S.5.	Inspect fuel valves and selector mechanisms for proper operation.
AM.II.J.S.9.	Inspect a fuel quantity indicating system for condition, security, and proper installation.
AM.II.J.S.17.	Remove and install a fuel quantity transmitter and verify proper operation.
AM.II.J.S.18.	Troubleshoot a fuel quantity indicating system.
AM.II.J.S.3.	Troubleshoot fuel system malfunctions, including flow, pressure, and valve-related discrepancies, using wiring diagrams and appropriate data.

Subject O. Water and Waste Systems	
Competency	Identify potable water and lavatory waste system components, explain their operation, and apply regulatory and inspection requirements for sanitation, contamination prevention, and continued airworthiness.
Knowledge	**The applicant will be able to:**
	Potable Water Systems
AM.II.O.K.1.	Identify potable water system components and describe their functions.
.....	Explain the potable water system operating principles.
	Waste Disposal (Lavatory) Systems
AM.II.O.K.2.	Describe lavatory waste system components and their function.
.....	Explain the lavatory waste system operating principles.
.....	Summarize regulatory requirements applicable to potable water and lavatory waste systems.
AM.II.O.K.3.	Describe inspection requirements for water and waste systems to ensure regulatory compliance.
.....	Explain servicing considerations that prevent contamination, leaks, and blockages in water and waste systems.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.O.R.1.	Contamination of potable water or waste systems.
.....	Exposure to contaminated water, waste fluids, or sanitation chemicals.

Subject K. Airframe Electrical Systems	
Competency	Inspect, maintain, and troubleshoot airframe-associated electrical system components.
Knowledge	**The applicant will be able to:**
.....	Describe GCU functions, including voltage and frequency regulation, load sharing, and fault isolation.
AM.II.K.K.10.	Describe lightning protection principles and bonding requirements for airframe structures.
	System Troubleshooting and Integration
.....	Interpret airframe electrical schematics to identify component locations and circuit paths.
.....	Analyze how wiring, grounding, or component installation errors affect airframe electrical system performance.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
	Improper isolation of power buses with multiple power sources.
Skills	**The applicant demonstrates the ability to:**
.....	Determine the energy state of two or more buses in a multi-bus aircraft power distribution system.
.....	**External Power and Ground Handling**
AM.I.F.S.2.	Connect and disconnect an external power unit.
.....	Inspect external power receptacles for condition and security.
AM.II.I.S.6.	Inspect coaxial cable routing, support, and termination for security and damage.
	System Troubleshooting and Integration
AM.III.F.S.12.	Troubleshoot airframe electrical circuits using wiring diagrams, component locations, and multimeters to identify faults.

Subject NEW. Lighting Systems	
Competency	Inspect and maintain aircraft lighting systems.
Knowledge	**The applicant will be able to:**
AM.II.K.K.12.	Describe the types and functions of airframe lighting systems.
	Identify the function and regulatory requirements for interior and exterior lighting.
	Identify the components used to control non-incandescent lighting systems.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
	Incorrect lamp types, wattage, voltage, or incompatible LED modules.
	Exposure to high-voltage strobe light systems.
	Improper handling of lighting components.
	Electromagnetic interference affecting lighting system operation, including interference from high-intensity radiated fields (HIRF).
Skills	**The applicant demonstrates the ability to:**
AM.II.K.S.14.	Remove and install aircraft lighting components and verify operation.
	Check anti-collision, position, and landing lights for proper operation.
	Inspect aircraft lighting assemblies, lenses, mounts, wiring, and connectors for condition, security, and serviceability.

	Subject H. Flight Instruments, Displays, and Alerting Systems
Competency	Inspect, maintain, and troubleshoot aircraft instruments and alerting and display systems.
Knowledge	**The applicant will be able to:**
	Annunciator and Alerting Systems
AM.II.H.K.1.	Describe the function and operation of aircraft warning, caution, and advisory annunciation systems.
	Describe the purpose and function of airframe-related indication and annunciation devices (e.g., gear position lights, door/cargo indicators, anti-ice indicators).
AM.II.H.K.17.	Identify EICAS and ECAM functions and the basic message prioritization and alerting logic used in aircraft system indications.
	Attitude Instruments
AM.II.H.K.7.	Describe the operation of pneumatic and electrically driven attitude gyro instruments.
	Describe attitude indicating instruments.
.....	Explain system-level errors affecting attitude instruments, including precession, misalignment, and power source failures.
	Pitot-Static and Air Data Instruments
AM.II.H.K.10.	Describe the pitot-static system components and operation.
.....	Recognize system-level instrument, display, and alerting errors that can result from incorrect or failed data sources, power issues, or supporting subsystem faults.
AM.II.H.K.19.	Interpret static system leak-test requirements as specified in 14 CFR § 91.411 and part 43, appendix E.
.....	Describe alternate static source operation and its effects.
	Pneumatic Support Systems
AM.II.H.K.9.	Describe pneumatic system components and their role in flight instrument operation.
.....	Identify indicators of system-level failures, such as contamination, pressure anomalies, or regulator malfunction.
.....	Explain system-specific inspection and maintenance requirements for pneumatic filters, hoses, and fittings.
	Stall Warning and Angle of Attack Systems
AM.II.H.K.21.	Describe the purpose and function of stall warning and angle of attack systems.
.....	Identify the components and operating principles of stall warning and AOA systems.
.....	Explain common system-level errors, failure indications, and their operational effects.
.....	Describe inspection, adjustment, and functional test requirements for stall warning and AOA systems.
	Electronic Displays and Integrated Avionics
AM.II.H.K.16.	Describe the major components and functions of EFIS, PFD/MFD, and integrated flight display systems.
.....	Explain EICAS and ECAM message types and built-in test functions.
AM.II.H.K.13.	Explain flight display data sources.
.....	Explain software and firmware effectivity requirements and configuration control practices for integrated display systems.
AM.II.H.K.15.	Describe BITE and reversionary modes for flight displays.

Subject H. Flight Instruments, Displays, and Alerting Systems	
	Aircraft Bonding, Grounding and Protection
AM.II.H.K.14.	Identify electrostatic-sensitive instrument components and describe proper handling practices to prevent damage or signal degradation.
.....	Describe lightning protection principles and electromagnetic shielding requirements as they relate to instrument system accuracy, wiring integrity, and data signal protection.
AM.II.H.K.23.	Explain how improper bonding affects instrument system reliability, including noise susceptibility, erratic indications, and grounding path failures.
	Instrument Removal, Installation and Handling
AM.II.H.K.24.	Describe proper removal and installation procedures for flight instruments and display units.
.....	Explain the plumbing, electrical, and pitot-static connection requirements.
.....	Identify torque, sealing, and leak-prevention considerations.
.....	Explain safe handling practices for gyros, ESD-sensitive components, and electronic flight displays (e.g., LCD/LED/CRT units).
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.H.R.1.	Improper cleaning, pressurization, or handling techniques that damage flight instruments or display components.
AM.II.H.R.2.	Unresolved or misdiagnosed intermittent annunciator or alerting indications affecting system reliability or airworthiness.
AM.II.H.R.3.	Improper handling of electrostatic-sensitive devices or components.
AM.II.H.R.5.	Incorrect performance of pitot-static, air data, or stall warning/AOA inspections or tests.
.....	Incorrect software or firmware effectivity during component installation.
Skills	**The applicant demonstrates the ability to:**
	Pneumatic System Diagnostics
AM.II.H.S.7.	Troubleshoot pneumatic system faults.
	Stall Warning and Angle of Attack Systems
.....	Inspect a stall warning device for condition, security, and installation.
	Check a stall warning or angle-of-attack system and verify proper operation.
	Air Data and Attitude Instruments
AM.II.H.S.4.	Set and verify barometric pressure on an altimeter.
AM.II.H.S.1.	Conduct a static system leak test per 14 CFR § 91.411 and verify compliance with part 43, appendix E (a).
	Flight Instrument and Component Inspection
AM.II.H.S.10.	Inspect pneumatic instrument system filters, hoses, and regulators for serviceability.
AM.II.H.S.12.	Inspect a static port for condition.
	Instrument Markings and Installation
AM.II.H.S.5.	Verify proper range markings on a flight instrument.
AM.II.H.S.2.	Install a flight instrument and verify correct bonding, plumbing, and electrical connections.

Subject I. Communications	
Competency	Inspect and maintain aircraft communication systems.
Knowledge	**The applicant will be able to:**
	Radio Principles
AM.II.I.K.1.	Describe radio operating principles, including FM, AM, and SSB modulation characteristics.
	Radio Communications System Components
AM.II.I.K.2.	Identify radio communication system components used in aircraft communication systems.
.....	Describe the functions of radio communication system components within aircraft communication systems.
	Communication System Operation and Interpretation
.....	Interpret communication system block diagrams and schematics to support system understanding.
AM.II.I.K.3.	Describe communication antenna types and installation considerations related to placement, structural integrity, water intrusion, bonding, and signal integrity.
.....	Explain the purpose of antenna ground planes and the importance of proper bonding for communication system integrity.
	Communication Procedures and Protocols
.....	Describe standard aviation radio phraseology and protocols used for aircraft communications.
	Communication Systems
AM.II.I.K.5.	Describe the purpose and operational functions of HF, VHF, and SATCOM communication systems.
.....	Describe installation and inspection considerations that support the proper operation of aircraft communication systems.
	Audio and Interphone Systems
AM.II.I.K.4.	Describe the purpose, components, and functional differences among audio panels, interphone systems, and intercom systems.
	Digital Communication and Networking
AM.II.I.K.6.	Define basic digital communication concepts used in aircraft systems.
.....	Explain the basic purpose of digital and analog data buses and how they support information transfer between aircraft components and on-board systems.
	Emergency and Surveillance Systems
AM.II.I.K.7.	Describe the purpose, operation, and system integration of emergency locator transmitters (ELTs).
AM.II.I.K.21.	Describe the aircraft transponder system's purpose, operational types, major components, and operating principles.
.....	Describe the purpose, activation method, and system integration of underwater locator beacons (ULBs).
.....	Describe the purpose, recording functions, and crash-survivable features of cockpit voice recorders (CVRs).
.....	Describe the purpose, recorded parameters, and crash-survivable features of flight data recorders (FDRs).
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.I.R.1.	Unintended activation of COSPAS–SARSAT emergency beacons.

Subject I. Communications	
AM.II.I.R.4.	Improper installation, damage, or misalignment of communication antennas.
.....	Exposure of personnel to radio frequency energy during communication system testing.
.....	Transmission of radio signals without an antenna connected.
	Improper connection, operation, or testing of transponder or altitude-reporting equipment.
Skills	**The applicant demonstrates the ability to:**
AM.II.I.S.5.	Verify VHF communication system operation using aircraft controls and required test procedures.
AM.II.I.S.8.	Inspect the ELT and verify the battery condition and expiration date.
AM.II.I.S.9.	Inspect communication system equipment mounts, racks, and supporting structure for security and condition.
AM.II.I.S.12.	Inspect radio control heads, transceivers, and associated antenna installations for security, physical condition, and proper attachment.
.....	Verify proper routing, security, and general condition of communication system wiring and coaxial cables in accessible areas.

Subject NEW. Navigation	
Competency	Inspect aircraft navigation systems.
Knowledge	**The applicant will be able to:**
	Magnetic and Directional Navigation Systems
AM.II.H.K.2.	Explain the magnetic compass operational principles and major components.
.....	Explain compass errors, limitations, and environmental influences.
.....	Identify inspection, maintenance, and troubleshooting requirements for magnetic compass systems.
AM.II.H.K.3.	Explain the purpose and regulatory requirements for compass swing procedures.
.....	Describe safety and environmental considerations for compass swing operations.
.....	Explain operational principles of directional gyros and heading indicators.
.....	Identify flux valves, slaving systems, and basic directional alignment procedures.
AM.II.H.K.8.	Describe direction-indicating instruments used for flight control awareness.
.....	Explain common directional system errors and their causes.
	Navigation Antennas and Installation Requirements
.....	Explain the purpose and function of navigation antennas used for aircraft navigation systems.
.....	Explain installation considerations, including placement, bonding, routing, and interference factors.
.....	Identify inspection and maintenance requirements for navigation antennas and associated cabling.
	Ground-Based Navigation Systems
AM.II.I.K.9.	Explain VOR operational principles and major components.
.....	Explain VOR signal characteristics, limitations, and common failure indications.
AM.II.I.K.10.	Describe DME operational principles and major components.
AM.II.I.K.11.	Describe the operational principles of an instrument landing system (ILS).
.....	Explain ILS signal characteristics, sensitivities, and limitations.
.....	Identify CAT I/II/III system requirements and associated maintenance considerations.
	Satellite-Based Navigation Systems
AM.II.I.K.12.	Explain the Global Positioning System (GPS) operational principles and major components.
	Collision Avoidance and ADS-B Systems
AM.II.I.K.13.	Identify Traffic Collision Avoidance System (TCAS) and Airborne Collision Avoidance System (ACAS) operational principles and major components.
.....	Identify traffic advisory (TA) and resolution advisory (RA) functions and system limitations.
AM.II.I.K.20.	Explain ADS-B operational principles, regulatory requirements, components, and data sources.
.....	Identify inspection and verification requirements for ADS-B installations.
	Terrain and Weather Awareness Systems
AM.II.I.K.14.	Describe airborne weather radar operational principles and major components.
.....	Identify radar display interpretation, attenuation effects, and system limitations.
.....	Identify safety considerations for radar operation during ground handling.

Subject NEW. Navigation	
AM.II.I.K.15.	Identify terrain-alerting systems, their major components, operational principles, and limitations.
	Flight Management and Auto Flight Systems
.....	Identify major FMS components, data sources, and basic operational principles.
.....	Identify FMS navigation modes, performance functions, and system limitations.
AM.II.I.K.16.	Identify the autopilot's major components and their functions.
.....	Identify autopilot operational principles, modes, and limitations.
.....	Identify inspection and verification requirements for autopilot systems.
AM.II.I.K.17.	Identify the auto-throttle system components and operational principles.
.....	Identify auto-throttle modes, protections, and system limitations.
.....	Identify the inspection and verification requirements for auto-throttle systems.
	Radio Altimeter Systems
AM.II.I.K.19.	Explain radio altimeter operational principles and major components.
.....	Identify radio altimeter (RA) accuracy factors, limitations, and integration with other systems.
	Airspace and Operational Requirements
.....	Identify maintenance, functional check, and MEL/MMEL considerations for low visibility operations.
.....	Identify RVSM definitions and critical system components.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
.....	Navigation system interference or errors during installation.
.....	Navigation or surveillance system configuration errors.
.....	Navigation database or software discrepancies.
.....	Insufficient post-maintenance inspection or verification.
.....	Exposure to non-ionizing radiation sources, such as weather radar and HF radios.
Skills	**The applicant demonstrates the ability to:**
AM.II.H.S.6.	Inspect a magnetic compass for physical integrity, fluid condition, legibility, proper mounting hardware, and security.

Subject G. Air Conditioning and Pressurization	
Competency	Inspect and maintain air conditioning and pressurization systems.
Knowledge	**The applicant will be able to:**
	General
.....	Explain the purpose and function of aircraft air conditioning systems for general aviation and transport-category aircraft.
.....	Explain the relationship between air conditioning, ventilation, and pressurization systems.
.....	Identify major air conditioning system components.
	Explain the operational principles of major air conditioning system components.
.....	Trace airflow paths through typical general aviation and transport-category air-conditioning system configurations.
	Air Distribution
	Identify major air distribution system components.
.....	Explain the principles that govern system operation.
.....	Describe considerations for air distribution system inspections and operational checks.
	Air Supply Systems
	Identify major components of air supply systems.
.....	Explain conditioned air supply sources and their operating principles for general aviation and transport-category aircraft.
AM.II.G.K.6.	Explain the vapor cycle system operating principles and major components.
AM.II.G.K.7.	Explain the air cycle system operating principles and major components.
.....	Describe considerations for inspections, maintenance, and operational checks of systems that supply conditioned air.
	Temperature Control
.....	Explain the operation of the temperature control system, including zone temperature regulation and the crew interface.
.....	Describe considerations for temperature control system calibration and fault diagnosis using system test functions.
	Pressurization Control
AM.II.G.K.8.	Explain the pressurization system operating principles, terminology, and major components.
AM.II.G.K.1.	Explain the sources of pressurization for reciprocating and turbine engines, and the differences across aircraft categories.
.....	Describe pressurization modes, including isobaric and constant differential operation.
.....	Describe considerations for pressurization system inspections and operational checks.
.....	**Equipment Cooling**
AM.II.G.K.3.	Identify major equipment cooling system components.
.....	Describe considerations for equipment cooling, airflow verification, and operational testing.
.....	**Supplemental Heating**
.....	Explain supplemental heating system types, purpose, configuration, and operating principles.

Subject G. Air Conditioning and Pressurization	
AM.II.G.K.2.	Explain the engine and APU bleed air cabin heating system layout and temperature regulation strategies.
AM.II.G.K.5.	Identify major combustion heater components.
	Explain combustion heater operating principles.
AM.II.G.K.4.	Identify major exhaust heat exchanger components.
	Explain exhaust heat exchanger operating principles.
	Describe considerations for supplemental heating system inspections and maintenance.
	Moisture [Humidity] / Air Contamination Control
.....	Describe how moisture and humidity contribute to corrosion and degradation in air-conditioning system components.
.....	Identify airborne contaminants and associated health risks.
	Identify the air contamination control system’s major components.
.....	Explain the air contamination control system’s purpose and operating principles.
.....	Describe considerations for air contamination control system inspections, functional checks, and sensor verification.
.....	Explain the sources and pathways of smoke and fume events.
.....	Identify major carbon monoxide detector components.
.....	Explain a carbon monoxide detector’s purpose and operating principles.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.G.R.2.	Halogenated refrigerant release hazards.
AM.II.G.R.5.	Chemical and vapor exposure hazards.
AM.II.G.R.6.	Combustion heater fault hazards.
Skills	**The applicant demonstrates the ability to:**
AM.II.G.S.13.	Inspect an exhaust heat exchanger cabin heater system for defects.
AM.II.G.S.10.	Inspect a combustion heater fuel supply system for leaks.
AM.II.G.S.14.	Inspect an outflow valve for condition and security.
.....	Clean an outflow valve.
AM.II.G.S.12.	Troubleshoot an air-cycle air-conditioning system using system schematics.

Subject L. Ice and Rain Control Systems	
Competency	Inspect, maintain, and troubleshoot aircraft ice and rain protection systems.
Knowledge	**The applicant will be able to:**
	Environmental Conditions and Ice Formation
AM.II.L.K.1.	Describe conditions that lead to ice formation and their effects.
	System Types and Applications
.....	Compare ice and rain protection system types and their applications in general aviation and transport-category aircraft.
	Component Identification and Function
.....	Identify ice and rain protection system components.
.....	Explain the functions of ice and rain protection system components.
	System Operation
AM.II.L.K.2.	Explain the ice detection system’s function and operation.
AM.II.L.K.3.	Explain the anti-icing system's purpose, function, and operational principles.
AM.II.L.K.4.	Explain the deicing system's purpose, function, and operational principles.
.....	Explain pneumatic deicer boot operation and the functional indications observed during system checks.
AM.II.L.K.5.	Explain the rain protection system's purpose, function, and operational principles.
	Schematic Interpretation
.....	Interpret ice and rain protection system schematics to trace airflow, electrical distribution, or fluid routing through system components.
	Maintenance Requirements
AM.II.L.K.6.	Describe ice and rain protection system maintenance requirements related to inspection, servicing, functional checks, and troubleshooting.
.....	Describe care and cleaning considerations for pneumatic deicer boots, including materials compatibility and surface condition requirements.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.L.R.1.	Ice- and rain-protection system testing and maintenance.
.....	Improper installation or servicing of ice and rain protection components.
AM.II.L.R.2.	Contamination or improper handling or storage of deicing and anti-icing fluids.
AM.II.L.R.3.	Heated windshield cleaning and material compatibility.
Skills	**The applicant demonstrates the ability to:**
AM.II.L.S.2.	Inspect a pneumatic deicer boot for condition and security.
AM.II.L.S.3.	Clean a pneumatic deicer boot.
AM.II.L.S.4.	Inspect a heated pitot static anti-ice system for condition and security.
.....	Conduct a functional check of a heated pitot static anti-ice system and verify proper operation.
.....	Troubleshoot a heated pitot static anti-ice system fault.

Subject M. Airframe Fire Protection Systems	
Competency	Inspect, maintain, and troubleshoot airframe fire protection systems.
Knowledge	**The applicant will be able to:**
AM.II.M.K.1.	Describe the purpose of designated aircraft fire zones and identify typical airframe fire-zone locations.
	Airframe Fire Detection Systems
AM.II.M.K.2.	Explain the components and operation of airframe fire-detection systems.
AM.II.M.K.3.	Explain maintenance and inspection requirements for airframe fire and overheat detection systems.
AM.II.M.K.4.	Describe smoke detection system components and operation in airframe installations.
.....	Describe carbon monoxide detection system components and operation in airframe installations.
.....	Interpret common airframe fire detection system malfunctions.
	Fire Extinguishing Systems
AM.II.M.K.5.	Describe extinguishing agents used in airframe systems and their application based on fire types.
AM.II.M.K.6.	Describe airframe fire extinguishing system components and operation.-
AM.II.M.K.7.	Explain maintenance and inspection requirements for airframe fire extinguishing systems.
.....	Interpret common airframe fire extinguishing system malfunctions.
.....	Explain storage, handling, and safety procedures for airframe extinguishing agents and system components.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.M.R.2.	Inadequate use of PPE or ventilation when working with extinguishing agents in enclosed cabins or cargo areas.
.....	Improper installation or maintenance of smoke or CO detectors.
.....	Incorrect handling or servicing of airframe fire extinguishing bottles (cargo/lavatory).
.....	Maintenance-induced faults in airframe fire detection circuits.
Skills	**The applicant demonstrates the ability to:**
	Fire Detection Systems
AM.II.M.S.4.	Inspect a smoke detection system for condition, installation, and proper operation.
AM.II.M.S.5.	Inspect a carbon monoxide detector for condition, installation, and proper operation.
	Fire Extinguishing Systems
AM.II.M.S.10.	Conduct an operational check of a fire detection or protection system and verify correct system response.
AM.II.M.S.11.	Inspect a fire extinguishing agent bottle discharge cartridge (squib) for condition, security, and installation.
AM.II.M.S.8.	Inspect a cargo or lavatory fire extinguishing bottle for condition and serviceability.
AM.III.E.S.8.	Inspect a fire extinguisher discharge circuit for operational condition, routing, and security.
AM.II.M.S.1.	Troubleshoot an airframe fire detection or extinguishing system malfunction.

Subject NEW. Oxygen Systems	
Competency	Inspect and maintain aircraft oxygen systems.
Knowledge	**The applicant will be able to:**
	Oxygen System Fundamentals
.....	Describe the purpose of aircraft oxygen systems.
.....	Identify the physical states of oxygen used in aviation.
.....	Describe oxygen source types and their aviation applications.
	System Components and Operation
AM.II.G.K.9.	Identify major oxygen system components.
.....	Explain the operation of regulators, flow indicators, and oxygen system valves.
	Flight Crew Oxygen System
.....	Identify flight crew oxygen mask components.
.....	Explain the operation of flight crew oxygen masks.
.....	Describe indicators, warning mechanisms, and emergency override features.
	Passenger Oxygen System
.....	Differentiate between chemical and gaseous passenger oxygen systems.
	Chemical Oxygen Generators
.....	Describe the operating principles of chemical oxygen generators.
.....	Describe the hazards associated with chemical oxygen generator activation and handling.
	Gaseous Passenger Oxygen Systems
.....	Describe the gaseous passenger oxygen system components.
.....	Explain the operation of gaseous passenger oxygen systems.
.....	Describe safety considerations for gaseous passenger oxygen systems.
	Portable Oxygen System
.....	Identify the types of portable oxygen systems used in aviation.
.....	Describe inspection criteria for portable oxygen systems.
.....	Describe servicing procedures for portable oxygen systems.
.....	Explain the operation of portable oxygen systems.
.....	Describe stowage requirements for portable oxygen systems.
.....	**Oxygen System Maintenance**
AM.II.G.K.10.	Describe inspection and test requirements for aircraft oxygen systems.
AM.I.F.K.8.	Explain oxygen servicing concepts, including oxygen types, servicing equipment, hazards, and general practices.
.....	Explain leak check principles for oxygen systems.
.....	Describe safety considerations for handling high-pressure oxygen components.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.G.R.1.	Oxygen system maintenance hazards.
AM.II.G.R.3.	Chemical oxygen generator activation and exposure hazards.
AM.II.G.R.4.	Post-servicing oxygen system test anomalies, including leaks, pressure deviations, or contamination.
	Oxygen system leaks, including oxygen depletion, fire risk, and crew incapacitation.

Subject NEW. Oxygen Systems	
Skills	**The applicant demonstrates the ability to:**
AM.II.G.S.1.	Inspect an oxygen system for leaks, condition, and security.
AM.II.G.S.5.	Inspect an oxygen system pressure regulator for condition and proper operation.
AM.II.G.S.4.	Inspect a pilot emergency oxygen mask and supply hoses for condition and security.
AM.II.G.S.7.	Inspect a chemical oxygen generator for serviceability and safe handling.
AM.II.G.S.6.	Inspect an oxygen system cylinder for serviceability.
AM.II.G.S.3.	Service an oxygen system and verify correct system pressure and absence of leaks.

Subject N. Rotorcraft Systems	
Competency	Inspect and maintain rotorcraft systems.
Knowledge	**The applicant will be able to:**
	Rotorcraft Aerodynamics
AM.II.N.K.1.	Describe the aerodynamic principles that govern rotorcraft lift and thrust.
.....	Explain how blade pitch changes affect rotorcraft aerodynamic performance.
.....	Describe gyroscopic precession and its effects on rotor system response.
.....	Explain the dissymmetry of lift and the role of blade flapping in compensating for it.
.....	Describe rotor torque effects on the fuselage and methods of anti-torque.
.....	Explain the axes of rotorcraft movement and their relevance to rotorcraft control.
	Explain the aerodynamic factors that affect hovering performance, including in-ground-effect and out-of-ground-effect conditions.
	Describe airflow through the rotor system during autorotation.
	Systems Overview
.....	Identify the major rotorcraft systems.
.....	Describe the primary functions of major rotorcraft systems.
	Flight Controls
AM.II.N.K.2.	Describe the purpose and function of collective, cyclic, and antitorque controls.
.....	Explain how rotorcraft flight controls interact to manage lift, thrust, and directional control.
	Rotor Systems and Rotor Blades
	Rotor System Types
AM.II.N.K.5.	Explain main rotor system types and operational characteristics.
.....	Explain tail rotor system types and operational characteristics.
	Rotor Blade Construction and Behavior
AM.II.N.K.7.	Describe rotor blade construction and functional characteristics.
.....	Describe the principles of rotor blade tracking and balance.
.....	Identify common rotor blade wear and damage types and the inspection considerations associated with them.
	Power Transmission Systems
.....	Describe the types of powerplants used in rotorcraft and their operational considerations.
AM.II.N.K.3.	Describe the components and power transfer function of rotorcraft transmission systems.
.....	Describe the purpose and operation of the main rotor transmission, tail rotor drive system, clutch, and freewheeling unit.
	Structural Systems
.....	Describe rotorcraft landing gear types and their functional characteristics.
.....	Describe the construction and functional role of the tail boom in antitorque systems.
	Stability Augmentation and Control Enhancement
AM.II.I.K.18.	Describe the operational principles and major components of rotorcraft stability augmentation systems (SAS).
.....	Identify SAS functions, limitations, and integration with autopilot systems.
	Maintenance Concepts
AM.II.N.K.4.	Describe rigging principles and requirements for rotary wing flight controls.

Subject N. Rotorcraft Systems	
AM.II.N.K.8.	Describe the causes and indications of rotor system vibration.
AM.II.N.K.9.	Describe the causes and indications of drive system vibration.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.II.N.R.1.	Improper approach and egress of operating rotorcraft.
AM.II.N.R.2.	Improper positioning or securing of rotorcraft during ground handling.
.....	Improper handling of rotorcraft with skid-type or wheeled landing gear.
AM.II.N.R.3.	Improper isolation of rotorcraft systems during maintenance.
AM.II.N.R.4.	Improper maintenance or inspection of rotorcraft systems or components.
Skills	**The applicant demonstrates the ability to:**
.....	Inspect a pitch change link for condition, security, and safetying.
.....	Inspect tail rotor drive shaft couplings and bearings for condition and security.

Airman Certification Standards – Powerplant

Current Code	Subject
A.	Reciprocating Engines
New	Reciprocating Engines – Theory, Construction, and Operation
New	Reciprocating Engines – Induction and Cooling
New	Reciprocating Engines – Engine Fuel and Control
New	Reciprocating Engines – Ignition
New	Reciprocating Engines – Starting
New	Reciprocating Engines – Exhaust
B.	Turbine Engines
New	Turbine Engines – Theory, Construction, and Operation
New	Turbine Engines – Bleed Air
New	Turbine Engines – Engine Fuel and Control
New	Turbine Engines – Ignition
New	Turbine Engines – Starting
New	Turbine Engines – Exhaust
G.	Engine Oil
F.	Engine Electrical
D.	Engine Indicating
E.	Engine Fire Protection
M.	Propellers

	Reciprocating Engines – Theory, Construction, and Operation
Competency	Inspect and maintain reciprocating engine systems.
Knowledge	**The applicant will be able to:**
	Engine Theory and Principles
AM.III.A.K.3.	Explain internal combustion engine operating principles.
AM.III.A.K.2.	Explain reciprocating engine operating principles.
AM.III.A.K.10.	Explain diesel engine operating principles.
	Engine Types and Construction
AM.III.A.K.1.	Identify the types and configurations of reciprocating engines.
AM.III.A.K.4.	Describe horizontally opposed engine construction and internal components.
	Engine Performance
AM.III.A.K.7.	Explain reciprocating engine performance parameters.
AM.III.B.K.7.	Identify common causes of reciprocating engine performance loss.
	Maintenance and Inspection
AM.III.A.K.8.	Describe reciprocating engine maintenance and inspections.
	Preservation for Storage
AM.III.A.K.6.	Describe reciprocating engine preservation procedures.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.III.A.R.1.	Movement of the propeller(s) during maintenance.
AM.III.C.R.2.	Operation of a reciprocating engine during maintenance.
AM.III.I.R.2.	Improper idle-mixture adjustment.
AM.III.I.R.3.	Improper removal or installation of fuel metering components.
AM.III.I.R.4.	Maintenance near fire ignition sources with pressurized fuel systems.
.....	Exposure to fuel during maintenance.
	Stored energy release during cylinder pressurization.
Skills	**The applicant demonstrates the ability to:**
AM.III.A.S.8.	Locate the top dead center for the number one cylinder.
AM.III.A.S.3.	Install a piston and wrist pin.
AM.III.A.S.9.	Install a cylinder on a horizontally opposed engine.
AM.III.A.S.1.	Inspect a cylinder assembly for serviceability.
AM.III.C.S.1.	Perform a cylinder compression check.
AM.III.C.S.14.	Inspect an engine mount for serviceability.
AM.III.C.S.9.	Inspect an engine for leaks after maintenance.
.....	Troubleshoot reciprocating engine operational faults.
AM.III.C.S.12.	Perform an engine or APU start sequence using the checklist and monitor system indications to identify normal and abnormal conditions.

Reciprocating Engines – Induction and Cooling	
Competency	Inspect and maintain reciprocating engine induction and cooling systems.
Knowledge	**The applicant will be able to:**
	Fundamentals
AM.III.J.K.1.	Explain reciprocating engine induction and cooling system operating principles and airflow characteristics.
AM.III.J.K.6.	Describe induction-air filtering methods and components.
AM.III.J.K.2.	Explain the causes, effects, and indications of induction system icing.
	Cooling System Fundamentals
AM.III.J.K.8.	Describe pressure cowling airflow and cooling air management.
AM.III.J.K.9.	Describe baffle and seal installation principles and airflow considerations.
AM.III.J.K.10.	Explain reciprocating engine liquid cooling system components and operating principles.
	Forced Induction
AM.III.J.K.3.	Describe supercharger components and operating principles.
AM.III.J.K.4.	Describe the turbocharger, intercooler, wastegate, and controls operating principles.
	Specialized Cooling Systems
AM.III.J.K.5.	Describe the augmenter cooling system’s purpose and airflow characteristics.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.III.J.R.3.	Foreign object damage during induction or cooling system maintenance.
AM.III.J.R.4.	Chemicals used in liquid cooling systems.
AM.III.C.R.1.	Hot surface exposure during compression checks.
Skills	**The applicant demonstrates the ability to:**
AM.III.J.S.1.	Inspect a carburetor heat system for condition, security, and installation.
AM.III.J.S.5.	Service an induction air filter.
AM.III.J.S.6.	Inspect a turbocharger for leaks, security, and condition.
AM.III.J.S.7.	Inspect a turbocharger wastegate for condition and freedom of movement.
AM.III.J.S.8.	Inspect an induction system for obstruction and security.
AM.III.J.S.11.	Inspect reciprocating engine cooling system ducting, baffles, and seals for condition, security, and installation.
AM.III.J.S.18.	Inspect the reciprocating engine cowl flap system for condition, security, and installation.

Reciprocating Engines – Engine Fuel and Control	
Competency	Inspect, maintain, and troubleshoot reciprocating engine fuel metering components and fuel control systems.
Knowledge	**The applicant will be able to:**
	Fundamental Principles
AM.III.I.K.1.	Identify fuel-air ratio and fuel metering principles, and how metering devices regulate the mixture.
	Carburetion
.....	Identify carburetor types, components, and operating principles.
AM.III.I.K.2.	Describe float carburetor components and operating principles.
.....	Describe float carburetor maintenance principles, including float level and adjustments.
AM.III.J.K.7.	Explain the carburetor heat system's purpose and operation.
	Fuel Injection
AM.III.I.K.4.	Describe fuel injection system types, components, and operating principles.
.....	Describe fuel injection system maintenance principles, including adjustments and troubleshooting considerations.
	Fuel System Operation
AM.III.I.K.10.	Explain engine fuel paths and system behavior under varying conditions.
	Fuel System Inspection and Maintenance
AM.III.I.K.9.	Describe fuel system inspection requirements.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.III.I.R.2.	Improper idle-mixture adjustment.
AM.III.I.R.3.	Improper handling of fuel metering components.
AM.III.I.R.4.	Maintenance of fuel systems near ignition sources.
.....	Exposure to residual fuel during maintenance.
.....	Improper or missing aircraft grounding during reciprocating engine fuel system maintenance.
Skills	**The applicant demonstrates the ability to:**
AM.III.I.S.1.	Inspect a fuel injection system for leaks, security, and condition.
.....	Troubleshoot fuel injection system faults.
AM.III.I.S.20.	Inspect a fuel boost pump for condition, security, and installation.
AM.III.I.S.24.	Inspect engine fuel system lines and components for leaks, security, and condition.
AM.III.I.S.29.	Inspect a fuel selector valve for condition, security, and installation.
AM.III.I.S.16.	Remove and install an engine-driven fuel pump.
AM.III.I.S.9.	Remove and install a fuel metering device.
AM.III.I.S.27.	Service a reciprocating engine fuel filter.
AM.III.I.S.25.	Troubleshoot abnormal fuel pressure indications.

Reciprocating Engines – Ignition	
Competency	Inspect, maintain, and troubleshoot reciprocating engine ignition system components.
Knowledge	**The applicant will be able to:**
	Ignition System Fundamentals
AM.III.H.K.1.	Describe the ignition system's purpose, function, and role in initiating combustion for reciprocating engines.
.....	Identify reciprocating-engine ignition systems by their power source, control method, and application.
.....	Explain magneto ignition system components and operational principles.
.....	Describe magneto timing concepts, including impulse coupling and retard breaker operation.
.....	Describe battery-powered ignition system characteristics and applications.
AM.III.H.K.6.	Explain solid-state electronic ignition system types, components, and operational principles.
	Ignition System Maintenance, Integration and Fault Recognition
.....	Describe ignition system maintenance and inspection requirements for reciprocating engines.
.....	Explain ignition system integration with reciprocating engine starting, fuel delivery, and engine control systems.
.....	Identify common reciprocating ignition system faults and their system-level indications.
	Ignition Safety and Spark Plug Concepts
.....	Identify hazards associated with high-voltage reciprocating engine ignition components and required safety precautions.
AM.III.H.K.2.	Explain spark plug construction, operation, and performance characteristics.
.....	Describe spark plug maintenance and inspection requirements.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.III.H.R.3.	High-voltage exposure from ungrounded magnetos.
AM.III.H.R.1.	Electrical hazards from reciprocating engine ignition system components.
AM.III.H.R.2.	Capacitor-discharge energy hazards in reciprocating-engine ignition systems.
	Incorrect reciprocating engine ignition timing.
.....	Improper handling of reciprocating engine ignition system components.
.....	Fuel-vapor ignition hazards during reciprocating-engine fuel-system maintenance.
Skills	**The applicant demonstrates the ability to:**
AM.III.H.S.1.	Set magneto internal timing.
AM.III.H.S.2.	Time a magneto to an engine.
AM.III.H.S.6.	Inspect magneto breaker points for condition and serviceability.
AM.III.H.S.8.	Inspect a magneto impulse coupling for condition, security, and installation.
AM.III.H.S.7.	Inspect an ignition harness for condition, routing, and security.
AM.III.H.S.3.	Service a spark plug.
AM.III.H.S.10.	Troubleshoot a reciprocating engine ignition switch circuit using wiring diagrams and simulated fault conditions.

Reciprocating Engines – Starting	
Competency	Inspect, maintain, and troubleshoot reciprocating engine starting system components.
Knowledge	**The applicant will be able to:**
	Starting System Fundamentals
AM.III.H.K.7.	Describe the reciprocating engine starting system's purpose, major types, and operation.
.....	Explain reciprocating engine starting system integration with ignition, fuel delivery, and engine control systems.
	Starting System Maintenance and Fault Recognition
.....	Describe maintenance and inspection requirements for reciprocating engine starting systems.
.....	Explain common reciprocating engine starting system faults and their system-level indications.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.III.H.R.1.	Electrical hazards from the reciprocating engine starting system components.
.....	Mechanical and operational hazards from the reciprocating engine’s starting system components.
Skills	**The applicant demonstrates the ability to:**
AM.III.H.S.5.	Inspect a reciprocating engine's electrical starting system.
AM.III.H.S.9.	Troubleshoot a reciprocating engine’s electrical starting system using wiring schematics and test equipment.

Reciprocating Engines – Exhaust	
Competency	Inspect and maintain reciprocating engine exhaust system assemblies.
Knowledge	**The applicant will be able to:**
AM.III.L.K.1.	Describe reciprocating engine exhaust system types, purposes, and operating principles.
.....	Describe reciprocating engine exhaust system components and their functions.
.....	Explain reciprocating engine cabin heat exchanger operation and associated carbon monoxide hazards.
.....	Describe reciprocating engine exhaust system inspection and maintenance principles and associated safety precautions.
AM.III.L.K.3.	Describe reciprocating engine noise suppression components.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
.....	Improper installation or security of reciprocating engine exhaust components.
AM.III.L.R.3.	Operation of a reciprocating engine with an exhaust system leak.
.....	Improper identification of thermal distress, cracking, or deformation of reciprocating engine exhaust components.
.....	Failure to identify exhaust-system restrictions or internal muffler failures.
Skills	**The applicant demonstrates the ability to:**
AM.III.L.S.3.	Inspect a reciprocating engine exhaust system for leaks, security, and condition.
AM.III.L.S.4.	Inspect reciprocating engine exhaust system baffles or diffusers for condition and security.
AM.III.L.S.5.	Inspect an exhaust heat exchanger for leaks, security, and condition.
AM.III.L.S.7.	Perform a reciprocating engine exhaust system pressure leak check.

Subject B. Turbine Engines – Theory, Construction, and Operation	
Competency	Inspect and maintain turbine engine systems.
Knowledge	**The applicant will be able to:**
	Engine Theory and Principles
AM.III.B.K.1.	Explain turbine engine operating principles.
	Engine Types and Construction
AM.III.B.K.2.	Identify types of turbine engines and their distinguishing characteristics.
AM.III.B.K.3.	Describe turbine engine construction and internal components.
	Engine Performance
AM.III.B.K.4.	Explain turbine engine performance parameters.
AM.III.B.K.7.	Identify common causes of turbine engine performance loss.
AM.III.B.K.6.	Describe post-installation turbine engine operational checks.
	Maintenance and Inspection
AM.III.A.K.8.	Describe turbine engine maintenance and inspections.
	Preservation for Storage
AM.III.B.K.9.	Describe turbine engine preservation procedures.
	Auxiliary Power Units
AM.III.B.K.10.	Identify applications and purposes of auxiliary power units (APU).
	Describe APU construction and components.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
.....	Incorrect interpretation of turbine engine operating parameters.
AM.III.C.R.2.	Operation of a turbine engine during maintenance.
.....	Improper post-installation checks.
.....	Improper recognition of turbine engine performance loss factors.
Skills	**The applicant demonstrates the ability to:**
AM.III.B.S.6.	Inspect a combustion liner for condition and serviceability.
AM.III.B.S.13.	Inspect the first two stages of a turbine fan or compressor for foreign object damage.
AM.III.C.S.14.	Inspect an engine mount for condition and serviceability.
AM.III.C.S.9.	Inspect an engine for leaks following maintenance.
AM.III.C.S.8.	Inspect engine control linkages and components for condition, security, installation, and rigging.
AM.III.B.S.8.	Inspect inlet guide vanes and compressor blades for condition and serviceability.

Subject B. Turbine Engines – Bleed Air	
Competency	Inspect and maintain turbine engine bleed air system components.
Knowledge	**The applicant will be able to:**
.....	**Air Flow and Cooling**
AM.III.K.K.1.	Describe the turbine engine internal cooling air system theory, components, and operation.
AM.III.K.K.2.	Explain turbine engine cowling airflow paths and their purpose.
AM.III.K.K.3.	Describe turbine engine internal cooling methods and airflow paths.
AM.III.K.K.4.	Explain the purpose and function of turbine engine baffles and seals.
AM.III.K.K.5.	Describe turbine engine insulation blankets and shrouds and their purpose.
	Induction Systems
AM.III.K.K.6.	Explain turbine engine induction system theory, components, and operation.
	Bleed-Air Systems
AM.III.K.K.7.	Explain turbine engine bleed air system theory, components, and operation as they apply to engine-mounted bleed air sources.
AM.III.B.K.8.	Identify common turbine engine-mounted bleed air system applications and functions.
	Anti-Ice Systems
AM.III.K.K.8.	Describe the turbine engine anti-ice system's purpose, components, and operation.
	Advanced Airflow Management
	Explain the active turbine clearance control system’s theory of operations and its purpose.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
.....	Improper handling or installation of airflow management components.
	Bleed-air system thermal and pressure hazards during operation or maintenance.
.....	Improper shutdown procedures.
.....	Improper servicing or inspection of internal cooling or clearance control systems.
Skills	**The applicant demonstrates the ability to:**
AM.III.K.S.1.	Inspect a turbine engine induction and cooling system.
AM.III.K.S.4.	Inspect cooling ducting and seals for condition and security.
AM.III.K.S.5.	Inspect a turbine engine air intake anti-ice system for obstruction.
AM.III.K.S.8.	Inspect a bleed air system for leaks, condition, and security.

Subject B. Turbine Engines – Engine Fuel and Control	
Competency	Inspect and maintain turbine engine fuel metering components.
Knowledge	**The applicant will be able to:**
AM.III.I.K.8.	Describe turbine engine fuel metering system theory, components, and operation.
AM.III.I.K.6.	Describe hydromechanical fuel control system design features, components, and operating principles.
AM.III.I.K.5.	Explain digital engine control system types, major components, functions, and advantages.
AM.III.I.K.7.	Describe fuel nozzle and manifold design features and operation.
	Explain how abnormal fuel nozzle spray patterns affect combustion, temperature distribution, and turbine engine performance (e.g., hot spots, uneven combustion, thermal stress).
	Identify common causes of spray-pattern defects (contamination, erosion, improper cleaning).
AM.III.I.K.11.	Describe fuel heater types, purposes, and operating principles.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.III.I.R.1.	Improper calibration or adjustment of fuel control systems.
AM.III.I.R.5.	Improper handling or transport of fuel control units.
.....	Improper operation or troubleshooting of fuel metering systems.
.....	Improper operation, adjustment, or maintenance of electronic or hydromechanical fuel controls.
.....	Improper handling, cleaning, or installation of fuel nozzles or manifolds.
	Improper identification of fuel nozzle defects affecting combustion or temperature distribution.
	Improper or missing aircraft grounding during turbine engine fuel system maintenance.
Skills	**The applicant demonstrates the ability to:**
AM.III.I.S.2.	Inspect a turbine engine fuel nozzle for condition and contamination.
AM.III.I.S.27.	Service a turbine engine fuel filter.

Subject H. Turbine Engines – Ignition	
Competency	Inspect, maintain, and troubleshoot turbine engine ignition system components.
Knowledge	**The applicant will be able to:**
.....	**Ignition System Fundamentals**
AM.III.H.K.1.	Describe the ignition system's purpose, function, and role in initiating combustion for turbine engines.
.....	Identify turbine engine ignition systems by power source, control method, and application.
AM.III.H.K.6.	Explain the operational principles of the electronic ignition system in digital engine control systems (FADEC).
.....	**Ignition System Maintenance, Integration and Fault Recognition**
.....	Describe ignition system maintenance and inspection requirements for turbine engines.
.....	Explain ignition system integration with turbine engine starting, fuel delivery, and engine control systems.
.....	Identify common turbine engine ignition system faults and their system-level indications.
.....	**Ignition Safety and Igniter Concepts**
.....	Identify the hazards associated with high-voltage turbine-engine ignition components and the required safety precautions.
AM.III.H.K.2.	Explain ignitor plug construction, operation, and performance characteristics.
.....	Describe ignitor plug maintenance and inspection requirements.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
	High-energy discharge from turbine engine exciter and igniter systems.
	Electrical hazards from turbine engine ignition system components.
AM.III.H.R.2.	Capacitor-discharge energy hazards in turbine-engine ignition systems.
.....	Improper handling of turbine engine ignition system components.
	Fuel vapor ignition sources near turbine engine fuel system maintenance areas.
Skills	**The applicant demonstrates the ability to:**
AM.III.H.S.16.	Inspect a turbine engine ignition system.
AM.III.H.S.14.	Remove and install turbine engine igniter plugs.
AM.III.H.S.17.	Inspect igniters for condition and serviceability.
AM.III.H.S.13.	Troubleshoot a turbine engine ignition system, using wiring diagrams and simulated fault conditions.

Subject H. Turbine Engines – Starting	
Competency	Inspect, maintain, and troubleshoot turbine engine starting system components.
Knowledge	**The applicant will be able to:**
.....	**Starting System Fundamentals**
AM.III.H.K.7.	Describe the turbine-engine starting system's purpose, major types, and operation.
.....	Explain turbine engine starting system integration with ignition, fuel delivery, and engine control systems.
.....	**Starting System Maintenance and Fault Recognition**
.....	Describe maintenance and inspection requirements for turbine engine starting systems.
.....	Explain common turbine engine starting system faults and their system-level indications.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.III.H.R.1.	Electrical hazards from turbine engine starting system components.
.....	Mechanical and operational hazards from turbine engine starting system components.
Skills	**The applicant demonstrates the ability to:**
AM.III.H.S.5.	Inspect a turbine engine electrical starting system.
AM.III.H.S.9.	Troubleshoot a turbine engine electrical starting system using wiring schematics and test equipment.

Subject B. Turbine Engines – Exhaust	
Competency	Inspect turbine engine exhaust and thrust reverser system components.
Knowledge	**The applicant will be able to:**
.....	**Turbine Engine Exhaust Systems**
AM.III.L.K.2.	Explain turbine engine exhaust system types, purposes, and operating principles.
.....	Describe turbine engine exhaust system components and functions.
.....	Describe turbine engine exhaust system inspection and maintenance principles.
.....	Explain turbine engine exhaust noise suppression theory, components, and operation.
.....	**Turbine Engine Thrust Reverser Systems**
AM.III.L.K.4.	Explain thrust reverser system theory, components, and their operation.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
.....	**Engine Exhaust Systems**
.....	Improper installation or security of turbine engine exhaust components.
.....	Improper identification of thermal distress, cracking, or deformation of turbine engine exhaust components.
.....	Improper handling or installation of turbine engine noise suppression or mixer components.
.....	**Thrust Reverser Systems**
.....	Improper operation, rigging, or maintenance of turbine engine thrust-reverser systems.
.....	Improper interpretation of the turbine engine thrust reverser state.
Skills	**The applicant demonstrates the ability to:**
	Inspect turbine engine exhaust system baffles or heat shields for condition and security.
AM.III.L.S.2.	Inspect turbine engine exhaust system components for cracks, condition, and security.

Subject G. Engine Oil	
Competency	Inspect, maintain, and troubleshoot engine lubrication system components.
Knowledge	**The applicant will be able to:**
	Lubrication Fundamentals
AM.III.G.K.1.	Describe engine oil functions, types, grades, and characteristics.
.....	Explain friction types and relevance to engine operation.
	Lubrication System Types and Operation
AM.III.G.K.2.	Identify wet-sump and dry-sump lubrication systems by their configurations, operations, and applications in reciprocating and turbine engines.
.....	Explain lubrication system components and their purpose, function, and operation.
	Lubrication System Indications
AM.III.G.K.5.	Describe oil system indications, including pressure, temperature, quantity, and chip detection.
	Lubrication System Maintenance and Analysis
AM.III.G.K.6.	Describe lubrication system maintenance, inspection, and servicing requirements.
.....	Explain engine oil pressure regulation methods, including relief valve operation and adjustment considerations.
.....	Explain the purpose of oil analysis and the identification of wear metals and associated engine conditions.
	Lubrication System Fault Recognition
.....	Describe common lubrication system faults and associated system indications.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.III.G.R.1.	Incorrect lubrication system servicing.
	Improper oil pressure adjustment procedures.
	Oil pressure adjustments that exceed manufacturer-specified limits.
AM.III.G.R.3.	Improper handling, storage, or disposal of lubricating oil.
.....	Failure to identify abnormal oil system indications.
.....	Installation errors involving oil filters, screens, lines, or fittings.
Skills	**The applicant demonstrates the ability to:**
AM.III.G.S.3.	Check an engine oil filter bypass indicator for status.
AM.III.G.S.1.	Inspect an oil cooler and associated lines for condition, security, and leaks.
AM.III.G.S.6.	Inspect an oil filter or screen for condition, contamination, and proper installation.
AM.III.G.S.7.	Adjust engine oil pressure.
AM.III.G.S.9.	Install a lubrication system component.
AM.III.G.S.14.	Inspect an engine chip detector for contamination.
AM.III.G.S.11.	Troubleshoot an engine lubrication system malfunction using system indications and schematics.

Subject F. Engine Electrical	
Competency	Inspect, maintain, and troubleshoot engine electrical system components, wiring, and power generation equipment.
Knowledge	**The applicant will be able to:**
.....	Explain the operating principles of engine-mounted AC generators, including IDG and CSD integration.
.....	Explain mechanical and lubrication factors affecting IDG performance, including common electrical failure modes.
.....	Describe installation, inspection, and verification requirements for engine-mounted generators.
.....	Identify common generator, alternator, and IDG fault indicators and their associated corrective actions.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.III.F.R.3.	Failure to verify circuit energy state.
AM.III.F.R.4.	Improper routing or support of engine-mounted electrical wiring.
.....	Failure to identify abnormal generator or alternator output conditions.
Skills	**The applicant demonstrates the ability to:**
AM.III.F.S.14.	Inspect an engine-mounted DC and AC power generation component for condition, security, and installation.
AM.III.F.S.3.	Remove and install an engine-mounted generator or alternator.
AM.II.K.S.13.	Inspect generator brushes and brush spring tension for serviceability.
.....	Troubleshoot DC power generation system faults.
.....	Troubleshoot AC power generation, regulation, and control system faults.
AM.III.F.S.12.	Troubleshoot engine electrical system faults using wiring diagrams and a multimeter.

Subject D. Engine Indicating	
Competency	Inspect, maintain, and troubleshoot engine instrument systems, sensors, and indications.
Knowledge	**The applicant will be able to:**
.....	Explain the purpose and function of engine indicating systems.
AM.III.D.K.11.	Interpret engine instrument range markings and limitations.
AM.III.D.K.8.	Explain the purpose and function of engine indicating and crew alerting systems (EICAS, ECAM, and similar).
.....	Describe how FADEC and digital engine controls receive, send, and control engine indication data.
AM.III.D.K.2.	Analyze temperature indications to identify abnormal trends and potential engine conditions.
AM.III.D.K.4.	Interpret pressure indications to assess engine health and system performance.
AM.III.D.K.3.	Explain the relationship between speed indications and engine operating conditions.
AM.III.D.K.1.	Interpret flow and ratio indications to determine engine performance and power output.
.....	Analyze engine vibration indications to identify potential mechanical or rotating group issues.
.....	Identify and classify engine-mounted sensors, probes, and transducers by function and indication type.
.....	Explain engine-side wiring harness routing, shielding, and protection requirements.
.....	Identify engine-side indication system components by function and data output.
.....	Analyze abnormal engine indications to determine probable system faults or developing conditions.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.III.D.R.1.	Damage to engine sensors, probes, or wiring during removal, installation, or inspection.
AM.III.D.R.2.	Incorrect installation of thermocouples, pressure transducers, or tachometer pickups.
.....	Misinterpretation of engine indications resulting in improper troubleshooting or unsafe engine operation.
.....	Contamination, blockage, or leakage in engine pressure lines (fuel, oil, or manifold pressure) affecting instrument indication accuracy.
.....	Failure to verify the correct indication after FADEC, sensor, or display replacement.
Skills	**The applicant demonstrates the ability to:**
AM.III.D.S.13.	Inspect engine-mounted sensors, probes, and transducers for condition, security, and installation.
AM.III.D.S.6.	Use a multimeter to check electrical or thermocouple-based sensors in engine indication circuits.
AM.III.D.S.11.	Troubleshoot engine indication systems for faults in sensors, wiring, or indication units.

Subject E. Engine Fire Protection	
Competency	Inspect, maintain, and troubleshoot engine fire detection and extinguishing systems.
Knowledge	**The applicant will be able to:**
AM.III.E.K.1.	Describe fire zones associated with reciprocating and turbine engine installations, including their purpose and typical locations.
	Engine Fire Detection Systems
AM.III.E.K.2.	Explain fire-detection concepts as they relate to engine and APU fire-detection installations.
AM.III.E.K.3.	Explain maintenance and inspection requirements for engine and APU fire detection and overheat systems.
.....	Interpret common malfunctions in engine fire detection systems.
	Engine Fire Extinguishing Systems
AM.III.E.K.4.	Describe engine fire extinguishing system components, operation, and extinguishing agents.
AM.III.E.K.5.	Explain maintenance and inspection requirements for engine fire extinguishing systems.
.....	Interpret common malfunctions in engine fire extinguishing systems.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.III.E.R.2.	Incorrect selection, storage, or handling of engine fire extinguishing equipment.
AM.III.E.R.1.	Improper handling or installation of engine fire extinguisher container discharge cartridges (squibs).
AM.III.E.R.3.	Maintenance-induced faults in circuits associated with electrically activated discharge cartridges (squibs).
Skills	**The applicant demonstrates the ability to:**
	Engine Fire Detection Systems
AM.III.E.S.3.	Inspect an engine fire-detection continuous-loop system for condition, routing, and security.
AM.III.E.S.4.	Inspect thermal switch or thermocouple-type fire detection systems for condition and installation.
AM.III.E.S.12.	Inspect flame detectors for condition, security, and installation.
AM.III.E.S.13.	Check the operation of the fire warning press-to-test.
	Engine Fire Extinguishing Systems
AM.III.E.S.6.	Inspect fire extinguishing system discharge indicators to verify status.
AM.III.E.S.7.	Check an engine or APU fire extinguisher container pressure for compliance with specified limits.
AM.III.E.S.8.	Inspect a fire extinguisher discharge circuit for operational condition, routing, and security.
AM.III.E.S.10.	Inspect a fire extinguisher container discharge cartridge (squib) for condition, security, and installation.
AM.III.E.S.11.	Inspect a turbine engine fire extinguisher container for condition and serviceability, including hydrostatic test date compliance.
AM.III.E.S.1.	Troubleshoot an engine or APU fire detection or extinguishing system for a malfunction.

Subject M. Propellers	
Competency	Inspect and maintain propeller systems.
Knowledge	**The applicant will be able to:**
AM.III.M.K.2.	Describe common propeller types and their operational characteristics.
.....	Explain propeller construction features and design considerations.
AM.III.M.K.1.	Explain how pitch settings affect thrust, engine load, and efficiency.
AM.III.M.K.3.	Identify propeller pitch control settings.
AM.III.M.K.4.	Describe constant speed propeller system operation.
.....	Explain governor mechanisms.
AM.III.M.K.5.	Explain beta and reverse thrust modes in turbine propeller systems.
.....	Describe blade angle transitions and throttle lever control.
AM.III.M.K.6.	Describe propeller servicing and routine maintenance requirements.
.....	Describe the criteria used to determine propeller condition and airworthiness during inspection.
AM.III.M.K.7.	Explain appropriate procedures for propeller removal and installation.
AM.III.M.K.9.	Describe propeller synchronization and synchrophasing system operation.
.....	Explain beat frequency effects and phase angle adjustments.
AM.III.M.K.10.	Describe propeller anti-icing and de-icing system technologies.
Risk Management	**The applicant demonstrates the ability to identify, assess, and mitigate risks associated with:**
AM.III.M.R.1.	Unsafe acts when working around propellers.
AM.III.M.R.2.	Improper or incomplete propeller maintenance and inspections.
Skills	**The applicant demonstrates the ability to:**
AM.III.M.S.4.	Measure propeller blade angle.
AM.III.M.S.2.	Check propeller blade tracking for correctness.
AM.III.M.S.3.	Inspect a propeller for condition and airworthiness.
AM.III.M.S.6.	Perform propeller lubrication.
AM.III.M.S.5.	Perform a minor repair to a metal propeller blade.
AM.III.M.S.1.	Remove and install a fixed-pitch propeller.

Appendix A: Performance Standards and Safety

Regulatory compliance, maintenance performance, safety, and professional conduct apply across all Knowledge, Risk Management, and Skill elements in this Mechanic ACS, whether or not an individual element explicitly references them. These expectations guide interpretation of the standards, development of training, and evaluation throughout the Oral and Practical (O&P) tests.

Regulatory Compliance and Maintenance Performance

All elements must be interpreted and applied in the context of applicable regulatory requirements, maintenance information, and performance rules, including 14 CFR § 43.13. These requirements provide the basis for acceptable maintenance methods, practices, and results without being repeated in each element.

When test environment limitations prevent full task completion or verification, applicants must recognize the limitation and explain the applicable standard and the action a certificated mechanic would take.

Safety and Professional Conduct

Safe work practices and professional judgment apply throughout task preparation, performance, and explanation. They include appropriate hazard controls, protection of personnel and equipment, clear communication, and accurate representation of work and findings.

Evaluators must maintain a safe test environment and must not require unsafe actions. Applicants must recognize when safety or compliance cannot be established and respond appropriately.

Disregard for applicable regulatory requirements, maintenance performance standards, safety, or professional conduct may result in test failure.

Appendix B: Competency Domains for Aviation Mechanics

The Competency Domains describe professional behaviors and work practices that support application of the ACS elements during training and evaluation. The observable behaviors (OBs) illustrate their application in maintenance contexts and do not establish separate ACS test elements.

Domain 1.0	**Technical Task Performance***: Perform maintenance, inspection, and operational tasks to the required standard using correct methods, tools, and safety precautions.*
OB 1.1	Perform maintenance tasks using correct methods, techniques, and practices.
OB 1.2	Verify work against applicable specifications and tolerances.
OB 1.3	Recognize apparent errors or unsafe conditions in maintenance instructions and seek clarification before proceeding.
OB 1.4	Complete tasks without introducing new discrepancies or hazards.
OB 1.5	Confirm task completion through required checks, tests, or inspections.
Domain 2.0	**Application of Procedures:** *Select, interpret, and apply current maintenance procedures appropriate to the task.*
OB 2.1	Locate the correct maintenance procedure or instruction applicable to the task.
OB 2.2	Interpret instructions, cautions, and warnings accurately and in context.
OB 2.3	Apply procedures as written, without unauthorized deviations.
OB 2.4	Verify the revision status of procedures and ensure that instructions are up to date.
OB 2.5	Identify when procedures are missing or incomplete and determine an acceptable alternative consistent with § 43.13(a).
Domain 3.0	**Regulatory and Airworthiness Responsibility:** *Apply regulatory requirements and airworthiness responsibilities to maintenance and return-to-service decisions.*
OB 3.1	State whether a discrepancy affects airworthiness and why.
OB 3.2	Identify mechanic privileges, limitations, and required authorizations.
OB 3.3	Complete documentation accurately, legibly, and in accordance with regulations.
OB 3.4	Recognize when a condition requires grounding, deferral, or further inspection.
OB 3.5	Escalate regulatory or airworthiness concerns appropriately.
Domain 4.0	**Troubleshooting and Technical Decision-Making:** *Diagnose malfunctions using logical troubleshooting methods, interpret results, and select appropriate corrective actions or escalation paths.*
OB 4.1	Follow a logical troubleshooting sequence based on symptoms and data.
OB 4.2	Select appropriate tests or inspections to isolate faults.
OB 4.3	Interpret test results accurately and identify likely root causes.
OB 4.4	Select corrective actions supported by prescribed methods, techniques, and practices.
OB 4.5	Recognize when troubleshooting must stop due to a lack of information or authority.
Domain 5.0	**Safety and Risk Management in Maintenance:** *Identify hazards, assess risks, and implement effective controls to maintain a safe maintenance environment.*
OB 5.1	Identify hazards associated with the task before beginning work.
OB 5.2	Implement appropriate risk controls (PPE, lockout/tagout, FOD control).
OB 5.3	Adjust actions when new hazards or changing conditions arise.
OB 5.4	Stop any work when safety cannot be assured and state why.
OB 5.5	Demonstrate awareness of personal and environmental safety impacts.
Domain 6.0	**Human Factors and Situational Awareness:** *Recognize and manage human performance limitations and operational influences to maintain situational awareness and prevent errors.*

OB 6.1	Manage distractions and interruptions to maintain task continuity.
OB 6.2	Recognize signs of fatigue, time pressure, or workload overload.
OB 6.3	Use cross-checks, pauses, or verification steps to prevent error.
OB 6.4	Identify error traps and take steps to mitigate them.
OB 6.5	Demonstrate awareness of surroundings, equipment, and personnel.
Domain 7.0	**Communication and Coordination:** *Communicate maintenance information clearly and accurately, both orally and in writing, to ensure continuity of work and operational safety.*
OB 7.1	Communicate intended actions when needed for coordination or safety.
OB 7.2	Provide accurate, concise updates during task execution.
OB 7.3	Conduct effective turnovers, including task status and outstanding items.
OB 7.4	Ask clarifying questions when information is incomplete or ambiguous.
OB 7.5	Document actions and findings in a clear, complete, and traceable manner.
Domain 8.0	**Task Planning and Work Management:** *Plan, prioritize, and organize maintenance tasks and resources effectively, adjusting as needed to maintain control of work-in-progress.*
OB 8.1	Organize tools, parts, and documentation before beginning work.
OB 8.2	Sequence tasks based on dependencies and safety considerations.
OB 8.3	Manage time effectively and adjust priorities when needed.
OB 8.4	Control work in progress to prevent incomplete or unsafe conditions.
OB 8.5	Recognize when task conditions require stopping, reassessing, or escalating.
Domain 9.0	**Use of Tools, Equipment, and Digital Systems:** *Select, operate, and maintain tools, test equipment, and digital systems safely and effectively, recognizing limitations and required controls.*
OB 9.1	Select tools and equipment appropriate to the task.
OB 9.2	Check tool and equipment condition, serviceability, and calibration status, as applicable, before use.
OB 9.3	Use tools and equipment safely and within limitations.
OB 9.4	Navigate digital maintenance systems efficiently and accurately.
OB 9.5	Interpret digital data, test outputs, or system indications correctly.
Domain 10.0	**Quality, Error Management, and Continuous Improvement:** *Prevent, detect, and report errors or non-conformities and contribute to corrective actions and continuous improvement efforts.*
OB 10.1	Identify errors or non-conformities during task execution.
OB 10.2	Take corrective action or report issues according to procedures.
OB 10.3	Use checklists, job aids, or verification steps to prevent errors.
OB 10.4	Participate in discussions about causes and prevention of errors.
Domain 11.0	**Professionalism and Ethical Responsibility:** *Demonstrate integrity, accountability, and ethical judgment in all maintenance activities, upholding the standards of the aviation maintenance profession.*
OB 11.1	Recognize the limits of return-to-service authority and identify when additional authorization or oversight is required.
OB 11.2	Demonstrate honesty and accountability in all task actions.
OB 11.3	Treat procedures, data, and documentation with respect and diligence.
OB 11.4	Maintain a calm, respectful demeanor in challenging situations.