| **Skills** | **Airman Certification Standards—Powerplant** | **Description of qualifying work experience** |
| --- | --- | --- |
| **III. Powerplant** | **Subject A. Reciprocating Engines** |  |
| AM.III.A.S1 | Perform a cylinder assembly inspection. |  |
| AM.III.A.S2 | Operate and troubleshoot a reciprocating engine. |  |
| AM.III.A.S3 | Install piston and knuckle/wrist pin(s). |  |
| AM.III.A.S4 | Identify the parts of a cylinder. |  |
| AM.III.A.S5 | Identify the parts of a crankshaft. |  |
| AM.III.A.S6 | Identify and inspect various types of bearings. |  |
| AM.III.A.S7 | Inspect and rig cable and push-pull engine controls. |  |
| AM.III.A.S8 | Locate top dead-center position of number one cylinder. |  |
| AM.III.A.S9 | Install a cylinder on a horizontally-opposed engine. |  |
|  | **Subject B. Turbine Engines** |  |
| AM.III.B.S1 | Identify different turbine compressors. |  |
| AM.III.B.S2 | Identify different types of turbine engine blades. |  |
| AM.III.B.S3 | Identify components of turbine engines. |  |
| AM.III.B.S4 | Map airflow direction and pressure changes in turbine engines. |  |
| AM.III.B.S5 | Remove and install a fuel nozzle in a turbine engine. |  |
| AM.III.B.S6 | Inspect a combustion liner. |  |
| AM.III.B.S7 | Locate the procedures for the adjustment of a fuel control unit. |  |
| AM.III.B.S8 | Perform turbine engine inlet guide vane and compressor blade inspection. |  |
| AM.III.B.S9 | Locate the installation or removal procedures for a turbine engine. |  |
| AM.III.B.S10 | Locate and explain the procedure for trimming a turbine engine. |  |
| AM.III.B.S11 | Identify damaged turbine engine blades. |  |
| AM.III.B.S12 | Identify causes for turbine engine performance loss. |  |
| AM.III.B.S13 | Inspect the first two stages of a turbine fan or compressor for foreign object damage. |  |
|  | **Subject C. Engine Inspection** |  |
| AM.III.C.S1 | Perform a compression check on a cylinder. |  |
| AM.III.C.S2 | Evaluate powerplant for compliance with FAA-approved or manufacturer data. |  |
| AM.III.C.S3 | Perform a powerplant records inspection. |  |
| AM.III.C.S4 | Inspect for compliance with applicable ADs. |  |
| AM.III.C.S5 | Determine engine installation eligibility. |  |
| AM.III.C.S6 | Determine compliance with engine specifications, TCDS, or engine listings. |  |
| AM.III.C.S7 | Perform a portion of a required inspection on an engine. |  |
| AM.III.C.S8 | Check engine controls for proper operation and adjustment. |  |
| AM.III.C.S9 | Inspect an engine for leaks after performing maintenance. |  |
| AM.III.C.S10 | Inspect an aircraft engine accessory for serviceability. |  |
| AM.III.C.S11 | Inspect engine records for time or cycles on life-limited parts. |  |
| AM.III.C.S14 | Inspect an engine mount to determine serviceability. |  |
|  | **Subject D. Engine Instrument Systems** |  |
| AM.III.D.S1 | Troubleshoot an engine oil temperature/pressure instrument system. |  |
| AM.III.D.S2 | Troubleshoot a low fuel pressure indicating system. |  |
| AM.III.D.S3 | Remove, inspect, and install a fuel-flow transmitter. |  |
| AM.III.D.S4 | Remove, inspect, and install fuel-flow gauge. |  |
| AM.III.D.S5 | Identify components of an electric tachometer system. |  |
| AM.III.D.S6 | Check fuel-flow transmitter power supply. |  |
| AM.III.D.S7 | Inspect tachometer markings for accuracy. |  |
| AM.III.D.S8 | Perform resistance measurements of thermocouple indication system. |  |
| AM.III.D.S9 | Remove, inspect, and install turbine engine exhaust gas temperature (EGT) component. |  |
| AM.III.D.S10 | Locate procedures for troubleshooting a turbine EPR system. |  |
| AM.III.D.S11 | Troubleshoot a tachometer system. |  |
| AM.III.D.S12 | Replace a cylinder head temperature thermocouple. |  |
| AM.III.D.S13 | Inspect EGT probes. |  |
| AM.III.D.S14 | Locate and inspect engine low fuel pressure warning system components. |  |
| AM.III.D.S15 | Check aircraft engine manifold pressure gauge for proper operation. |  |
| AM.III.D.S16 | Inspect a manifold pressure system. |  |
| AM.III.D.S17 | Repair a low oil pressure warning system. |  |
| AM.III.D.S18 | Troubleshoot an EGT indicating system. |  |
| AM.III.D.S19 | Inspect an oil temperature probe. |  |
|  | **Subject E. Engine Fire Protection Systems** |  |
| AM.III.E.S1 | Troubleshoot and repair an engine fire detection system. |  |
| AM.III.E.S2 | Identify fire detection sensing units. |  |
| AM.III.E.S3 | Inspect fire detection continuous loop system. |  |
| AM.III.E.S4 | Inspect fire detection thermal switch or thermocouple system. |  |
| AM.III.E.S5 | Locate troubleshooting procedures for a fire detection system. |  |
| AM.III.E.S6 | Inspect engine fire extinguisher system blowout plugs. |  |
| AM.III.E.S7 | Inspect a turbine engine fire extinguisher container. |  |
| AM.III.E.S8 | Inspect fire extinguisher discharge circuit. |  |
| AM.III.E.S9 | Troubleshoot and repair a fire extinguishing system. |  |
| AM.III.E.S10 | Inspect a fire extinguisher container discharge cartridge (squib). |  |
| AM.III.E.S11 | Inspect fire extinguisher container and determine hydrostatic test requirements. |  |
| AM.III.E.S12 | Inspect flame detectors for operation. |  |
| AM.III.E.S13 | Check operation of fire warning press-to-test and troubleshoot faults. |  |
| AM.III.E.S14 | Identify continuous-loop fire detection system components. |  |
|  | **Subject F. Engine Electrical Systems** |  |
| AM.III.F.S1 | Inspect engine electrical wiring, switches, and protective devices. |  |
| AM.III.F.S2 | Determine suitability of a replacement component by part number. |  |
| AM.III.F.S3 | Replace an engine-driven generator or alternator. |  |
| AM.III.F.S4 | Inspect an engine-driven generator or alternator in accordance with manufacturer’s instructions. |  |
| AM.III.F.S5 | Troubleshoot an aircraft electrical generating system. |  |
| AM.III.F.S6 | Remove and install an engine direct-drive electric starter. |  |
| AM.III.F.S7 | Troubleshoot a direct-drive electric starter system. |  |
| AM.III.F.S8 | Inspect an electrical system cable. |  |
| AM.III.F.S9 | Determine wire size for engine electrical system. |  |
| AM.III.F.S10 | Repair a broken engine electrical system wire. |  |
| AM.III.F.S11 | Replace a wire bundle lacing. |  |
| AM.III.F.S12 | Troubleshoot an electrical system using a schematic or wiring diagram. |  |
| AM.III.F.S13 | Fabricate a bonding jumper. |  |
| AM.III.F.S14 | Inspect a turbine engine starter generator. |  |
| AM.III.F.S15 | Inspect engine electrical connectors. |  |
|  | **Subject G. Engine Lubrication Systems** |  |
| AM.III.G.S1 | Inspect an oil cooler or oil lines. |  |
| AM.III.G.S2 | Determine the correct type of oil for a specific engine. |  |
| AM.III.G.S3 | Identify turbine engine oil filter bypass indicator. |  |
| AM.III.G.S4 | Determine approved oils for different climatic temperatures. |  |
| AM.III.G.S5 | Locate procedures for obtaining oil samples. |  |
| AM.III.G.S6 | Inspect an oil filter or screen. |  |
| AM.III.G.S7 | Perform oil pressure adjustment. |  |
| AM.III.G.S8 | Identify oil system components. |  |
| AM.III.G.S9 | Replace an oil system component. |  |
| AM.III.G.S10 | Identify oil system flow. |  |
| AM.III.G.S11 | Troubleshoot an engine oil pressure malfunction. |  |
| AM.III.G.S12 | Troubleshoot an engine oil temperature system. |  |
| AM.III.G.S13 | Identify types of metal found in an oil filter. |  |
| AM.III.G.S14 | Remove and inspect an engine chip detector. |  |
|  | **Subject H. Ignition and Starting Systems** |  |
| AM.III.H.S1 | Set magneto internal timing. |  |
| AM.III.H.S2 | Time magneto to engine. |  |
| AM.III.H.S3 | Remove, clean, and install spark plug. |  |
| AM.III.H.S4 | Troubleshoot and repair an ignition system. |  |
| AM.III.H.S5 | Inspect an electrical starting system. |  |
| AM.III.H.S6 | Inspect magneto breaker points. |  |
| AM.III.H.S7 | Inspect an ignition harness. |  |
| AM.III.H.S8 | Inspect a magneto impulse coupling. |  |
| AM.III.H.S9 | Troubleshoot an electrical starting system. |  |
| AM.III.H.S10 | Troubleshoot ignition switch circuit. |  |
| AM.III.H.S11 | Inspect and check gap of spark plugs. |  |
| AM.III.H.S12 | Identify the correct spark plugs used for replacement installation. |  |
| AM.III.H.S13 | Troubleshoot a turbine or reciprocating engine ignition system. |  |
| AM.III.H.S14 | Identify the correct igniter plug and replace turbine engine igniter plugs. |  |
| AM.III.H.S15 | Troubleshoot turbine engine igniters. |  |
| AM.III.H.S16 | Inspect turbine engine ignition system. |  |
| AM.III.H.S17 | Inspect igniters. |  |
|  | **Subject I. Engine Fuel and Fuel Metering Systems** |  |
| AM.III.I.S1 | Inspect, troubleshoot, and repair a continuous-flow fuel injection system. |  |
| AM.III.I.S2 | Remove, inspect, and install a turbine engine fuel nozzle. |  |
| AM.III.I.S3 | Identify carburetor components. |  |
| AM.III.I.S4 | Identify fuel and air flow through a float-type carburetor. |  |
| AM.III.I.S5 | Remove and install a carburetor main metering jet. |  |
| AM.III.I.S6 | Inspect a carburetor fuel inlet screen. |  |
| AM.III.I.S7 | Adjust a continuous-flow fuel injection system. |  |
| AM.III.I.S8 | Inspect the needle, seat, and float level on a float-type carburetor. |  |
| AM.III.I.S9 | Remove and install a float-type carburetor. |  |
| AM.III.I.S10 | Adjust carburetor idle speed and mixture. |  |
| AM.III.I.S11 | Locate procedures for a turbine engine revolutions per minute (rpm) overspeed inspection. |  |
| AM.III.I.S12 | Inspect fuel metering cockpit controls for proper adjustment. |  |
| AM.III.I.S13 | Locate procedures for adjusting a hydromechanical fuel control unit. |  |
| AM.III.I.S14 | Locate and explain procedures for removing and installing a turbine engine fuel control unit. |  |
| AM.III.I.S15 | Identify components of an engine fuel system. |  |
| AM.III.I.S16 | Remove and install an engine-driven fuel pump. |  |
| AM.III.I.S17 | Inspect a remotely-operated fuel valve for proper operation. |  |
| AM.III.I.S18 | Locate and identify fuel selector placards. |  |
| AM.III.I.S19 | Inspect a main fuel filter assembly for leaks. |  |
| AM.III.I.S20 | Inspect fuel boost pump. |  |
| AM.III.I.S21 | Locate and identify a turbine engine fuel heater. |  |
| AM.III.I.S22 | Inspect fuel pressure warning light function. |  |
| AM.III.I.S23 | Adjust fuel pump fuel pressure. |  |
| AM.III.I.S24 | Inspect engine fuel system fluid lines and components. |  |
| AM.III.I.S25 | Troubleshoot abnormal fuel pressure. |  |
| AM.III.I.S26 | Locate the procedures for troubleshooting a turbine engine fuel heater system. |  |
| AM.III.I.S27 | Remove, clean, and reinstall an engine fuel filter. |  |
| AM.III.I.S28 | Troubleshoot engine fuel pressure fluctuation. |  |
| AM.III.I.S29 | Inspect fuel selector valve. |  |
| AM.III.I.S30 | Determine correct fuel nozzle spray pattern. |  |
|  | **Subject J. Reciprocating Engine Induction and Cooling Systems** |  |
| AM.III.J.S1 | Inspect a carburetor heat system. |  |
| AM.III.J.S2 | Inspect an alternate air valve for proper operation. |  |
| AM.III.J.S3 | Inspect an induction system drain for proper operation. |  |
| AM.III.J.S4 | Inspect engine exhaust augmenter cooling system. |  |
| AM.III.J.S5 | Service an induction air filter. |  |
| AM.III.J.S6 | Inspect a turbocharger for leaks and security. |  |
| AM.III.J.S7 | Inspect and service a turbocharger waste gate. |  |
| AM.III.J.S8 | Inspect an induction system for obstruction. |  |
| AM.III.J.S9 | Inspect an air intake manifold for leaks. |  |
| AM.III.J.S10 | Locate the proper specifications for coolant used in a liquid-cooled engine. |  |
| AM.III.J.S11 | Inspect reciprocating engine cooling ducting (rigid or flexible) or baffle seals. |  |
| AM.III.J.S12 | Identify components of a turbocharger induction system. |  |
| AM.III.J.S13 | Identify exhaust augmenter-cooled engine components. |  |
| AM.III.J.S14 | Inspect an air inlet duct for security. |  |
| AM.III.J.S15 | Perform an induction and cooling system inspection. |  |
| AM.III.J.S16 | Repair a cylinder baffle. |  |
| AM.III.J.S17 | Inspect cylinder baffling. |  |
| AM.III.J.S18 | Inspect cowl flap system for normal operation. |  |
| AM.III.J.S19 | Inspect cylinder cooling fins. |  |
|  | **Subject K. Turbine Engine Air Systems** |  |
| AM.III.K.S1 | Perform an induction and cooling system inspection. |  |
| AM.III.K.S2 | Identify location of turbine engine insulation blankets. |  |
| AM.III.K.S3 | Identify turbine engine cooling air flow. |  |
| AM.III.K.S4 | Inspect turbine engine cooling ducting (rigid or flexible) or baffle seals. |  |
| AM.III.K.S5 | Inspect a turbine engine air intake anti-ice system. |  |
| AM.III.K.S6 | Identify turbine engine ice and rain protection system components. |  |
| AM.III.K.S7 | Inspect a particle separator. |  |
| AM.III.K.S8 | Inspect/check a bleed air system. |  |
|  | **Subject L. Engine Exhaust and Reverser Systems** |  |
| AM.III.L.S1 | Identify the type of exhaust system on a particular aircraft. |  |
| AM.III.L.S2 | Inspect a turbine engine exhaust system component. |  |
| AM.III.L.S3 | Inspect a reciprocating engine exhaust system. |  |
| AM.III.L.S4 | Inspect exhaust system internal baffles or diffusers. |  |
| AM.III.L.S5 | Inspect exhaust heat exchanger. |  |
| AM.III.L.S6 | Locate procedures for testing and troubleshooting a turbine thrust reverser system. |  |
| AM.III.L.S7 | Perform a pressure leak check of a reciprocating engine exhaust system. |  |
|  | **Subject M. Propellers** |  |
| AM.III.M.S1 | Remove and install a propeller. |  |
| AM.III.M.S2 | Check blade static tracking. |  |
| AM.III.M.S3 | Inspect a propeller for condition and airworthiness. |  |
| AM.III.M.S4 | Measure propeller blade angle. |  |
| AM.III.M.S5 | Perform a minor repair to a metal propeller blade. |  |
| AM.III.M.S6 | Perform propeller lubrication. |  |
| AM.III.M.S7 | Locate and explain the procedures for balancing a fixed-pitch propeller. |  |
| AM.III.M.S8 | Adjust a propeller governor. |  |
| AM.III.M.S9 | Identify propeller range of operation. |  |
| AM.III.M.S10 | Perform a 100-hour inspection of a propeller and determine airworthiness. |  |
| AM.III.M.S11 | Determine what minor propeller alterations are acceptable using the propeller specifications,  TCDS, and listings. |  |
| AM.III.M.S12 | Inspect and repair a propeller anti-icing or de-icing system. |  |
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