

Work Processes Schedule

POWERPLANT MECHANIC (AIRCRAFT ENGINE MECHANIC)

RAPIDS: 1045N

O*NET/SOC: 49-3011.00

REVISION DATE: 12/2014

Repairs and maintains the operating condition of aircraft engines. Replaces or repairs worn defective, or damaged components; disassembles and inspects engine parts for wear, warping, cracks, and leaks; reassembles engine and installs engine in aircraft; listens to operating engine to detect and diagnose malfunctions; tests engine operations; removes engine from aircraft using hoist or forklift trucks; reads and interprets manufacturer's maintenance manuals and service bulletins. Adjusts, repairs or replaces electrical wiring system and aircraft accessories. Inspect, identify, remove and treat aircraft corrosion and perform aircraft cleaning. Inspect, check, service and repair propeller synchronizing.

Applicable Ratings/MOS

USMC MOS 6023, 6033, 6062, 6112, 6113, 6114, 6116, 6122, 6123, 6124, 6132, 6152, 6153, 6154, 6156, 6172, 6173, 6174, 6176, 6212, 6213, 6214, 6216, 6217, 6218, 6222, 6223, 6226, 6227, 6242, 6252, 6253, 6256, 6257, 6258, 6276

USCG AMT

USN AD, AWF

Related Instruction

Any trade related schools/courses totaling 216 hours.

Additional Requirement

AWF must have completed AD (A) school ****OR**** FLEET TRAINING CHANGE BEGINNING 04MAR2013: PREREQUISITE COURSES 050-1500 100-0109 100-2021 ***AND*** C-050-2011 EO Must have NEC 5633

Total Hours: **3000**

Skill	Description	Hours
A	GENERAL TASKS	
	<p>Demonstrate knowledge in all of the following areas.</p> <ol style="list-style-type: none"> 1. BASIC ELECTRICITY - 100 hrs Calculate and measure capacitance and inductance; calculate and measure electrical power; measure voltage, current, and resistance, and continuity; determine the relationship of voltage, current, and resistance in electrical circuits; read and interpret aircraft electrical circuit diagrams, including solid state devices and logic functions; inspect and service batteries. 2. AIRCRAFT DRAWINGS - 100 hrs Use aircraft drawings, symbols, and system schematics; draw sketches of repairs and alterations; use blueprint information; use graphs and charts. 3. WEIGHT AND BALANCE - 20 hrs Weigh aircraft; perform complete weight-and-balance check and record data. 4. FLUID LINES AND FITTINGS - 25 hrs Fabricate and install rigid and flexible fluid lines and fittings. 5. MATERIALS AND PROCESSES - 50 hrs Identify and select appropriate non-destructive testing methods; perform dye penetrant, eddy current, ultrasonic, and magnetic particle inspections; perform basic heat-treating processes; identify and select aircraft hardware and materials; inspect and check welds; perform precision measurements. 6. GROUND OPERATION AND SERVICING - 150 hrs Start, ground operate, move, service, and secure aircraft and identify typical ground operation hazards; identify and select fuels. 7. CLEANING AND CORROSION CONTROL - 145 hrs Identify and select cleaning materials, inspect, identify, remove, and treat aircraft corrosion and perform aircraft cleaning. 8. MATHEMATICS - 75 hrs Extract roots and raise numbers to a given power; determine areas and volumes of various geometrical 	1100

shapes; solve ratio, proportion, and percentage problems; perform algebraic operations involving addition, subtraction, multiplication, and division of positive and negative numbers.

9. MAINTENANCE FORMS AND RECORDS - 125 hrs

Write descriptions of work performed including aircraft discrepancies and corrective actions using typical aircraft maintenance records; complete required maintenance forms, records, and inspection reports.

10. BASIC PHYSICS - 70 hrs

Use and understand the principles of simple machines; sound, fluid, and heat dynamics; basic aerodynamics; aircraft structures; and theory of flight.

11. MAINTENANCE PUBLICATIONS - 70 hrs

Demonstrate ability to read, comprehend, and apply information contained in FAA and manufacturer's aircraft maintenance specifications, data sheets, manuals, publications, and related Federal Aviation Regulations, Airworthiness Directives, and Advisory materials, read technical data.

12. MECHANIC PRIVILEGES AND LIMITATIONS - 70 hrs

Exercise mechanic privileges within the limitations prescribed by FAR 65.

13. AVIATION SAFETY - 100 hrs

Fuels, lubricants, or hydraulic fluids; flammable cements, rosins, sealants, paints and thinners; fluids under pressure; compressed gasses, including oxygen; batteries; aviation ordnance and pyrotechnics; electrical and electronic circuits; operating radio transmitters and radar systems; hazardous noise sources.

POWERPLANT THEORY AND MAINTENANCE

Demonstrate knowledge in all of the following areas.

1. RECIPROCATING ENGINES - 100 hrs

Inspect and repair a radial engine; overhaul reciprocating engine; inspect, check, service, and repair reciprocating engines and engine installations; install, troubleshoot, and remove reciprocating engine.

2. TURBINE ENGINES - 250 hrs

Overhaul turbine engine; inspect, check, service, and repair turbine engines and turbine engine installations; install, troubleshoot, and remove turbine engines.

3. ENGINE INSPECTION - 250 hrs

Perform powerplant conformity and airworthiness inspections.

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POWERPLANT SYSTEMS AND COMPONENTS

Demonstrate knowledge in all of the following areas.

1. ENGINE INSTRUMENT SYSTEMS - 100 hrs

Troubleshoot, service, and repair electrical and mechanical fluid rate-of-flow indicating systems; inspect, check, service, troubleshoot, and repair electrical and mechanical engine temperature, pressure, and R.P. M indicating systems.

2. ENGINE FIRE PROTECTION SYSTEMS - 100 hrs

Inspect, check, service, troubleshoot, and repair engine fire detection and extinguishing systems.

3. ENGINE ELECTRICAL SYSTEMS - 100 hrs

Repair engine electrical system components; install, check, and service engine electrical wiring, controls, switches, indicators, and protective devices.

4. LUBRICATING SYSTEMS - 100 hrs

Identify and select lubricants; repair engine lubrication system components; inspect, check, service, troubleshoot, and repair engine lubrication systems.

5. IGNITION AND STARTING SYSTEMS - 100 hrs

Overhaul magneto and ignition harness; inspect, service, troubleshoot, and repair reciprocating and turbine engine ignition systems and components; inspect, service, troubleshoot, and repair turbine engine electrical starting systems; inspect, service, and troubleshoot turbine engine pneumatic starting systems.

6. FUEL METERING SYSTEM - 100 hrs

Troubleshoot and adjust turbine engine fuel metering systems and electronic engine fuel controls;

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overhaul carburetor; repair engine fuel metering system components; inspect, check, service, troubleshoot, and repair reciprocating and turbine engine fuel metering systems.

7. ENGINE FUEL SYSTEMS - 100 hrs

Repair engine fuel system components; inspect, check, service, troubleshoot, and repair engine fuel systems.

8. INDUCTION AND ENGINE AIRFLOW SYSTEMS - 100 hrs

Inspect, check, troubleshoot, service, and repair engine ice and rain control systems; inspect, check, troubleshoot, service, and repair heat exchangers, supercharger and turbine engine airflow and temperature control systems; inspect, check, service, and repair carburetor air intake and induction manifolds.

9. ENGINE COOLING SYSTEMS - 100 hrs

Repair engine cooling system components; inspect, check, troubleshoot, service, and repair engine-cooling systems.

10. ENGINE EXHAUST SYSTEM COMPONENTS - 100 hrs

Repair engine exhaust system components; inspect, check, troubleshoot, service, and repair engine exhaust systems; troubleshoot and repair engine thrust reverser systems and related components.

11. PROPELLERS - 100 hrs

Inspect, check, service, and repair propeller synchronizing and ice control systems; identify and select propeller lubricants; balance propellers; repair propeller control systems components; inspect, check, service, and repair fixed-pitch, constant-speed, and feathering propellers and propeller governing systems; install, troubleshoot, and remove propellers; repair aluminum alloy propeller blades.

12. UNDUCTED FANS - 100 hrs

Inspect and troubleshoot unducted fan systems and components.

13. AUXILIARY POWER UNITS - 100 hrs

Inspect, check, service and troubleshoot turbine-driven auxiliary power units.