

## AIRCRAFT MECHANIC

This is journey level work in the inspection, maintenance, modification, and repair of airframes, powerplants and related systems for fixed wing and/or rotary aircraft. Employees conduct periodic major and minor inspections on aircraft, detect and analyze technical problems, and make the necessary repairs to other related systems. Work consists of a full range of journey level duties from major reciprocating and turbine engine overhauls and airframe repairs to the more routine brake and tire changes. Work is performed under general supervision and may be reviewed and inspected in progress or upon completion. Work is evaluated for effective and efficient utilization of materials, equipment and labor, and for accuracy and compliance with instructions or maintenance directives. Employees may act as a lead worker to instruct, train and supervise other mechanics or helpers. Work may include other duties as assigned.

### I. DIFFICULTY OF WORK:

Complexity of Work - Employees perform a wide range of related duties associated with the routine maintenance, repair and modification of aircraft. Work includes the inspection of the powerplant and airframe using instrumentation, dye penetrants and other non-destructive testing; troubleshooting, detecting and analyzing technical problems in multiple aircraft systems; and repairing or replacing all aircraft components as necessary to conform to operating efficiency, safety or FAA directives. Work ranges from engine changes and overhauls, major airframe rebuilding, and detailed annual inspections to tire and battery replacement, researching maintenance files and manuals, and installing modification kits. Work also includes cutting and shaping metal, repairing tubular structures, riveting, and calibrating and adjusting equipment. Employees will also maintain maintenance logs, design and build jigs and tools, weld various types of metal, cut and repair/replace fabric surfaces, and conduct static system and other component checks. Employees may fly aircraft on test flights or accompany pilots on test flights.

Intricacy - Work assignments can vary from routine checking and replacement of aircraft equipment to conducting very precise static and dynamic balancing of rotor blades and other components. Torque wrenches are used to tighten fittings to exact torques. Honing cylinders, grinding valves, and constructing or repairing other components often requires tolerances to .001 inches. Rigging and static balancing the control system after repair requires precise measurements and adjustments. Checking cylinder compression, changing magnetos and resetting the timing, and performing other similar functions requires moderate calibration, adjustment and checking.

Controls Over Work - Assignments are received in the form of oral work orders, written log entries describing the problem or setting the inspection time, or FAA Airworthiness Directives and other maintenance/service bulletins. Employees are expected to independently perform routine work, research maintenance and service manuals, and complete all necessary repair/inspection reports and entries. New or unusually assignments may be accompanied by more detailed instructions. On most repair and inspection jobs, employees are required by FAA rules and regulations to certify that their own work is in compliance with these rules and regulations. On major overhauls, repairs, alterations or inspections, the employee's work must be reviewed and certified by an Inspector (IA certification) authorized by the Federal Aviation Administration.

Judgmental Demands - Employees use standard aircraft service and maintenance manuals, equipment operating instructions, AD and other maintenance bulletin files, and FAA rules and regulations. Employee will occasionally interpret these regulations and make decisions when conflicts exist between reference sources. Employees will also design and build jigs and special tools as necessary

and at times assist with the design and implementation of modifications to aircraft to suit individual agency needs. During inspections and the troubleshooting of malfunctions, employees will inspect worn parts and determine if replacement is necessary, and will also inspect faulty parts, components or systems and determine the extent of repair work necessary.

## II. RESPONSIBILITY:

Potential - Incomplete inspections, misinterpretation of an AD or maintenance bulletin, or faulty repair work could lead to damage or destruction of aircraft and to possible injury or loss of life to pilots and passengers.

Care and Attention - Inspections must be performed meticulously in order to avoid overlooking worn or defective parts, components or systems. Repair work must be performed precisely as outlined in shop manuals.

## III. PHYSICAL EFFORT:

Intensity of Effort - Work typically involves walking, standing, bending, stooping and performing handwork in awkward positions. More intensive effort is required when occasionally climbing, lifting and carrying heavy and awkward parts.

Frequency and Duration - The performance of repair work and inspections involving limited strain is fairly continuous. The more intensive physical efforts are only required intermittently throughout the workday.

## IV. WORK SURROUNDINGS AND HAZARDS:

Worker Surroundings - Most work is performed in a standard hangar/shop with acceptable environmental conditions. Some work is performed on the line at an airport and is subject to variable outside weather conditions. Employees are regularly in contact with and exposed to dust, dirt, grime, grease, fluids, solvents and the other usual shop conditions including some hazardous substances such as asbestos and paint fumes.

Hazardous Conditions - Employees are periodically exposed to noise which, over time, could cause some hearing loss. During normal inspection and repair work, injuries such as sprains and cuts to fingers, hands and legs are possible. Periodically, employees must work with and around moving parts and machinery which could cause major injuries.

## V. RECRUITMENT STANDARDS:

Knowledges, Skills and Abilities - Considerable knowledge of the principles of operation and the maintenance and repair requirements of reciprocating and turbine aircraft engines and their related systems. Considerable knowledge of airframe construction, repair and rigging. Working knowledge of the tools, equipment and methods used in the inspection, maintenance and repair of aircraft. Working knowledge of Federal Aviation Administration rules and regulation concerning aircraft inspection and repair. Ability to troubleshoot technical problems and to plan and complete repairs. Ability to read and interpret technical manual and bulletins, and to keep accurate records of work performed. Ability to use measuring instruments and tools used in aircraft repair. Ability to communicate effectively with other mechanics, engineers and pilots.

Minimum Training and Experience - Graduation from an FAA approved aviation maintenance technician school and one year of experience in aircraft inspection, maintenance and repair; or graduation from high school and three years of related experience; or an equivalent combination of training and experience.

Necessary Special Requirements - Possession of valid Federal Aviation Administration Airframe and Powerplant license. May require current certification by the EPA as a type I, II, III or Universal technician as required by CFR part 82, subpart F.

Special Note - This is a generalized representation of positions in this class and is not intended to identify essential function per ADA. Examples of work are primarily essential function of the majority of positions in this class, but may not be applicable to all positions.