

***Nothing in this job description restricts management's right to assign or reassign duties and responsibilities to this job at any time.***

**DUTIES** Serves as a Heavy Equipment Mechanic Apprentice in the Engineering and Maintenance Department (Department) at Ronald Reagan Washington National Airport (DCA) or Washington Dulles International Airport (IAD), Metropolitan Washington Airports Authority (Airports Authority). Participates in the formal, state-approved Trades Apprentice Employment Program of the Airports Authority to develop the knowledge, skills, and abilities necessary to become a journey level Heavy Equipment Mechanic. Receives on-the-job technical training and attends formal classroom technical training to build Heavy Equipment Mechanic knowledge and skills and to help Heavy Equipment Mechanics perform preventive maintenance, determine causes of operating problems, trace and locate defects, and make repairs and modifications to mechanical, electrical and hydraulic systems for light and heavy mobile gasoline and diesel fueled equipment (such as passenger boarding bridges (PBBs), crash/fire equipment, construction equipment, snow removal equipment, buses, trucks, police and passenger cars), and any other general or special purpose equipment maintained by the Airport Authority and assigned to the Department for maintenance or repair. Learns and performs progressively complex and responsible (elementary to semi-skilled to fully skilled) Heavy Equipment Mechanic work as knowledge, skills and abilities in the trade increase. Performs related functions.

Learns how to use, and gains full proficiency in using, manuals, technical guides, electrical diagrams and schematics, and the various hand tools and powered equipment common to equipment repair shops (such as screwdrivers, wrenches, pliers, drills, hydraulic hoists, wheel balancers, brake lathes, battery chargers, calipers, micrometers, etc. to test/analyze and repair equipment; computerized diagnostic machines, wheel alignment machines, engine analyzers, exhaust analyzers, etc. to test different electrical or mechanical components of equipment; and special tools such as compression test gauges, oxygen-acetylene torches and various welding equipment and machining equipment to test, repair, and fabricate components for equipment serviced by the shop.

Helps higher grade Heavy Equipment Mechanics in their work by assembling and transporting tools and materials to the job site, supplying requested tools and parts as work is performed, lifting and holding the work object(s), and cleaning up. Performs other tasks requiring elementary to fully proficient levels of Heavy Equipment Mechanic knowledge and skill consistent with the Trades Apprentice Employment Program.

As directed and guided by a higher grade Heavy Equipment Mechanic, builds knowledge and skills in the trade consistent with the apprenticeship program.

Performs preventive maintenance as scheduled and inspections to identify and correct deficiencies in heavy mobile equipment and vehicles as well as police cruisers, passenger sedans, and pickups. Preventive maintenance and inspections may include work such as changing oil and filters, checking hose connections, joints, bearings (jacks up axle, inserts bar and checks for abnormal amount of "play"), changing anti-freeze, doing major tune-ups, etc. Examines elements of equipment and diagnoses immediate and potential problems to determine proper course of action or repair. In consultation with immediate supervisor, initiates any corrective action that will bring the equipment and components

up to established maintenance standards, following maintenance manuals where available. May consult with equipment users to gather more information about the nature of operating difficulties. Enters comprehensive descriptions into the maintenance management system for all work performed. Test-drives vehicles to assure equipment is operating according to industry performance standards.

Rebuilds and overhauls large and small engine systems (including all engines installed on Airport transportation or special purpose vehicles), automatic and standard transmissions, crankshafts, front and rear differentials; measures, fits, and installs components such as pistons, valves, bearings and cylinders requiring clearances specified in manuals and manufacturer schematic drawings; replaces and adjusts brakes (to include brake shoes, drums, discs, pads, brake chambers and slack adjusters); repairs, rebuilds or adjusts steering gear and boosters (hydraulic or air operated); traces faults in electrical circuitry found in different types of equipment and performs repairs (such as the rewiring of a circuit board for dash panel lights); repairs or replaces components for pneumatic or hydraulic systems; disassembles, adjusts and repairs fuel injection systems and replaces fuel pumps; balances wheels; repairs or replaces speedometers, tachometers and other panel instruments; repairs or replaces mechanisms such as windshield wiper units and other cab control mechanisms.

Makes service calls to stalled or inoperative vehicles and equipment, on and off the Airport grounds, to include any area serviced by Airport owned or operated vehicles. Performs on-site repair so that equipment can be brought back to the shop for further repair or to move it to or from Airport Operations Area. (For example, may be required to jump-start or tow the vehicle to the shop, do electrical circuitry/battery analysis, and make appropriate repairs.) While on service calls, operates two-way radio, and electronic data collection devices.

Determines the cause of problems, identifies replacement parts and materials needed to make repairs, and makes repairs to equipment maintained by shop. Assists tool and parts attendants in researching possible substitutions available from other manufacturers or in the fabrication of replacements when that is possible. Performs inspections of vehicles and equipment and prepares labor, parts, and materials requirements for the development of itemized estimates. May perform minor bodywork such as replacing a panel on a Plane Mate, adjusting gangways on the mobile lounges or installing a door repaired by the paint shop.

Operates PBBs and other airport equipment as required and various heavy (and light) equipment either as a road test or to actually perform a needed function, such as using a self-propelled rotary broom to clear foreign objects and debris from runways and taxiways or an Airports Authority wrecker (crane, wheel-lift, and rollback) to recover and transport light and medium duty vehicles and equipment on and off airport property.

Gains and applies knowledge of US Environmental Protection Agency (EPA) regulations for proper handling of refrigerants, and knowledge of other codes and regulations pertinent to the trade in general and in an airport environment.

Assists in preparing and maintaining, or prepares and maintains, records of work orders, trouble calls and preventive maintenance; enters data into the Airports Authority's Computerized Maintenance Management System [CMMS].

Performs shop keeping tasks common to the trade including cleaning shop/work/living area. Stores and stocks materials and equipment, as assigned.

Drives a pick-up truck or similar vehicle (with tools, parts, etc.) to airside and landside work sites, and may drive to/from suppliers and other sites. Drives equipment to fueling stations, dispenses fuel and records amounts in fuel logs.

Communicates and interacts effectively with internal and external business contacts including, but not limited, to other members of the unit/team, other Airports Authority employees, tenants, and airline employees, tenants, concessionaires, vendors/suppliers.

Uses a computer and (a) modern office suite software (such as MS Office) to plan, schedule, communicate, word process (light word processing only), prepare and develop reports, and perform research (Internet use, as in searching for trades practices, parts, and technical manuals); (b) enterprise systems/software for requisitioning, time and attendance, and other functions; and (c) special systems/software to review equipment manuals, process work orders and perform other functions.

***Critical features of this job are described under the headings below. They may be subject to change through reasonable accommodation or otherwise.***

### **MINIMUM QUALIFICATIONS (MQs)**

To be rated qualified for this job, an applicant must meet the MQs listed below at the time of vacancy announcement closure.

***See Job Announcement.***

### **KNOWLEDGE, SKILLS, ABILITIES, AND OTHER FACTORS (KSAOs)**

The following KSAOs are required for successful performance of this job and are a basis for rating and ranking applicants who are found to meet the MQs. *Local, Federal, airport industry or Airports Authority specific bodies of knowledge listed below may be acquired on the job, typically; ability to rapidly acquire them is required at application/placement.*

1. Ability to learn bodies of knowledge and gain skills in the Heavy Equipment Mechanic trade consistent with the schedule for progression as an Apprentice in the Trades Apprentice Employment Program of the Airports Authority; this includes, but is not limited to, ability to acquire and apply (a) knowledge of Heavy Equipment Mechanic principles, terminology and accepted trade practices to progress from elementary and helper level work to full journey level

work, (b) skill in using hand and power tools such as hydraulic hoists, wheel balancers, torches, and metal cutting, grinding, and machining equipment to analyze problems, make adjustments and repairs, (c) skill in problem solving to select, organize, and logically process relevant information (verbal, numerical or abstract) to solve problems in the trade (using diagnostic tools, schematics/other references, troubleshooting techniques, etc.), and (d) knowledge of, and skill in, working safely in the trade in general and in an airport environment.

2. Skill in oral communication to understand verbal information (including instructions, descriptions and ideas), and to express such information verbally so that others will understand. Examples include exchanging information with a Supervisor, Leader, or higher grade Heavy Equipment Mechanic about trouble calls, procedures, and tools or parts needed.
3. Skill in written communication to understand written information (including instructions, descriptions and ideas), and to express such information in writing so that others will understand. Examples, consistent with programmatic progress, include reading technical-operational materials (such as technical manuals, maintenance schedules and work orders) and administrative-programmatic materials (such as Airports Authority supply procedures), and writing briefly about similar types of matters, such as closing out work orders.
4. Skill in using a computer and (a) modern office suite software (such as MS Office) to plan, schedule, communicate, word process (light word processing only), prepare and develop reports, and perform research (Internet use, as in searching on-line technical information systems such as Mitchell On-Demand, ALLDATA, etc.); (b) enterprise systems/software for requisitioning, time and attendance, and other functions; and (c) special systems/software used in the Department to process work orders and perform other functions.
5. Interpersonal skills to interact effectively with business contacts in a businesslike, customer service-oriented manner.

**RESPONSIBILITY** Is responsible for progressing in the Heavy Equipment Mechanic trade consistent with the Trades Apprentice Employment Program of the Airports Authority; this includes, but is not limited to, building knowledge and skills in the trade and performing progressively complex and responsible (elementary to semi-skilled to fully skilled) Heavy Equipment Mechanic work as knowledge and skills in the trade increase. Reports to a Supervisor in the trade. Typically, a higher grade Heavy Equipment Mechanic, or a Supervisor in the trade makes specific assignments, but some assignments may be generated by work order given to the incumbent consistent with progress in the trade. The incumbent follows accepted trade practices in selecting the methods, tools or materials to use consistent with progress in the trade. A higher grade Heavy Equipment Mechanic employee is available for advice and assistance on new work; work that has been mastered may be performed on own. The work may be monitored in progress, but it is typically reviewed upon completion to ensure it complies with instructions, accepted trade practices, timeliness, teamwork, customer service and other types of requirements and standards.

**EFFORT** Work is sedentary (in certain classroom situations) and physically demanding. Stands or stays in one position for long periods while performing some repairs. Frequently bends, stoops, kneels, and crawls under equipment or otherwise positions self to access hard to reach places.

Ascends large vehicles (such as crash/fire trucks) and PPB's stairs and roofs maintaining balance on PBB roof that may be slippery using personal protective gear. Bends forward on knees (to check, tighten or replace 75 lb. rollers on PBBs). Works in a kneeling and crouching position (to check components). Works in cramped positions, and carries or otherwise transports objects weighing up to 100 pounds (such as acetylene and oxygen tanks). Safely and effectively moves and positions heavier objects using the proper lifting equipment (such as engines and transmissions). Detects fuel or chemical leaks. Traces and establishes the condition of materials by their physical characteristics (e.g., metal parts discolored by overheating). May identify differences in working components by their sounds and tone, frequently working safely near or around equipment in operation (e.g. running motors, gears, and engines). In driving, operates vehicle using judgment in consideration of weather, traffic and other factors. Exchanges work information by telephone and two-way radio. Reviews technical manuals, diagrams, schematics and similar materials that contain small print. Maintains concentration while aligning parts and making adjustments to precise tolerances.

**WORKING CONDITIONS** Works mostly inside in an environment which is adequately lighted, ventilated and temperature controlled; however, occasionally does work outside in all types of weather. When working on stalled or inoperative vehicles that are disrupting the Air Operations Area is subject to pressure of making appropriate repairs as soon as possible. Is exposed to various risks and hazards: possible burns from caustic chemicals or heated engine components, possible electrical shock, possible falls from ladders or large mobile equipment, PBB roofs, and slips on oily flooring; flying metal parts from grinding; hazardous fumes and substances; and loud noises from revving heavy equipment engines and aircraft. Frequently works from personnel lifts and scissor lifts using fall protection equipment. May work for prolonged periods of time in noise levels in excess of 105db (as when servicing preconditioned air units on the PBBs). Takes care, follows general and/or special safety precautions, and wears protective equipment such as safety shoes, goggles, gloves, ear plugs, leather aprons, and other personal protective equipment as may be appropriate to the task at hand.

**OTHER SIGNIFICANT JOB ASPECTS** Subject to hold-over and recall on a 24-hour basis for essential services, shift coverage, equipment repairs and emergencies such as snow removal.