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

DUTIES At the full performance level, performs preventive maintenance, determines causes of operating problems, traces and locates defects, and makes repairs and modifications to mechanical, electrical and hydraulic systems for heavy mobile gasoline and diesel fueled equipment at the Dulles International Airport (Airport) (e.g., mobile lounges, Plane-Mates, 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 and assigned to the Division for maintenance or repair.

--Performs preventive maintenance as scheduled and inspections to identify and correct deficiencies in heavy mobile equipment and vehicles. 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.

--When a work order is issued, or when instructed by the supervisor/leader, 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 (such as lift system for operation of Plane-Mates); 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; repairs HVAC systems and frequently performs repairs without aid of updated schematic drawings or manuals.

--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 heating and air conditioning systems for equipment maintained by shop. Due to age of equipment maintained, parts are often no longer available and mechanic will assist tool and parts attendants in researching possible substitutions available from other manufacturers or in the fabrication of replacements when that is possible.

--Regularly uses screwdrivers, wrenches, pliers, drills, hydraulic hoists, wheel balancers, brake lathes, battery chargers, calipers, micrometers, etc. to test/analyze and repair equipment. Regularly uses computerized diagnostic machines, wheel alignment machines, engine analyzers, exhaust analyzers, etc. to test different electrical or mechanical components of equipment. Regularly uses various types of hand and powered equipment common to equipment repair shops, as well as 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.

--Performs comprehensive 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.

--May occasionally operate any piece of 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, asphalt or concrete broken off runway surface because of jet thrust.

--Operates Airports Authority wrecker (crane, wheel-lift, and rollback) to recover and transport light and medium duty vehicles and equipment on and off airport property.

--Performs recurring duties such as cleaning shop/work/living area as required or when instructed by the supervisor/leader; inputting information and completing work orders via computer for all equipment maintained, overhauled or repaired; and driving equipment to fueling station, dispensing fuel and recording amounts in fuel logs.

--Uses a computer for various applications (email, word processing, etc.), ERP (enterprise procurement-logistics system) applications, reviewing equipment manuals, online information systems, and to enter repair order data including labor charges and a complete description of work performed into the current Computerized Maintenance Management System (CMMS).

--As required, communicates by two-way radio with other Airport personnel including equipment and vehicle operators and supervisors.

--Drives shop vehicle to various locations, airside and landside, to perform assigned functions. Also operates PBB’s, mobile lounges, Plane-Mates, and other airport equipment as required.

*Performs other duties as required and as assigned

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 all four of the MQs listed below at the time of vacancy announcement closure.

1. A high school diploma, a Certificate of General Educational Development (GED), or an equivalent combination of education, experience and training.

2. Four years of repair and maintenance of heavy mobile gasoline and diesel fueled equipment (e.g., trucks, construction equipment, buses, crash/fire equipment) including mechanical and hydraulic systems and components and electrical troubleshooting; **or**

   Four years of approved apprenticeship training in repair and maintenance of heavy mobile gasoline and diesel fueled equipment and one year of repair and maintenance of heavy mobile gasoline and diesel fueled equipment (e.g., construction equipment, buses, trucks, crash/fire equipment) including mechanical, electrical, and hydraulic systems and components; **or**

   Four years of repair and maintenance experience of vehicles and 240 hours of heavy mechanical equipment vocational training.

PREFERRED QUALIFICATIONS (PQs)

The qualifications listed below (if any) are preferred and may be considered in the selection process, but are not required to be rated qualified for this job.

1. Possession of a Class B Commercial Driver's License (CDL).

2. Experience maintaining and repairing heavy equipment including crash/fire equipment, construction equipment, snow removal equipment, buses, trucks, police and passenger cars for a public or government entity.

3. Certification in Refrigerant Type I and Type II, and Automotive EPA certification.

4. Certification by the National Institute for Automotive Service Excellence (ASE) as an ASE mechanic.

5. National Institute of Automotive Service Excellence - ASE Certification for Automotive or Heavy Truck.

6. Licensed by the Commonwealth of Virginia as a State Safety Inspector.

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. *Any local, Federal, airport industry or Airports Authority specific bodies of knowledge listed below may be acquired on the job; ability to rapidly acquire them is required at application/placement.*

1. Knowledge of heavy industrial, commercial and light automotive equipment to maintain, troubleshoot, and repair various systems, subsystems, assemblies and parts of a wide variety of vehicles. This includes the mechanical makeup, operating characteristics (fluid level/viscosity, water temperature, fuel engagement/flow, allowable friction levels, etc.) and relationships for diesel, multi-fuel, and gasoline engines (supercharged and turbocharged); automatic and manual transmissions and gear reduction systems (torque converters, planetary gears, and more than one gear range); drive line assemblies (differentials, power dividers, and dual speed axles); hydraulic lifting, loading, turning and positioning systems (mechanical, hydraulic, and pneumatic controls) and HVAC systems.

2. Skill at the journey level as a heavy equipment mechanic exhibiting the:

    - Skill to apply mechanical knowledge in the above areas in order to maintain, troubleshoot and repair heavy mobile equipment; to identify potential and immediate deficiencies and to take corrective action as may be appropriate to the circumstances.

    - Skill in interpreting technical manuals, illustrations, specifications, diagrams, schematics, parts catalogues and similar guides (showing the complete assembly of engines and transmissions, and the layout of hydraulic systems with related pneumatic, electrical, and mechanical connections and controls) in order to troubleshoot problems and to make repairs and modifications.

    - Skill in using hand and power tools and equipment such as hydraulic hoists, wheel balancers, torches, arc and Metal Inert Gas (MIG) welders, and metal cutting, grinding, and machining equipment in order to make adjustments and repairs.

    - Skill in measuring, fitting, and installing a wide variety of components, such as pistons, valves, bearings, gears, and cylinders, to tolerances that are specified in manuals, or instructions that must be garnered from other sources. Applies skill in connecting, meshing, aligning and adjusting components to typically close tolerances in order to maintain the effective operation of the individual systems and the complete vehicle.

    - Skill in using diagnostic and test equipment (electrical, electronic, light, and pressure) in order to understand and to interpret the results of engine analyzers, exhaust analyzers, vacuum and fuel pump testers, injector testers, ignition timers, tachometers, ammeters, ohmmeters, manifold gauges, and similar devices.

3. Skill in problem solving to select, organize and logically process relevant information (verbal, numerical or abstract) to solve a problem. This includes ability to recognize subtle aspects of problems, identify relevant information and make balanced recommendations and decisions. Examples include interpreting technical manuals, illustrations, specifications, diagrams,

schematics, parts catalogues, and similar guides, including on-line computerized information systems, to troubleshoot breakdowns, service, and make repairs/modifications.

4. 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 include reading technical-operational materials (such as technical manuals, maintenance schedules and work orders) and administrative-programmatic materials (such as DCA and Airports Authority supply procedures), and writing briefly about similar types of matters, such as closing out work orders and completing Material Safety Data Sheets (MSDS).

5. 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 routine and non-routine operational and procedural information with co-workers, contractors and customers.

6. Interpersonal skills to interact with business contacts in a businesslike, customer service-oriented manner.

7. Knowledge, skill and ability in using a computer to work with Windows-based operating systems, spreadsheets, word processing and on–line technical information systems such as Mitchell On-Demand, ALLDATA, and industry maintenance management software and the Airports Authority's Computerized Maintenance Management System (CMMS).

8. Ability to work safely; knowledge of those safety rules and procedures needed to do so.

RESPONSIBILITY Responsible for troubleshooting, repairing, overhauling and performing preventive maintenance on various types of mobile and stationary equipment maintained by the shop. Mandated with maintaining all critical airport transportation systems such as mobile lounges, Plane-Mates, and PPBs as well as construction equipment, snow removal equipment, buses, and other equipment used or operated by the Airport. These systems require immediate and decisive servicing on a 24-hour basis to eliminate impacts on passenger conveyance. Assures that emergency repairs made to PBB's, mobile lounges, Plane-Mates in the Air Operations Area are safely made as soon as possible often independently assuming responsibility for using a thorough knowledge of systems to locate and analyze problems often involving complex interrelated systems, determine their significance, troubleshooting, and deciding course of action to take to minimize any "down time" and maintain passenger flow through the airport transport system. Frequently required to interface directly with the tenants and customers to solve problems related to the PBB's.

Often works independently and keeps supervisor informed of work progress or problems. Supervisor assigns work according to standard or special procedures. Supervisor's oversight focuses on work prioritization and compatibility with other jobs scheduled and emergencies, assuring that it is performed in a timely manner. Responsible for completing work assigned by Supervisor in a timely manner according to accepted trade practices and manufacturer specifications, and within prescribed processes and parameters.

EFFORT 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 mobile lounges or 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 PBB's). Works in a kneeing 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. Communicates by telephone and two-way radio. Reviews technical manuals, diagrams, schematics and similar materials that contain small print. Has the ability to concentrate while aligning parts and making adjustments to precise tolerances.

WORKING CONDITIONS Works in the shop and outside (in order to repair PBBs, vehicles, and equipment) in all kinds of weather when making service calls. When working on stalled or inoperative vehicles that are disrupting the Air Operations Area (such as a mobile lounge filled with traveling passengers) is subject to pressure of making appropriate repairs as soon as possible. Is exposed to: 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; moving vehicles in both fast moving and heavy traffic, e.g. Dulles Access Highway and the mobile lounge gates; flying metal parts from grinding; hazardous fumes and substances; and loud noises from revving heavy equipment engines and aircraft. Frequently works from man lifts and scissor lifts using fall protection gear. May work for prolonged periods of time in noise levels in excess of 105db (as when servicing Preconditioned air units on the PBB's). Takes care, follows general and/or special safety precautions, and wears protective gear such as safety shoes, goggles, gloves, ear plugs, leather aprons, and other personal protective gear 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.