



Bock Consulting

Job Analysis

Job Title	Operating Engineer Head – Maintenance Engineers (AVM) Worker
DOT Number	950.382-026 and 950.131-014 Claim Number
Employer	Port of Seattle Employer Phone # (206) 787-3000
Employer Contact	Dan Hytry Date of Analysis 4/9/13; 6/6/18

- Job of Injury
 Transferable Skills Job
 New Job
 40 Hours Per Week
 4-5 Days Per Week

Job Description, Essential Functions, Tasks and Skills:



The Port of Seattle is a municipal corporation created on September 5, 1911 by the voters of King County. The Port of Seattle is divided into operating divisions, plus other departments that support the divisions and the broad mission of the Port: 1) Aviation Division, 2) Maritime Division, and 3) Economic Development Division.

The Aviation Division owns and operates Seattle-Tacoma International Airport. Sea-Tac Airport handles more than 40 million passengers a year, and offers state-of-the-art air cargo facilities. The Aviation Division employs a maintenance staff which is responsible for all tasks associated with the maintenance and on-going operations at Sea-Tac Airport.

This job analysis is for an Operating Engineer Head working with the Mechanical Utilities Maintenance Engineers working for the Aviation Maintenance Department at Sea-Tac Airport.

Essential Functions:

An Aviation Maintenance Operating Engineer Head is responsible for the day-to-day supervision and organization of the Mechanical Utilities Maintenance Engineers who perform a wide variety of tasks related to the operations and maintenance of mechanical components of the utility systems throughout the airport facilities and surrounding offsite locations. Maintenance Engineers operate, maintain, repair, overhaul and troubleshoot issues related to boilers, air compressors, pumps, refrigeration systems, chillers, diesel





***Job Analysis: Operating Engineer Head – Maintenance Engineers (AVM)
Port of Seattle – DOT #950.382-026 and 950.131-014***

generator systems, hydraulic systems, HVAC systems, DDC control systems, domestic water systems, fire sprinkler system, and other tasks related to the mechanical systems throughout the airport facility. In addition to the supervisory tasks, the Operating Engineer Head may be asked to perform trade-related tasks.

An Operating Engineer Head will spend time in a central office working on administrative tasks, work in the shop area used by the Maintenance Engineers, and work in and around the airport facility addressing assigned tasks. While working out of the office or shop environments, an Operating Engineer Head may work inside or outside buildings.

The work performed by an Operating Engineer Head can be categorized as follows:

Work Category	Estimated Time
Office/desk/administrative work (including meetings)	50-80%
Supervising work and personnel and providing assistance in and around shop	10-15%
Supervising work and personnel and providing assistance in the field	10-15%
Performing trade-specific work	0-20%
Total	100%

Tasks assigned to Operating Engineer Head may include:

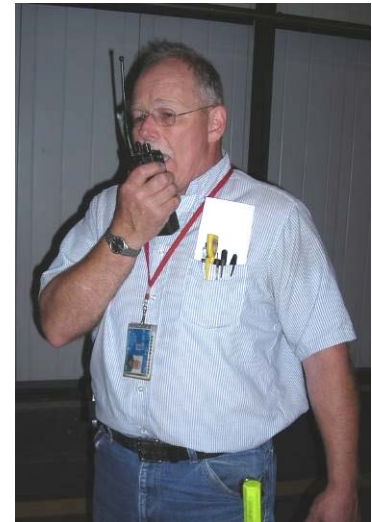
- Receive notifications of new work orders/requests (via telephone, email, or job tracking system). Develop plans for completing requested projects. Plan for material, equipment, PPE, and staffing needs.
- Order parts, supplies, and/or materials needed for projects. Work with Chief Engineer or Purchasing to ensure correct products and items are ordered and available when needed. Periodically work with vendors related to supplies and/or materials needed.
- Prepare personnel schedules and assign work tasks.
- Enter time by work order on a daily basis into job tracking system (Maximo). Review daily time entered by crew and approve, as applicable.
- Complete all required forms and documents.
- Enter description of work completed in a work log.





***Job Analysis: Operating Engineer Head – Maintenance Engineers (AVM)
Port of Seattle – DOT #950.382-026 and 950.131-014***

- Send and respond to electronic mails.
- Assist Maintenance Engineers in choosing supplies and parts needed for assignments.
- Visit project sites and oversee/inspect completed work. Ensure work is being performed in a safe manner.
- Assist Maintenance Engineers with technical input, answer questions from crew, and provide troubleshooting advice as needed.
- Meet/connect with crew daily (or as applicable) to manage workflow, address issues, and reassign personnel based on work demands.
- Meet with supervisors to discuss current issues and obtain assignments. Coordinate work priorities with supervisors.
- Complete periodic inspections at applicable project sites. Identify issues and the cause of the issues. Identify potential maintenance issues.
- Receive and respond to trouble calls as needed.
- Potentially lead periodic meetings to provide training and discuss important safety issues.
- Assist other crafts as requested.
- As assigned, perform tasks to address corrective maintenance (“CM”) concerns, or preventive maintenance (“PM”) projects. Respond to emergency maintenance (“EM”) calls. Troubleshoot problems and develop a plan of action to address the issue(s) immediately. Implement solutions.
- Off Shift Heads assist with utility shut downs related to emergency and project shut downs, and ensure that proper applications are used and Port procedures are followed.



Necessary skills and abilities include:

- Ability to identify the best methods to correctly complete the assigned task. Possess the skills to complete the assigned tasks, denoting attention to detail and accuracy.
- Ability to utilize critical thinking and judgment in defining, analyzing, and resolving problems.
- Ability to take initiative and be responsible for getting work done with limited supervision in an expedient and timely manner.
- Excellent time management and prioritization skills, with the ability to multi-task.
- Ability to manage people and work performed by others.
- Ability to communicate effectively, both verbally and in writing.
- Excellent interpersonal skills (including on two-way radio).



***Job Analysis: Operating Engineer Head – Maintenance Engineers (AVM)
Port of Seattle – DOT #950.382-026 and 950.131-014***

- Work in a professional manner. Ability to follow detailed directions closely.
- Ability to work independently, but also within a team environment.
- Must have the ability to perform assigned duties in various types of weather, and be able to complete work at heights and in various locations.
- Ability to safely operate a motor vehicle.
- Working knowledge of Windows-based computers and related accessories. Working knowledge of time tracking software, keyboarding and data input skills, and knowledge of electronic mail software.
- Have the skills to complete the assigned task(s), using all of the various types of tools and equipment, in a safe manner.
- Be able to read prints and plans, and communicate correctly using system terminology.
- Fundamental knowledge of plumbing codes.

Machinery, Tools, Equipment, Personal Protective Equipment:

- Windows-based computers and computer accessories. Inventory management/project management software (Maximo), and Microsoft Office software.
- General office equipment, such as desks, worktables, chairs, file cabinets, shelves, telephones, and copier.
- General office supplies, such as pens/pencils, notepads, and copy paper. Various log books
- Various hand tools, including wrenches pliers, vice grips, screwdrivers, tape measures, utility knives, and hammers, and power tools, including impact wrenches, drills, and grinders, and shop tools.
- Work benches. Work tables.
- 2-way radio for communication.
- Flashlight.
- Keys.
- Ladders: step, self-supporting, and extension. Man lifts/scissor lifts.
- Forklift. Wheeled carts.
- Overhead/bridge hoist.



Workers wear steel-toed boots or shoes, or glue-on/clip-on steel toe covers. They may also wear safety glasses, face shields, rubber boots and rubber gloves (particularly if adding chemicals into the water used in the boilers and other heating/cooling systems), ear protection, safety vests, hardhats, gloves, kneepads, and fall arrest harnesses as required.



*Job Analysis: Operating Engineer Head – Maintenance Engineers (AVM)
Port of Seattle – DOT #950.382-026 and 950.131-014*



Large Boiler



Large Chiller



Large Valve



6" Backflow Assembly



Manual Forklift



Spare Parts Storage



Example of Maintained Motor



Spare Parts Drawer



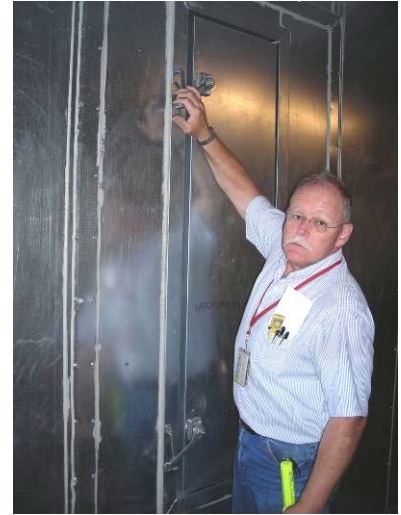
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Port of Seattle – DOT #950.382-026 and 950.131-014*



Forklift



Ladders



Entering Air Handler



Large Motorized Fan and
Overhead Hoist



Carbon Filters



***Job Analysis: Operating Engineer Head – Maintenance Engineers (AVM)
Port of Seattle – DOT #950.382-026 and 950.131-014***

Education / Training:

The Operating Engineer Head is a member of the Operating Engineers Union (Local 286).

The Operating Engineer Head would be a Journeyman level Operating Engineer with significant experience in various phases of mechanical maintenance work.

Training and/or enough hands-on experience with computers to have a working knowledge of Windows-based computers and related accessories, time tracking software, keyboarding, data entry, electronic mail software.

Operating Engineer Heads must complete the Front Line Supervisor Training as a Port of Seattle requirement. This training is offered once a year and must be completed during the first year as an Operating Engineer Head. Additional training includes, but is not limited to, AOA training (which allows workers to drive on the airfield), Safety Policies and Procedures, Asbestos Awareness, and forklift, power truck, and pallet jack certifications.

A valid Washington State Driver's License is required in this position, as is the ability to pass a required FAA background check.

An Operating Engineer Head must have the following licenses:

1. Grade II Steam and Grade II Boiler Licenses from the City of Seattle.
2. City of Seattle Refrigeration Operators License.
3. CFC Universal License (refrigerant license from the EPA).
4. OIT License as required (for waste water treatment).

Additional IAQ, HVAC, DDC, welding, and plumbing licenses and/or certifications are also preferred. A Washington State (07) Electrical License for working with low voltage will become a requirement within five years (currently it remains a preferred hiring requirement).

Per the Dictionary of Occupational Titles (DOT):

950.382-026 Maintenance Engineer SVP: 7 (From two to four years)

950.131-014 Maintenance Engineer Supervisor SVP: 7 (From two to four years)



**Job Analysis: Operating Engineer Head – Maintenance Engineers (AVM)
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COGNITIVE AND BEHAVIORAL ELEMENTS/DEMANDS

Frequency Definitions:	
Continuously = Occurs 66-100% of the time.	Occasionally = Occurs 1-33% of the time
Frequently = Occurs 33-66% of the time.	Rarely = May occur less than 1% of the time.
Never = Does not ever occur.	
Comprehension	
Articulating and comprehending information in conversations.	Continuously
Reading, comprehending, and using written materials.	Frequently
Understanding and solving problems involving math and using the results.	Occasionally
Using technology/instruments/tools & information systems.	Continuously
Working with two and three dimensional formats.	Occasionally
Remembering	
Remembering spoken instructions.	Continuously
Remembering written instructions.	Frequently
Remembering visual information.	Continuously
Recalling information incidental to task at hand.	Continuously
Memorizing facts or sequences.	Occasionally
Remembering simple instructions.	Continuously
Remembering detailed instructions.	Continuously
Learning & Processing	
Effectively learning and mastering information from classroom training.	Occasionally
Effectively learning and mastering information from on-the-job training.	Continuously
Learning from past directions, observations, and/or mistakes.	Continuously
Using common sense in routine decision making.	Continuously
Recognizing and anticipating potential hazards and taking precautions.	Continuously
Thinking critically and making sound decisions.	Continuously
Integrating ideas and data for complex decisions.	Occasionally
Determining and following precise sequences.	Frequently
Coordinating and compiling data and information.	Occasionally
Analyzing, synthesizing data and information.	Occasionally
Tasking and Planning	
Performing repetitive or short-cycle work.	Occasionally
Working under specific instructions.	Continuously
Completing complex tasks.	Occasionally
Directing, controlling, or planning for others as necessary for basic tasks.	Continuously
Directing, controlling, or planning for others as necessary for complex tasks.	Frequently
Multi-tasking.	Continuously
Planning, prioritizing, and structuring daily activities.	Continuously



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Claimant:
 Claim #:
 4/9/13; 6/6/18
 Page 9 of 13

***Job Analysis: Operating Engineer Head – Maintenance Engineers (AVM)
 Port of Seattle – DOT #950.382-026 and 950.131-014***

Use Appropriate Behavior for Professional Work Environment	
Receiving criticism and accepting limits appropriately.	Frequently
Maintaining emotional control and organization under increased stress.	Continuously
Maintaining socially appropriate affect, temperament, and behavior.	Continuously
Monitoring own quality of performance and altering behaviors to correct mistakes or improve outcome.	Continuously
Working independently and/or unsupervised.	Continuously
Adapting to frequent interruptions, changes in priorities, or changes in work location.	Continuously
Responding effectively to emergency situations.	Occasionally

Frequency Designations: Required Beneficial Not Necessary	
Maintaining Attendance and An Assigned Work Schedule	
Maintaining predictable and reliable attendance each work shift.	Required
Being punctual.	Required
Taking rest periods at set times or only at times determined by breaks in job responsibilities.	Not Necessary
Adjusting to a flexible schedule of work days and/or shifts.	Beneficial



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 Port of Seattle – DOT #950.382-026 and 950.131-014**

PHYSICAL DEMANDS

N/A: Not Applicable

S: Seldom (1-10% of the time)

O: Occasional (10-30% of the time)

STRENGTH: Sedentary Light

F: Frequent (30%-70% of the time)

C: Constant (Over 70% of the time)

WNL: Within Normal Limits (talking, hearing, etc.)

Medium Heavy Very Heavy

Frequency

Comments

Sitting	F	While performing administrative duties, attending meetings, driving cart/scooter, or forklift.
Standing	O-F	Interchange with walking. Frequency will depend on assigned tasks.
Walking	O-F	Interchange with standing (larger percentage of time is spent walking than standing). Frequency will depend on assigned tasks. Walking may be over concrete, asphalt, tile, grating, dirt/mud, or uneven or slippery surfaces. The Central Mechanical Plant is located under the Sea-Tac parking garage, however tasks and projects performed by the Maintenance Engineers are performed in locations throughout Sea-Tac Airport (including the main and satellite terminals, and in various parts on or next to the airfield).
Lifting (up to 10 pounds)	F	While lifting paperwork/document, binders, 2-way radio, tools, and smaller parts and system components, smaller air filters (few ounces up to 10 pounds), and smaller ladders.
Lifting (10 to 50 pounds)	S	Lifting tool bags/boxes/buckets, larger air filters (10 to 20 pounds), ladders, motors, pumps, and other system components. Note: Lifting devices are available to lift heavier objects to mitigate lifting demands (overhead hoists, forklifts, and other devices).
Lifting (50 to 100 pounds)	Rare	Motors, pumps, and other larger system components. Note: Lifting devices are available to lift heavier objects to mitigate lifting demands (overhead hoists, forklifts, and other devices).
Carrying (up to 10 pounds)	F	Carrying tools, smaller parts and components, smaller air filters (few ounces up to 10 pounds), smaller ladders, 2-way radio, and paperwork/documents.
Carrying (10 to 50 pounds)	S	Carrying tool bags/boxes/buckets, larger air filters (10 to 20 pounds), ladders, motors, pumps, and other system components. Note: Carrying devices are available to move heavier objects to mitigate carrying demands (overhead hoists, forklifts, and other devices).
Carrying (over 50 pounds)	N/A	Wheeled carts, hand trucks, forklifts, or other devices are available to move/transport components/equipment.
Pushing/Pulling (up to 10 pounds of force)	O	Processing paperwork, using binders/manuals/reference materials, opening/closing cabinet doors and drawers, gathering parts and hardware, using tools and moving wheeled carts.
Pushing/Pulling (10 to 50 pounds of force)	S	Using tools, disconnecting/connecting/positioning system components, positioning and maneuvering various pieces of equipment on wheeled carts, or wheeled equipment.
Climbing Stairs/Ladders	S	Ladders, scaffolding, or manlifts may be used to reach work heights. A permanent ladder is used to reach the top of the boilers. The main floor of the Central Mechanical Plant is down a flight of stairs from the maintenance offices.



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 Port of Seattle – DOT #950.382-026 and 950.131-014***

Working at Heights/Balancing	S	Depends on assigned tasks. Ladders, scaffolding, and manlifts may be used to reach work heights. Workers may work near open manholes and vaults.
Bending at Waist	O	While working at desk. Outside the office, while performing repairs, inspecting components and/or systems at or below waist level, gathering parts and items, and working at a workbench.
Bending Neck	C	While working at desk or outside the office.
Twisting at Waist	S	While working at desk. Outside the office, twisting may be necessary to reach particular work areas or system components. Workers can minimize the amount of twisting by moving their feet or repositioning their bodies while working.
Crouching/Kneeling	S	Depends on assigned tasks. When working on equipment or items below waist level, or gathering parts and supplies stored below waist level. Workers may use kneepads while working.
Crawling	S	Depends on assigned tasks. May crawl to reach work, or crawl between work tasks.
Stooping	S	While maneuvering in and around systems and components; while entering smaller spaces.
Reaching (To shoulder level)	F	While working at desk. Outside the office, while driving, performing inspections, gathering parts and supplies stored between waist and shoulder level, working with shop tools, and repairing and installing parts and equipment, and NOTE: Workers use ladders, scaffolding, and manlifts to position work at chest level when possible.
Reaching (Over the shoulder)	S	While reaching for items on shelves above desk. Outside the office, while inspecting systems, gathering parts and supplies stored above shoulder level, and repairing and installing parts and equipment.
Driving	S	While driving scooter to project sites, or forklift.
Foot Controls	S	While driving scooter or forklift, and potentially while operating a manlift.
Repetitive Motion	O	Keyboarding and using computer mouse.
Handling/Grasping	C	40 % Pinch Grasp 60 % Whole Hand Grasp
Fine Finger Manipulation	F	Processing paperwork and other tasks while working at desk. Outside the office, operating 2-way radio, using keys, using tools, disconnecting/reconnecting system components, and working with small parts.
Keyboarding/Mousing	F	While entering time and work performed on a daily basis, creating and responding to electronic mail, and creating schedules and reports.
Talking	F	Communicating with supervisors, co-workers, and public.
Hearing	C	Communicating with supervisors, co-workers, and public. Listening for sounds of malfunctioning machinery and danger in and around work areas.
Seeing	C	Visual abilities would be considered important in this position.
Writing	O	Taking notes in meetings or while on the phone. Documenting completed preventative maintenance items (checklists), and documenting parts used.



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Port of Seattle – DOT #950.382-026 and 950.131-014***

Normal Job Site Hazards	F	Working near boilers and chillers, sparks, fire, moving machinery, working at heights (ladders, lifts, open manholes and vaults), sharp edges parts and components, pinch hazards, working around low hanging equipment, working with heavy parts, and exposure noise, dust, and fumes.
Expected Environmental Conditions	C	Will generally work in all types of environments. This includes boiler rooms, mechanical rooms, public areas, and offices. Worker may be exposed to various temperatures throughout a shift, and be exposed to external weather conditions.

The above job analysis represents the requirements of a specific job based on personal observations, discussions with employer representatives, and/or workers. On occasion, practicality and feasibility prevent the direct observation and/or gathering of objective quantifiable data. For this reason, a "best estimate" may have been used when reporting physical demand frequencies.

Analysis was done on the job site? Yes No

Job Analysis Reviewed By: Stuart Mathews, Erik Knowles, Dan Hytry

Completed by Vocational Provider Brice York, B.A., CDMS

Date June 6, 2018

Signature of Vocational Provider



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Port of Seattle – DOT #950.382-026 and 950.131-014***

FOR PHYSICIAN’S/EVALUATOR’S USE ONLY

- The injured worker can perform the physical activities described in the job analysis and can return to work on _____
- The injured worker can perform the physical activities described in the job analysis on a part-time basis for _____ hours per day. The worker can be expected to progress to regular duties in _____ weeks/months.
- The injured worker can perform the described job, but only with the modifications/ restrictions in the attached report and/or listed below. These modifications/restrictions are (check one):
 - Temporary for _____ weeks _____ months
 - Permanent
- The injured worker cannot perform the physical activities described in the job analysis based on the physical limitations in the attached report and/or listed below. These limitations are (check one):
 - Temporary for _____ weeks _____ months
 - Permanent

COMMENTS:

Date _____ Physician’s/Evaluator’s Signature _____

Physician’s/Evaluator’s Name Printed _____

PLEASE RETURN COMPLETED FORM VIA FACSIMILE TO:

Port of Seattle Employee Health & Safety Department at (206) 787-3406