



Bock Consulting

Job Analysis

Job Title	Electrical Shop Foreman (AVM)	Worker
DOT Number	829.261-018, 824.281-010, and 829.131-014	Claim Number
Employer	Port of Seattle	Employer Phone
Employer Contact	Darin Benofsky	Date of Analysis
		(206) 787-3000
		8/29/11; 1/24/17; 12/11/18

Job of Injury
 Transferable Skills Job
 New Job
 40 Hours Per Week
 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 individual working as an Electrical Shop Foreman for Aviation Maintenance.

Essential Functions:

The regional power supplier delivers electricity to two substations on the Sea-Tac Airport property, and the employees of the Aviation Maintenance Electrical Shop are then responsible for distribution of power and maintenance of the distribution systems for all of the standard and emergency electrical systems at Sea-Tac Airport.

The Electrical Shop Foremen are responsible for the day-to-day supervision and organization of the Electricians who perform all electrical maintenance, repair, and modification tasks on the electrical systems managed by Aviation Maintenance. These systems encompass systems that range from low voltage systems to systems up to 15,000 volts. A Foreman is also expected to perform trade-specific work on a consistent basis.





**Job Analysis: Electrical Shop Foreman (Aviation Maintenance) – Port of Seattle
DOT # 829.261-018, 824.281-010, and 829.131-014**

Foremen may work on general system components, or specific electrical systems, such the systems that provide power the airfield, conveyance systems, loading/jet bridges, overhead doors, or security gates. Foremen are staffed 24 hours per day, 365 days a year on three shifts.

The Foremen spend time in central workshops and in the field. While in the field, work may be performed outside, or in buildings or vaults.

The work performed by the Electrical Shop Foremen can be categorized as follows:



Work Category	Estimated Time
Office/desk/administrative work (including meetings)	20-40%
Supervising work and personnel and providing assistance in and around shop	0-20%
Supervising work and personnel and providing assistance in the field	10-20%
Performing trade-specific work	50-70%
Total	100%

Tasks assigned to a Foreman 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 General Foreman 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 and or review site specific safety plan for each project/work task. Prepare job plans and supporting documentation as needed.
- Prepare personnel schedules and assign work tasks.
- Coordinate scheduling with other trades to ensure materials, equipment, and workers from other trades are available as needed to complete assigned work orders/projects. Coordinate with outside vendors/contractors/entities and tenants.





***Job Analysis: Electrical Shop Foreman (Aviation Maintenance) – Port of Seattle
DOT # 829.261-018, 824.281-010, and 829.131-014***

- Enter time by work order on a daily basis into job tracking system (Maximo). Review daily time entered by crew and approve, as applicable.
- Ensure description of work completed is available and or correct in work log.
- Complete all required forms and documents.
- Send and respond to electronic mails.
- Visit project sites and oversee/inspect completed work. Ensure work is being performed in a safe manner.
- Meet/connect with crew (as applicable) daily to manage workflow, address issues, and reassign personnel based on work demands.
- Potentially lead periodic meetings to provide training and discuss important safety issues.
- Attend periodic meetings with supervisors and other entities.
- Coordinate work priorities with supervisors.
- Assist Electricians with technical input, answer questions from crew, and provide troubleshooting advice as needed.
- Assist crew in choosing tools, equipment and materials.
- Ensure crew has current certifications and or training as required by law or ordinance.
- Potentially assist with responses to requests for bids.
- Potentially supervise apprentices.
- Perform maintenance, troubleshooting, and repair tasks of electrical systems associated with Aviation Division facilities. Repair/replace breakers, vaults, cables, power centers, power and lighting panels, emergency power generation equipment, HVAC motor controls, PLCs, watt hour and demand metering, automated monitoring and control systems, fault indicators, capacitors, regulators, and surge suppression devices.
- Respond to emergency power problems and/or requests for assistance. NOTE: Aviation Maintenance Electricians are staffed on three shifts and cover airport operations 24-hours a day, seven days a week. It is possible that workers may have to work overtime and or be called in for unscheduled work to address critical situations.
- Assist other crafts as requested.
- Perform other tasks as requested.



Necessary skills and abilities may include:

- Identifying the best method to correctly complete an assigned task.
- A working knowledge of the National Electrical Code, OSHA, WISHA, and Port of Seattle safety requirements.



Job Analysis: Electrical Shop Foreman (Aviation Maintenance) – Port of Seattle
DOT # 829.261-018, 824.281-010, and 829.131-014

- Ability to read and interpret blueprints.
- The ability and skills to complete assigned task(s) in a timely and efficient manner.
- Ability to use power and hand tools, as well as meters for testing, troubleshooting and repairing of electrical equipment, splicing and terminating of high voltage cables, and welding equipment in a safe manner.
- The ability to utilize critical thinking and judgment in defining, analyzing, and resolving problems.
- The ability to take initiative and be responsible for getting work done with limited supervision in an expedient and timely fashion. Must be able to work independently and demonstrate effective judgment and decision making.
- Excellent time management and prioritization skill, with the ability to multi-task.
- Ability to communicate effectively, both verbally and in writing, and excellent interpersonal skills (including on radio).
- Have working knowledge of “Arc Flash” exposure environments along with PPE and proper procedures.
- Work in a professional manner while in the field. Often the Electrical Shop personnel are visible to Port tenants and the public, and the workers need represent the Port well while working.
- Ability to safely operate a motor vehicle.
- Must have the ability to perform assigned duties in various types of weather, and be able to complete work heights and in confined spaces.
- Ability to follow directions closely and to be detailed oriented while working.
- Working knowledge of Windows-based computers, related accessories, time tracking software, keyboarding, data input skills, and electronic mail software.



***Job Analysis: Electrical Shop Foreman (Aviation Maintenance) – Port of Seattle
DOT # 829.261-018, 824.281-010, and 829.131-014***

Machinery, Tools, Equipment, Personal Protective Equipment:

Foremen use a variety of tools and equipment to accomplish their tasks:

- Electrical assemblies and components.
- Hand tools and power tools, including pliers, drills, wrenches, hammers, screwdrivers, mauls, reciprocating saws, roto-hammers, band saw, conduit benders, fish tape, and tape measures. Shovels and brooms. Wet/dry vacuums.
- Extension cords. Lights.
- Welding equipment.
- Portable generators. Air compressors. Wire tuggers.
- Toolboxes, buckets, or bags.
- Spools of wire.
- Nylon straps and ropes.
- Hand trucks. Wheeled carts.
- Work trucks. Scooters (small 4-wheeled vehicles).
- Scissor lifts. Manlifts. Ladders. Bucket trucks.
- Forklifts.
- 2-way radios.
- Traffic cones.
- Lockout/tagout devices.
- Lockers.
- Computer, computer accessories, and project management software (Maximo). General office equipment, such as fax machine and telephones. General office supplies, such as pens/pencils, notepads, binders, and copy paper.



Foremen are required to wear a safety vest and approved safety boots/footwear at all times. Eye and ear protection, respirators, and hard hats are required as necessary. Foremen may also wear gloves, kneepads, and rain gear. Fall arrest harnesses are worn when working at heights, or may be worn when working over or near a sub-surface vault.



Bock Consulting

Claimant:
Claim #:
8/29/11; 1/24/17; 12/11/18
Page 6 of 13

***Job Analysis: Electrical Shop Foreman (Aviation Maintenance) – Port of Seattle
DOT # 829.261-018, 824.281-010, and 829.131-014***





Job Analysis: Electrical Shop Foreman (Aviation Maintenance) – Port of Seattle
DOT # 829.261-018, 824.281-010, and 829.131-014

Education / Training:

The Electricians at the Port of Seattle, including the Foremen, are represented by the International Brotherhood of Electrical Workers Local 46-Seattle.

The Foremen would be a Journeyman level Electrician with significant experience in various phases of electrical work (i.e., construction, tenant improvements, and maintenance), and experience with various types of electrical systems.

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.

Foremen must also 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 a Foreman.

Must possess a valid Washington State driver's license, have the ability to obtain a Commercial Driver's License (CDL) (if required), and pass a security background check.

Per the Dictionary of Occupational Titles (DOT):

829.261-018 Electrician, Maintenance

Specific Vocational Preparation (SVP): 8 (From four to ten years)

829.261-018 Airport Electrician

Specific Vocational Preparation (SVP): 7 (From two to four years)

829.131-014 Electrician Supervisor

Specific Vocational Preparation (SVP): 8 (From four to ten years)



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DOT # 829.261-018, 824.281-010, and 829.131-014

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.	Occasionally
Understanding and solving problems involving math and using the results.	Frequently
Using technology/instruments/tools & information systems.	Continuously
Working with two and three dimensional formats.	Frequently
Remembering	
Remembering spoken instructions.	Continuously
Remembering written instructions.	Continuously
Remembering visual information.	Continuously
Recalling information incidental to task at hand.	Continuously
Memorizing facts or sequences.	Frequently
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.	Continuously
Working under specific instructions.	Continuously
Completing complex tasks.	Occasionally
Directing, controlling, or planning for others as necessary for basic tasks.	Occasionally
Directing, controlling, or planning for others as necessary for complex tasks.	Rarely
Multi-tasking.	Continuously
Planning, prioritizing, and structuring daily activities.	Continuously



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DOT # 829.261-018, 824.281-010, and 829.131-014***

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.	Occasionally
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



Job Analysis: Electrical Shop Foreman (Aviation Maintenance) – Port of Seattle
DOT # 829.261-018, 824.281-010, and 829.131-014

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, driving truck or scooter to job sites, attending meetings, or for short periods of time while working in the field.
Standing	O	Interchange with walking. Frequency will depend on assigned tasks.
Walking	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, grass, dirt/mud, or uneven (such as rip-rap (large rocks)) or slippery surfaces.
Lifting (up to 10 pounds)	F	Electrical parts and accessories, smaller electrical assemblies, hand and power tools, rolls/spools of wire (500' reel of wire is approx. 5-10 lbs.), sticks of conduit, and traffic cones.
Lifting (10 to 20 pounds)	O	Lifting mid-sized assemblies and components, power tools, boxes of electrical supplies, bag of tools, and ladders.
Lifting (20 to 40 pounds)	S	Lifting bag of tools or toolbox, large assemblies and components, runway lights (35-40 lbs.), coils of flex conduit (35 lbs.), and rolls/spools of wire (2,500' reel of wire is approx. 35 lbs.). Note: Larger items, such as large electrical panels or panel covers, temporary power cords, loading bridge control cables, larger transformers, motors, and generators or compressors, are lifted by two workers, and/or equipment (including hoists or forklifts) to reduce the amount of necessary lifting.
Carrying (up to 10 pounds)	F	Electrical parts and accessories, smaller electrical assemblies, hand and power tools, rolls/spools of wire (500' reel of wire is approx. 5-10 lbs.), sticks of conduit, and traffic cones.
Carrying (10 to 20 pounds)	O	Lifting mid-sized assemblies and components, power tools, boxes of electrical supplies, bag of tools, and ladders.
Carrying (20 to 40 pounds)	S	Typically short distances. Lifting bag of tools or toolbox, large assemblies and components, runway lights (35-40 lbs.), coils of flex conduit (35 lbs.), and rolls/spools of wire (2,500' reel of wire is approx. 35 lbs.). Note: Larger items, such as large electrical panels or panel covers, temporary power cords, loading bridge control cables, larger transformers, motors, and generators or compressors, are lifted by two workers, and/or equipment (including hoists or forklifts) to reduce the amount of necessary lifting.
Pushing/Pulling (Up to 20 pounds of force).	F	Pulling wire through conduit, pushing while using drill or roto-hammer, pushing while using screw driver, using wrenches to tighten or loosen bolts/nuts, using a hammer or maul, and pulling/pushing wheeled carts holding tools, supplies, and equipment.
Pushing/Pulling (20 pounds to est. 40 pounds of force).	S	Pulling larger wire/cable through conduit, pushing while using drill or roto-hammer, using wrenches to tighten or loosen bolts/nuts, using a hammer or maul, and opening manhole or vault.



Job Analysis: Electrical Shop Foreman (Aviation Maintenance) – Port of Seattle
DOT # 829.261-018, 824.281-010, and 829.131-014

Climbing Stairs/Ladders	O	Frequency depends on assigned tasks. Workers may encounter stairs in the field. Electricians climb ladders as necessary (ladders can be freestanding ladders ranging from stepstools to 24' extension ladders, or ladders attached to equipment or trucks).
Working at Heights/ Balancing	O	Frequency depends on assigned tasks. Electricians climb ladders, and may work from a man lift or bucket truck (the largest bucket truck has an 80 foot arm). Electricians may also work near open vaults. Fall protection is required when the risk of a fall is greater than 6 feet.
Bending at Waist	F	Performing inspections, installations, and repairs. While working at a shop workbench. Gathering materials and supplies from carts, shelves, or work truck.
Bending Neck	C	All of the assigned tasks involve neck movement: conducting inspections, performing repairs, pulling new wire, installing fixtures and assemblies, climbing ladders and gathering electrical parts and components.
Twisting at Waist	O	While maneuvering/reaching into work areas, installing fixtures.
Crouching/Kneeling	O	Working below waist level, gathering items stored at or below waist level, and potentially while working below feet. Note: Workers may wear kneepads while working.
Crawling	S	Workers may wear kneepads while working.
Stooping	O	While entering/exiting truck or other vehicle, and maneuvering into and out of work areas.
Reaching	F	Working at desk or in office, uninstalling and installing assemblies, disconnecting/removing wires, pulling wires through conduit and making electrical connections, climbing ladders, gathering supplies and materials from truck or supply area. Note: Reaching heights would be from the floor to over the shoulder on an equal frequency. Note: Workers try to position themselves where the work is primarily performed between shoulder and waist heights.
Driving	S-O	Driving truck or scooter to work sites.
Foot Controls	S-O	Driving truck or scooter to work site, and using safety switches on man lifts.
Repetitive Motion	S-O	Frequency will depend on assigned tasks. Pulling wire through conduit. Gripping wire strippers and pliers. With effort, a worker can vary the sequence of the tasks being completed to mitigate repetitive motions.
Handling/Grasping	F	50 % Pinch Grasp 50 % Whole Hand Grasp
Fine Finger Manipulation	F	Processing paperwork, using wrenches, screwdrivers, and pliers, triggers on power tools, keys to start vehicles and enter buildings, gathering and holding couplings/small parts, and operating two-way radio.
Talking	C	Communicating with supervisors, co-workers, tenants, and the public.
Hearing	C	Communicating with supervisors, co-workers, tenants, and the public. Listening for signs of danger or alarms, and radio traffic.
Seeing	C	Visual abilities would be considered important in this position.
Writing	S	While documenting inspections and completed preventive maintenance tasks, and taking notes regarding completed work.



Job Analysis: Electrical Shop Foreman (Aviation Maintenance) – Port of Seattle
DOT # 829.261-018, 824.281-010, and 829.131-014

Keyboarding	O-F	While entering time and work performed on a daily basis, creating and responding to electronic mail. Potentially while documenting inspections and writing reports regarding system issues.
Normal Job Site Hazards	C	Working with electricity (risk of electrocution), working at heights (ladders, man lifts, bucket trucks, or near open vaults), confined spaces, carrying heavy objects, falling objects, striking head on overhead objects, working near moving vehicles, slippery walking surfaces, sharp tools, fumes, dust, noise, odors, and vibrations.
Expected Environmental Conditions	C	Work may be performed inside temperature-controlled buildings, or outside exposed to the weather. Worker may be exposed to noisy environments, dust, and fumes.

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: Dan Hytry; Darin Benofsky

Completed by Vocational Provider Brice York, CDMS

Date December 11, 2018 Signature of Vocational Provider 



Bock Consulting

Claimant:
Claim #:
8/29/11; 1/24/17; 12/11/18
Page 13 of 13

**Job Analysis: Electrical Shop Foreman (Aviation Maintenance) – Port of Seattle
DOT # 829.261-018, 824.281-010, and 829.131-014**

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