

**City of Pendleton**

 **Job Description**

 **UAS Range Chief Engineer**

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| --- | --- |
| **Department**: Airport  | **FLSA**: Non-exempt |
| **Reports to**: UAS Range Manager  | **Representation**: SEIU |
| **Pay Range**: SEIU Salary Scale, Range 28  | **Date**: July, 2018  |

**GENERAL POSITION SUMMARY:** *(why does this position exist)*

Performs skilled engineering work in the design, building, operating, repairing, and maintaining of Unmanned Aerial Systems (UAS) ground support equipment, facilities, and systems.

**ESSENTIAL FUNCTIONS/MAJOR RESPONSIBILITIES:** *(list those tasks that HAVE TO BE DONE to accomplish the Job Purpose. Using complete sentences, please describe the various tasks performed on the job which are critical to the successful performance of the job* ***or*** *occupy more than 5 percent of your time. Think in terms of WHAT you do, NOT HOW you do it. Avoid describing procedures. Start each sentence with an action verb. Group tasks which require similar skills/knowledge together. Describe them in such a way as to be clear to someone who does not understand the work performed.)*

1. Engineering Design Oversees and provides hardware and software engineering direction and services to range personnel and range customers in support of UAS mission control room/ground support equipment design, fabrication, integration, operation, and maintenance. Engineering services include, but are not limited to: hardware design, software coding, troubleshooting electronic circuits to component level, network design and integration. UAS Mission Control room/ground support equipment includes, but is not limited to: RF antenna arrays, ground station computers, networking equipment, data storage devices, voice communication devices, live video cameras, and various autopilot interface devices and customized equipment as required by range customers.
2. Range Management/Flight Test Engineering (FTE) Assisting the UAS Range Manager in ensuring that all conditions are met for the safe and legal operation of each unmanned aircraft flight performed at the UAS Range, according to the Pendleton UAS Range standard operating procedures and FAA authorizations. Includes, but not limited to, flight mission planning, leadng safety review boards, evaluating customer flight tests master plans, interfaces with the FAA for Certificate of Authorization Waiver (COA), provides on-station FTE support to customers as required. Additionally, coordinates with all range users for the purposes of scheduling, frequency management, and airspace deconfliction.
3. Range Operations Support Performing routine operation and maintenance of the Pendleton Mission Control and Innovation Center (MCIC) and the Pendleton Mobile Mission Control (MMC) trailer and their associated mission control systems as well as upgrades per customer requirements. This includes troubleshooting as required, designing upgrades per customer requirements, operating heavy equipment, to include dump trucks, forklifts, tractors to transport flight test support equipment such as fuel, generators, batteries, engines, etc.
4. Flight Operations Act as supplementary aircrew for range operations that require it (Pilot certificates, visual observer, etc.). This may include piloting small/large UAS under Part 107/COA. Additionally, acting as pilot in command of fixed wing chase aircraft. Acts as visual observer from chase aircraft. Plans UAS missions and/or fixed wing missions as required.

**IMPORTANT FUNCTIONS:** *(list those tasks that may be done, but are not essential to fulfill the job purpose; any ancillary job tasks)*

1. Performing day-to-day operation and maintenance of the Innovation Center hardware and systems (3D printers, Electronics lab, VR systems, etc.).
2. Organize and maintain internships and job shadow opportunities that lead students into jobs in the UAS field.
3. Train UAS Range customers, employees, and interns on the safe use of systems available at the Innovation Center (electronics lab, 3D printers, etc.
4. May prepare and perform presentations to trade shows, civic clubs or other interested groups.
5. May be appointed to serve on various committees, such as the Safety Committee.

**DISTINGUISHING CHARACTERISTICS:** *(what separates this job from others in the series?)*

Position is distinguished from the UAS Range Manager position by the absence of primary responsibility for the operation of the Pendleton UAS Range including budgetary, goal-setting, and supervisory responsibilities. This position does not have AP/AR responsibilities. This position is further distinguished by the requirement to create and maintain mission control systems that may not yet exist, depending on need.

**JOB SPECIFICATIONS:** *(Education and experience requirements are minimum standards. Other equivalent combinations of education, training and experience will be considered.)*

1**. Education & Experience** *Education and experience requirements are minimum standards.*

1. Bachelors Degree from an accredited college or university is required. Degree must be in electrical/software engineering, or aeronautical engineering or a closely related field; and
2. Work Experience: Indicate the minimum level of work-related experience required to effectively perform the responsibilities. Check only one box.

[ ]  Less than 12 months

[ ]  1 – 3 years

[x]  3 – 5 years

[ ]  5 – 8 years

[ ]  Other

Describe experience: Four (4) years in mission control design and operation and electronic ground support flight systems design, fabrication and operation.

1. Satisfactory equivalent combination of education and experience.

**2. Special Requirements:**

1. [x]  Must possess, or be able to obtain by time of hire, a valid driver’s license.
2. [x]  Must be able to pass the department’s security clearance standards including review of criminal history and driving record.
3. FAA Remote Pilot Certificate.
4. Current Commercial Pilot Certificate or higher.

**3. Necessary Knowledge, Skills and Abilities:**

1. Knowledge of methods, techniques, materials and equipment related to all aspects of unmanned aircraft ground support equipment.
2. Knowledge of and ability to perform maintenance and repair methods and procedures for UAS ground control computers, VOIP devices, UAS command and control links, autopilot interfaces, audio/visual equipment, and all other devices use to fly and monitor UAS.
3. Ability to solder, crimp, and handle wiring to NASA aircraft and spacecraft standards.
4. Knowledge of safety standards, practices and procedures applicable to area of assignment.
5. Working knowledge of data entry, and word processing.
6. Ability to read and understand schematics, drawing and blueprints.
7. Working knowledge of the United States National Airspace System (NAS).
8. Ability to read and correctly interpret Federal Aviation Regulations.
9. Ability to communicate with Air Traffic Control and Airport Ground Control.
10. Ability to work independently in the absence of supervision.
11. Ability to understand, analyze and interpret technical specifications.

1. Ability to maintain regular and predictable attendance to serve customers, interact with co-workers, supervisor, clients, etc., attend meetings, training, etc.
2. Ability to establish and maintain effective working relationships.
3. Ability to work as a team member.

1. Ability to perform work in a manner consistent with the City’s Core Values of: Respect, Integrity, Caring, Responsibility, Citizenship, Cooperation and Industriousness.
2. Ability to perform the essential functions of the job.

**4.** **Tools and Equipment Used:** *List specialized tools or equipment needed to perform tasks. Add or delete from the sample list below.*

1. Standard office equipment including telephones, computer, printer, fax machine and copy machines; Computer software (Choose all that apply):

[x]  MS based word-processing, spreadsheet, and/or data base programs

[x]  Outlook or other email communication.

[ ]  Internet and/or social media

[ ]  Presentation or desktop publishing software

[x]  Specialized or custom software

1. Vehicle - Pickup and trailer, forklift, dump truck, tractor.
2. Variety of hand tools as well as power tools such as drills, saws, soldering, crimping, and wire handling tools, etc. and various electronic test instruments used in performing maintenance and repair tasks.

**5.** **Supervision:**

1. This position does not supervise other staff.
2. This position does provide lead worker direction for any interns or customer engineering personnel assigned to the UAS division of the Airport.
3. This position reports to UAS Range Manager. Supervision received is (Choose one):

[ ]  Direct. Supervisor provides assignments, directs work on a regular basis, and tasks or procedures are usually well defined.

 [x]  General. Work is assigned more generally and the employee has some autonomy to determine the order or manner in which the work is completed. Existing practices and procedures are used as guidelines to determine work methods.

 [ ]  Limited. Work is performed highly independently with little direction. Position has significant decision-making discretion. Work is evaluated for overall effectiveness.

**6.** **Communications**:

1. Communications are: (*Choose one*)

[x]  Primarily with other City staff and/or customers.

[ ]  Regularly includes others outside the organization (not customers), such as vendors, contractors, attorneys, agents, or business partners.

[ ]  Routinely with leaders inside and outside the organization such as department heads, City Councilors, public officials from other agencies, and/or community leaders.

1. The communications may be (*Check any that apply*):

[x]  Complex

[ ]  Controversial

[x]  Confidential

[ ]  Have significant impact (affect City services or reputation, or have legal or financial consequences)

**7.** **Cognitive Functions**: *Check the one that most closely aligns to position:*

[ ]  Tasks require the employee to remember complex processes and/or be able to perform multi-step jobs without step-by-step instructions. Requires a moderate level of independent thinking and reasoning.

[x]  Tasks are highly creative or complex and requires significant mental exertion that would typically require specialized schooling, training, certification or a license to be able to accomplish. Employee has some control over the planning and performance of the work, and may determine their own practices and procedures.

[ ]  Responsibilities include significant accountability (i.e. could expose the City to risk or liability, generate public censure, or impact the work or reputation of the City.) Work is performed highly independently. Employee has significant control over the planning and performance of the work, and may develop or recommend new practices and procedures.

[ ]  Responsible for developing or approving programs/services; determining quantity and/or quality standards; and monitoring, evaluating, and analyzing program effectiveness to determine success or failure. Routinely engages in autonomous problem-solving. May include developing and implementing policies, procedures or regulations.

**8. Problem Solving:** *Indicate the nature of problems regularly encountered by this position. Check only one box.*

[ ]  Most situations are resolved using standard procedures and established guidelines.

[x]  Situations are somewhat varied; requires application of specific technical skills and expertise.

[ ]  Varied situations that require significant analysis or interpretation; general precedents and practices used, but may be modified.

[ ]  Highly varied and unpredictable situations, complex and often non-recurring; new and creative approaches required.

**9.Work Environment*:*** *The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.*

1. Work is performed indoors and outdoors throughout the range complex, at the Pendleton airport and remote launch sites.
2. Strength Rating (see attached definitions) is: Medium .
3. Hazards include: *Check all that apply and include the percentage of time exposed to the listed hazard:*

[ ]  Office environment / no specific or unusual physical or environmental demands.

[x]  Work on and around heavy construction equipment \_\_\_\_%

[x]  Exposure to toxic elements/hazardous chemicals \_\_\_\_%

[x]  Work at heights in excess of 20 feet \_\_\_%

[ ]  More than occasional exposure to poor air quality (excessive dust, smoke, fumes, gases, etc.) \_\_\_\_%

[ ]  Exposure to weather or temperature extremes \_\_\_%

[ ]  Isolation \_\_\_\_%

[ ]  Exposure to light or noise extremes \_\_\_\_%

[ ]  Regular travel outside the City \_\_\_\_%

[ ]  Risk of injury \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(list) \_\_\_\_%

[ ]  Significant physical exertion required to\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_%

[ ]  Other (describe) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. General hours of work are 8:00 a.m. – 5:00 p.m. Monday – Friday however persons in this classification may be required to adjust their schedule to accommodate range activities on weekends and holidays, and evening/late night hours as determined by customer flight requirements. Variations include (check all that apply):

[ ]  Frequent or regular overtime

[ ]  Subject to emergency call out

[x]  Split or Night shifts

**10.** **Resource Accountability:**

1. Check item(s) that describe involvement in the budgetary process:

[ ]  Not applicable [x]  Input [ ]  Prepare [ ]  Forecast [ ]  Monitor [ ]  Approve

1. This position has resource accountability for the following level of assets (choose one):

[ ]  Significant – as would be typified by purchasing authorization up to $25,000, or responsibility for operation or use of very high-level equipment/assets.

[ ]  Moderate – as would be typified by purchasing authority up to $5,000 or responsibility for operation or use of equipment/assets of moderate value.

[x]  None/Low – employees with no purchasing authority or responsibility for operation or use of equipment/assets of modest value.

1. Persons in this classification are responsible to make purchasing decisions resulting in the most efficient solution for the lowest cost.

*The job classification description does not constitute an employment agreement between the employer and employee and is subject to change by the employer as the needs of the employer and requirements of the job change.*

Drafted: 04/27/2018

Adopted:

Revised: August, 2020

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Employee Acknowledgement/Date Supervisor Approval/Date

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Department Head Approval/Date Administration Approval/Date

Overall Job Strength Rating Definitions

(Oregon Workers’ Compensation Rules, Div. 436-035-0012)

**S - Sedentary** – exerting up to 10 pounds of force occasionally, or a negligible amount of force frequently to lift, carry, push, pull, or otherwise move objects. Job is mostly sitting, but brief walking and/or standing (occasionally) may be required.

**L – Light**  - exerting up to 20 pounds of force occasionally, or up to 10 pounds of force frequently, or a negligible amount of force continually to lift, carry, push, pull or move objects. Job is largely sitting, but more than sedentary walking or standing may be required. Work is light if job tasks are done sitting, but considerable upper body or arm movement or use of leg controls is involved.

**M – Medium** - exerting 20 to 50 pounds of force occasionally, or 10 to 25 pounds of force frequently, or greater than negligible up to 10 pounds of force continually to lift, carry, push, pull or move objects. Standing, walking, and/or other positional physical movements may be occasional to frequent.

**H – Heavy** – exerting 50 to 100 pounds of force occasionally, or 25 to 50 pounds of force frequently, or 10 to 20 pounds of force continually to lift, carry, push, pull, or move objects. Walking, standing, and other positional physical requirements may be frequent to continual.

**V/H – Very Heavy** – exerting in excess of 100 pounds of force occasionally, or in excess of 50 pounds of force frequently, or in excess of 20 pounds of force continually to lift, carry, push, pull, or move objects. Walking, standing, and other positional physical requirements may be frequent to continual.