

**GENERAL DESCRIPTION OF CLASS**

The COMMUNICATIONS SYSTEMS ANALYST 1 employs a general knowledge of electronic theory and practice to assist journey-level staff in the installation, deinstallation, and maintenance of mobile and fixed-station communications equipment. The communications work is typically performed either at a central shop or at remote communications sites located throughout the state. Employees in this class, although at a sub-journey level, work on technically complex equipment with increasing independence as they become more proficient.

**DISTINGUISHING FEATURES**

This is the first level of a three-level series. It is distinguished from the full-journey level by the absence of the requirement to repair the most complex equipment, diagnose unprecedented problems and make unique repairs or suggest unique solutions to identified problems. Independent work which may require creative solutions to complex communication problems is not required of this level.

**DUTIES AND RESPONSIBILITIES**

1. **Communications Systems Installation.** Typical tasks: assists the Communications Systems Analyst 2 in the installation and deinstallation of mobile and fixed-station equipment; assembles, installs, and relocates various accessories, control consoles, base stations, mobile radio units, building and vehicular cabling and antennas; makes adjustments to equipment as necessary ensuring that the communications equipment functions properly; performs initial tests on new equipment to determine compliance with purchase specifications; transports equipment to required location; performs tests necessary to ensure that the equipment and system meets all established goals and objectives, and that it is in compliance with any applicable Federal Communications Commission Rules and Regulations using complex integrated test equipment (e.g., Spectrum Analyzers, Transmission Impairment Measurement Sets, Selective Level Meters, Digital Communications Protocol Analyzer, Frequency Counters, Oscilloscopes, and miscellaneous other electronic test equipment).
2. **Communications Systems Maintenance.** Typical tasks: assists higher-level communications personnel in the performance of scheduled preventative maintenance on communications equipment that may include visual inspections of antennas, feed cables, emergency power plants, security alarms; makes electronic measurements of base stations such as power output, deviation, and frequency; replaces or repairs defective equipment; diagnoses, repairs, and tests at the circuit board level to determine the cause of failure; periodically tests the system or equipment to ensure continued integrity of operation and compliance with equipment specifications and Federal Communications Commission Rules and Regulations.
3. **Miscellaneous.** Typical tasks: assists in the preparation and update of communications equipment inventory records; cleans shop area; maintains and organizes parts and equipment room; inventories stockroom and supplies for reordering; updates and develops skills through continued formal education, technical seminars, and self-directed studies to keep current with the continuously

changing technology.

### **RELATIONSHIPS WITH OTHERS**

Employees in this class may have daily telephone or in-person contact with equipment users from other units within the Department, as well as occasional contact with other State agencies. These contacts are to identify and clarify equipment malfunctions and to coordinate repair activities. They also receive instructions from higher-level communication staff to advance their technical and operational knowledge.

### **SUPERVISION RECEIVED**

Employees in this class receive general supervision from the unit supervisor or higher-level communications staff who formally reviews their work and provides instructions regarding the use and repair of communications systems. The technician's work is reviewed not only for quality, but to assess their progress in upward movement toward the Communications Analyst 2 level.

Guidelines used by employees in performing the work of this class include Federal Communications Commission (FCC) Rules and Regulations which establish technical standards and licensing requirements for telecommunication systems. Oregon statutes and administrative rules establish procedures for procuring parts and equipment.

### **GENERAL INFORMATION**

Employees in this class work in an office/shop, mobile workshop, or at a distant radio facility. They require the willingness to work under severe environmental conditions and temperature extremes; and to respond to emergencies when the need arises.

## **KNOWLEDGE, SKILLS, AND ABILITIES (KSA)**

General knowledge of electronic FM theory and practices as applied to two-way radio and microwave systems.

General knowledge of AM radio theory and practices.

Basic knowledge of solid state electronic theory and diagnostic and repair techniques.

Basic knowledge of digital logic theory and applications.

Basic knowledge of antenna, transmission line and propagation theory.

Basic knowledge of mathematics as applied to electronics.

Basic knowledge of the Federal Communications Commission Rules and Regulations pertaining to Public Safety Radio Services, microwave radio services, data communications, and telephone systems.

Skill in reading and interpretation of electronic schematic diagrams.

Skill in the use of electronic hand tools and soldering techniques.

Ability to diagnose and repair solid state communications equipment.

Ability to present ideas in direct, understandable language.

Ability to prepare clear and concise written reports of a technical subject matter.

Ability to operate communications equipment in accordance with Federal Communications Commission Rules and Regulations.

Ability to climb communications towers and poles.

Ability to install various antenna systems including microwave dish antennas.

Ability to work in all weather conditions and traverse deep snow on foot or snowshoe.

Ability to operate a four-wheel drive vehicle and a snow-cat.

Ability to lift and carry a load of 50 pounds over uneven terrain.

Ability to maintain harmonious relationships with fellow employees, other agency employees, and highway officials.

## **SPECIAL QUALIFICATIONS**

Possession of a valid Oregon Driver's License.

Possession of a Federal Communications Commission General Class Radio Telephone License or equivalent industrial certification is required.

**NOTE:** The KNOWLEDGE and SKILLS are required for initial consideration. ABILITIES may be required for initial consideration, at any time during the selection process, or during a trial service period as a final stage of the selection process. Some duties performed by positions in this class may require different KSA's. No attempt is made to describe every KSA required for **all** positions in this class. Additional KSA requirements will be explained on the recruiting announcement.

Adopted 1/90

Revised

Examples of work are typical of duties assigned to this class. No attempt is made to describe every duty performed by all positions in this class.