

COMMUNICATIONS TECHNICIAN 1-3

CLASS DESCRIPTION

General Responsibilities:

This is technical electronics work in the Communications Section of the Traffic Engineering Division. The work involves installing, maintaining, repairing and programming radio communication, emergency and related electronic and electrical equipment and systems. The work is performed under the general direction of the Communications Operation Supervisor and leadership of the Communications Operations Leadworker and may involve performing base system maintenance on a stand-by/emergency basis.

This is not intended to be an automatic progression series. Rather, advancement to a Communications Technician 2 or 3 depends on the needs of the department, budgeted vacancies, and a competitive process.

Communications Technician 1

This is entry-level technical electronics work in the Communications Section of the Traffic Engineering Division. The work may involve assisting higher level staff on more complex assignments.

Communications Technician 2

This is journey-level technical electronics work in the Communications Section of the Traffic Engineering Division. The work may involve leading lower level staff on assigned projects and assisting higher level staff on more complex assignments. The work at this level differs from that at the Communications Technician 1 level in terms of the complexity of the equipment and systems involved.

Communications Technician 3

This is specialized and technical electronics work related to computer data transfer in the Communications Section of the Traffic Engineering Division. The work involves independently performing the functions of a Communications Technician 2, as well as work relating to the installation and programming/re-programming of mobile data base controller systems including computer and software components. The work may involve leading lower level staff on assigned projects or in the absence of the Communications Operations Leadworker; assisting higher level staff on more complex assignments; assisting in training lower level staff; and performing base system maintenance on a stand-by/emergency basis.

Examples of Duties and Responsibilities:

Communications Technician 1

Install, maintain, repair and remove conventional mobile and portable radios (including antennas, speakers, microphones, control heads, cables, etc.) in public safety and maintenance equipment. Repair on-board microcomputer-based radio controller/operating circuitry.

Program and reprogram trunked and conventional microcomputer-based radio equipment for channels and operating parameters using an external personal computer and dedicated radio service software.

Perform technical and FCC performance checks of mobile two-way radio equipment, console equipment, radio system voting receivers, trunked radio system, central computer controllers, and other communications system equipment. Conduct performance checks of all microcomputer controlled mobile trunked radio equipment including checks for proper operation within system central controllers.

Install, maintain, repair and remove emergency and warning light systems on emergency and maintenance vehicles. Maintain and repair sirens, speakers and associated control equipment.

Install, monitor, repair and remove miscellaneous electrical and electronic equipment (e.g., CB radios, cellular phones, spotlights, ambulance medical equipment, chargers, interior lighting, marine radio, etc.) in emergency and maintenance vehicles.

Install, maintain, repair and remove telephones, telephone systems, PBX's, etc.

Provide technical repair and periodic system checks on miscellaneous electronic equipment, communications towers, transmitter facilities, antennas, emergency generators, microwave system power packs, etc.

Assist higher level technicians with the installation, maintenance and repair of communications systems equipment and associated components.

Perform scheduled stand-by duty to keep all public safety radio systems in service. Locate problem areas, perform necessary emergency repairs or contact higher level technicians for immediate action or assistance.

Perform related work as required.

Communications Technician 2

All the work of a Communications Technician 1, and

Install, maintain and repair two-way radio base and trunked stations, microprocessor-based dispatch equipment, point-to-point microwave systems, audio systems, security

systems, voting systems, paging terminals and other communication system oriented equipment.

Repair conventional and trunked mobile, marine and portable two-way radios, pagers, radar, test equipment and other communications related equipment (including antennas, speakers, microphones, control heads, cables, etc.) in public safety and maintenance equipment. Repair on-board microcomputer-based radio controller/operating circuitry.

Install, maintain and repair RF and audio cabling used in communication systems. Maintain and repair emergency AC/DC power systems at communication sites. Assist in maintaining parts and test equipment inventory.

Perform related work as required.

Communications Technician 3

All the work of a Communications Technician 2, and

Install, maintain, and repair mobile data base controller systems, software and interfaces. Repair mobile data terminals, computers, and software. Program mobile data base radios, mobile terminals, base controllers, and computer interfaces.

Program two-way radios on an individual basis and on a complete system basis.

Oversee the work of lower level staff on assigned projects or in the absence of the Communications Operations Leadworker. Assist in training lower level staff.

Perform related work as required.

QUALIFICATIONS

Knowledge, Skills and Abilities:

Communications Technician 1

Working knowledge of radio-transmitting and receiving equipment. Working knowledge of the methods, practices, tools, and materials used in the installation, repair, construction, testing and maintenance of communication equipment. Working knowledge of electronics and electrical theory as it pertains to the installation, repair and maintenance of communication equipment. Working knowledge of the methods and practices used in the programming and maintenance of both conventional and trunked microcomputer-based mobile and two-way radios. Working knowledge of the operating principles of computer-controlled trunked base radio backbone systems. Working knowledge of modern vehicle wiring systems including microprocessor controlled accessories, wiring inter-connection, airbags, airbag deployment circuitry and vehicle safety standards. Working knowledge of safe vehicle wiring practices and wiring for high current, sophisticated emergency vehicle wiring systems. Knowledge of computer systems and basic programming as they relate to communication systems and equipment.

Ability to detect and repair various types of complex electronic equipment problems. Ability to operate a personal computer to program radio equipment. Ability to detect defects in the operation of radio equipment and to repair or assist in the repair of such equipment and associated electronic and electrical equipment. Ability to understand and use radio service software and radio programming software. Ability to establish and maintain effective working relationships with the public, staff of other departments and co-workers. Ability to operate a motor vehicle. Ability to communicate effectively both orally and in writing. Ability to maintain adequate attendance.

Communications Technician 2

All of the above, and

Thorough knowledge of radio-transmitting and receiving equipment. Thorough knowledge of the methods, practices, tools, and materials used in the installation, repair, construction, testing and maintenance of communication equipment. Thorough knowledge of electronics and electrical theory as it pertains to the installation, repair and maintenance of communication equipment. Thorough knowledge of the methods and practices used in the programming and maintenance of both conventional and trunked microcomputer-based mobile and two-way radios. Thorough knowledge of the operating principles of computer-controlled trunked base radio backbone systems. Thorough knowledge of modern vehicle wiring systems including microprocessor controlled accessories, wiring inter-connection, airbags, airbag deployment circuitry and vehicle safety standards. Thorough knowledge of safe vehicle wiring practices and wiring for high current, sophisticated emergency vehicle wiring systems. Working knowledge of computer systems and basic programming as they relate to communication systems and equipment. Knowledge of the Federal Communications Commission rules and regulations pertaining to transmitting and receiving equipment. Ability to read and interpret detailed electrical/electronic schematics and to understand the composition of communication systems. Ability to use all types of calibrating, testing and troubleshooting electronic test equipment. Ability to lead lower-level staff on a project basis.

Communications Technician 3

All of the above, and

Thorough technical and operating knowledge of mobile data equipment, mobile data base controllers, and computer interfaces. Thorough knowledge of electronics and electrical theory as it pertains to the installation, repair and maintenance of mobile data transfer equipment. Thorough knowledge of computer systems and basic programming as they relate to communication systems and equipment, including mobile data transfer and related processes and equipment. Working knowledge of the Federal Communications Commission rules and regulations pertaining to transmitting and receiving equipment. Ability to detect and repair various types of complex computer-related equipment and programming problems.

Training and Experience:

Generally, positions in this classification will require:

Communications Technician 1

Three years of related experience in the installation, maintenance and/or repair of electronic communications equipment (such as mobile or two-way radios). Such experience would normally be gained after graduation from high school or equivalent, and completion of a radio communications/electronics program. Other combinations of training and/or experience which can be demonstrated to result in the possession of the knowledge, skills and abilities necessary to perform the duties of this position will also be considered.

Communications Technician 2

Two years of experience installing, maintaining, repairing, and programming radio communication, emergency, and related electronic and electrical equipment, equivalent to that gained as a Communications Technician 1 with the City of Madison. Such experience would normally be gained after graduation from high school or equivalent, and completion of a radio communications/electronics program. Other combinations of training and/or experience which can be demonstrated to result in the possession of the knowledge, skills and abilities necessary to perform the duties of this position will also be considered.

Communications Technician 3

Two years of experience installing, maintaining, repairing, and programming radio communication, emergency, and related electronic and electrical equipment, comparable to that gained as a Communications Technician 2 with the City of Madison. Such experience would normally be gained after graduation from high school or equivalent, and completion of a radio communications/electronics program. Other combinations of training and/or experience which can be demonstrated to result in the possession of the knowledge, skills and abilities necessary to perform the duties of this position will also be considered.

Specific training and experience requirements will be established at the time of recruitment.

Necessary Special Qualifications:

All positions

Possession of a valid State of Wisconsin drivers license.

Communications Technician 2

Possession of a general FCC operator's license or equivalent must be obtained within six months of employment. Failure to do so may result in the incumbent being removed from the position absent extenuating circumstances.

Communications Technician 3

Possession of an FCC operator's license or equivalent upon appointment.

Physical Requirements:

All positions

Ability to operate at various heights and to work from a ladder. Ability to perform heavy lifting and to occasionally lift up to 50 pounds. Incumbents will be expected to respond to emergency situations on a 24/7 basis according to a standby schedule.

Department/Division	Class Title	Comp. Group	Range
Traffic Engineering	Communications Technician 1	16	14
Traffic Engineering	Communications Technician 2	16	17
Traffic Engineering	Communications Technician 3	16	18

Approved: _____
Brad Wirtz
Human Resources Director

Date