**LINEWORKER COMPETENCIES (FROM CENTER FOR ENERGY WORKFORCE DEVELOPMENT’S COMPETENCY MODEL)**

* Installs, changes, transfers, moves and removes poles, pole line hardware, guys, transformers, lightning arresters, streetlight equipment, electrical cable, cross-arms, energized conductors, insulators, conduit, capacitor bank controls and any and all forms of electrical material and accessories utilized in the construction, maintenance and operation of electric circuits
* Installs, uses and removes protective equipment and devices on energized electric circuits of all voltages
* Works with hot line tools on circuits
* Performs steel tower structural work including the erection and removal and repair of steel towers and electrical equipment
* Installs and removes single-phase socket type meters through Class 200/240V on single family and duplex dwellings in conjunction with the installation and removal of services
* Operates switches and cutouts in transmission and distribution circuits
* Inspects poles and towers, making climbing inspections of conductors and equipment
* Drives trucks and is responsible for truck, tools and equipment
* Locates underground gas and electric facilities in conjunction with work assignment
* Cleans, tins and splices corresponding conductors by twisting ends together or by joining ends with metal clamps and soldering connections
* Climbs poles or uses truck-mounted buckets to access equipment
* Enters manholes and other confined spaces with energized cables to access equipment
* Terminates underground cabling
* Performs energized gloved hand work
* Cuts and peels lead sheathing and insulation from defective or newly installed cables and conduits prior to splicing
* Identifies defective sectionalizing devices, circuit breakers, fuses, voltage regulators, transformers, switches, relays or wiring using wiring diagrams and electrical-testing instruments
* Lays underground cable directly in trenches or strings it through conduit through the trenches
* Opens switches or attaches grounding devices in order to remove electrical hazards from disturbed or fallen lines or to facilitate repairs
* Installs and maintains street light circuits
* Sets and removes street light poles
* Performs minor tree trimming, cutting brush and removing line detriments to the extent necessary in performance of work assignment
* Understands mechanical relationships in practical situations such as understanding leverage, how pulleys work, the directions fear arrangements turn, heat flow, centrifugal force, etc.
* Is able to visualize length, width, thickness, height or depth and the differences among shapes, widths or lengths

# Air Force Enlisted Job Description

## 2E6X2 - COMMUNICATIONS CABLE AND ANTENNA SYSTEMS JOURNEYMAN

**Specialty Summary**: Provides command and control (C2) capabilities through installation, maintenance, fault isolation, and reconstitution of fixed cable and wireless distribution systems, local area networks (LAN), and wide area networks (WAN) in support of tactical and strategic operations. Monitors and analyzes performance of underground, buried, and aerial cable and antenna networks. Related DoD Occupational Subgroup: 162100.

**Duties and Responsibilities:**

Installs, maintains, reconstitutes, removes, and modifies copper core, coaxial, waveguide, and fiber optic cable and antenna systems. Climbs antenna support structures and wooden poles to various heights for maintenance and installation actions on cable and antenna systems. Installs and maintains dedicated local area network (LAN) and wide area network (WAN) media distribution systems, including distribution system interior wiring. Uses drawings, task lists, instructions, and technical data to work on copper core, coaxial, waveguide, fiber optic cable and antenna systems. Installs distribution equipment. Terminates copper core and fiber optic cables on main distribution frames and interface equipment. Operates and performs maintenance on tools, test equipment, auxiliary equipment, and vehicles such as backhoes, trenchers, cable trailers, cable reel trucks, and antenna construction vehicles.

Locates, repairs, and replaces faulty closures in copper core, waveguide, coaxial, and fiber optic cable systems. Performs pneumatic troubleshooting to locate faulty splice closures and demivalve assemblies. Excavates and backfills splice pits. Seals cables, repairs demivalves, and adjusts pressure transmitters and contactors. Installs and maintains aerial cable support structures such as pole line and suspension strands. Installs underground cable, uses duct rods, cleans cable duct systems, prepares pulling apparatus, and pulls in and temporarily bonds cable. Installs, maintains, and marks path of buried cable systems.

Monitors, analyzes, and troubleshoots copper core, waveguide, coaxial, and fiber optic cable systems. Determines cause of signal deterioration in cable carrying audio, video, digital, and data transmission. Troubleshoots, repairs, and replaces T-carrier equipment, fiber optic modems, and components. Interprets compressor meter readings and adjusts controls. Installs, maintains, and repairs or replaces damaged pneumatic and electrical components in cable air dryers. Uses test equipment to identify copper conductors and optic fibers in cables. Locates and traces buried cable. Locates and traces leaks in pressurized cable system. Performs operational checks and preventive maintenance inspections.

Maintains communications and computer systems installation records (CSIRs), maintenance and inspection cable records, and technical orders.

Supervises, plans, organizes, and directs cable and antenna installation and maintenance activities. Develops and improves work methods and procedures related to installation and maintenance of all cable and antenna systems.

**Specialty Qualifications:**

**Knowledge**. Knowledge is mandatory of installation and maintenance management functions; wire transmission principles; electrical and lightwave communications on aerial, buried and underground cable systems; hardened missile cable pressure and alarm systems; antenna and obstruction systems rectifiers, power supplies, motors, generators and servomechanisms; antenna fundamentals, including antenna theory and principles of rotators, amplifiers and control cables; antenna installation procedures, including radio frequency cable, waveguide splicing, and repair and maintenance techniques of radomes; operation and theory of cable pressurization, alarm systems, locating cable faults, identifying causes of deterioration in cable systems, cable testing procedures and methods of sealing cables; safety precautions related to oxygen deficiency, oxygen enrichment, toxic and explosive gases, working aloft, rescue procedures for aerial and underground environments, basic first aid and cardiopulmonary resuscitation; use and limitations of test set operations; corrosion prevention and control procedures; and capabilities, limitations, operations and functional use of basic cable and antenna systems and associated hardware.

**Education**. For entry into this specialty, completion of high school with courses in analytical mathematics is desirable.

**Training**. For award of AFSC 2E632, completion of the basic communications cable and antenna systems course is mandatory.

**Case Study Questions:**

Select the top five skill sets that would be transferrable from the Air Force position to a Lineworker position in the energy industry?

What are two to three knowledge or skill sets where someone would need training, whether before entering the energy industry or on the job?