



Biomedical Equipment (4A2X1)

Installs, inspects, repairs, and modifies biomedical equipment and support systems. Performs pre-purchase evaluations of medical devices and advises on operational theory, underlying physiological principles, and safe clinical applications of biomedical equipment. Implements organizational maintenance support for all medical devices used within the medical treatment facility (MTF), medical research laboratories, air transportable hospitals and clinics, and contingency hospitals. Provides technical guidance and intermediate maintenance support on medical equipment systems when assigned to a regional Medical Equipment Repair Center (MERC). Directs the facility management program when assigned.

Alternate Titles:

ELECTRONICS MECHANICS; DENTAL EQUIPMENT REPAIRERS; METEOROLOGICAL EQUIPMENT REPAIRERS; BIOMEDICAL EQUIPMENT TECHNICIANS; ELECTRONICS TECHNICIANS

Duties and Responsibilities:

BACKGROUND

Inspects, services, and modifies biomedical equipment and support systems. Inspects biomedical equipment systems to determine operational status and compliance with technical standards and specifications. Performs or supervises preventive maintenance tasks such as lubrication; mechanical adjustment; and replacement of filters, tubing, and other parts subject to deterioration. Evaluates user maintenance procedures and ensures safe medical equipment practices are exercised. Instructs and advises personnel in the care and safe, effective use of medical equipment. Calibrates medical equipment according to manufacturers' technical literature, pertinent federal regulations, national standards, state and local laws, and Air Force guidance. Applies electrical, electronic, optical, mechanical, pneumatic, hydraulic, and physiological principles to diagnose and locate system malfunctions. Uses test equipment, technical data, engineering drawings, schematics, and reference materials for troubleshooting and repair of medical equipment. Performs authorized modifications to biomedical equipment.

WHAT THEY DO

Electronic instrument repairers in the military perform some or all of the following duties:

Test medical instruments, navigational controls, and simulators using electronic and electrical test equipment

Read technical diagrams and manuals in order to locate, isolate, and repair instrument parts

Replace equipment parts such as resistors, switches, and circuit boards

TRAINING PROVIDED

Job training consists of 15 to 30 weeks of classroom instruction, including practice in repairing and replacing equipment parts. Training length varies depending on specialty. Course content typically includes:

Principles of electronics

Use and maintenance of electrical and electronic test equipment

Equipment repair exercises

The Navy and the Marine Corps offer certified apprenticeship programs for some specialties in this occupation.

WORK ENVIRONMENT

Electronic instrument repairers usually work in repair shops and laboratories.

PHYSICAL DEMANDS

Normal color vision is required to work with color-coded wiring. Some specialties require a minimum age of 18 to enter.

HELPFUL ATTRIBUTES

Helpful school subjects include math and electronic equipment repair. Helpful attributes include:

Interest in working with electronic equipment

Interest in solving problems

Attention to detail

CIVILIAN COUNTERPARTS

Most civilian electronic instrument repairers work for manufacturing, medical research, satellite communications firms, or commercial airlines. They may also work for government agencies, such as the Federal Aviation Administration, the National Aeronautics and Space Administration, or the National Weather Service. They perform the same kind of duties as military instrument repairers. They are called electronics mechanics, dental equipment repairers, or biomedical equipment technicians, depending on their specialty.