

## **INTEGRATED AVIONICS COMPUTERIZED TEST STATION**

1. **SPECIALTY SUMMARY:** Inspects, troubleshoots, repairs, modifies, programs, calibrates and certifies integrated avionic computerized test stations, Support Equipment (SE) and system components at the Intermediate Level by using shop avionics SE and specialized precision measuring equipment. Inspects, troubleshoots, repairs, services, modifies, installs, calibrates and certifies avionic computerized test stations and SE, supervises intermediate level integrated avionic component activities.

### **2. DUTIES AND RESPONSIBILITIES:**

#### **a. ANALYZES PERFORMANCE AND ISOLATES MALFUNCTIONS OF AVIONIC ELECTRONIC EQUIPMENT:**

(1) Operates equipment to determine operational condition, analyze performance and isolate malfunction of subsystems to include attack, navigation and Doppler radar systems; electro-optical and infrared sighting and sensor systems; armament control systems; analog and digital computer systems; inertial navigation systems; communications/navigation systems; flight control systems and flight data recorder systems.

(2) Traces logic, schematic and wiring diagrams, using appropriate self-test functions, computerized test stations and precision measuring equipment such as oscilloscopes, AC/DC standards, digital voltmeters, simulators, signal generators, power meters, rate tables, spectrum analyzers, pulse generators, wave meters, frequency counters, pressure testers and general purpose and special hand tools.

(3) Determines scope of repair or adjustment required to correct faulty operation.

(4) Performs operational test of computerized test stations to ensure satisfactory performance.

(5) Monitors equipment performance to detect recurring malfunctions.

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#### **b. INSPECTS, DISASSEMBLES, REPAIRS, REASSEMBLES, ALIGNS, PROGRAMS, CALIBRATES, MODIFIES AND CONDUCTS CHECK OUTS OF INTEGRATED AVIONIC COMPONENTS:**

(1) Checks avionic electronic equipment to determine scope of repair required.

(2) Disassembles unserviceable units down to the smallest bit, piece or module authorized, using necessary instruments, gauges and special tools.

(3) Repairs oscillator, amplifier, wave shaping, logic circuits, microwave equipment, servo mechanisms and electro-optical assemblies by replacing solid state devices, vacuum tubes, microminiaturized modules, gyros, motors, tachometers, infrared sensing devices and any other required components.

(4) Assembles units after repair, performs alignments and makes final shop checks.

(5) Modifies avionic components according to applicable technical publications.

**c. ANALYZES AND ISOLATES AVIONIC COMPUTERIZED TEST STATIONS AND SE MALFUNCTIONS:**

- (1) Analyzes malfunctions and maintenance problems on avionic computerized test stations and SE, using schematic, logic and wiring diagrams, programming tables and troubleshooting charts.
- (2) Diagnoses circuit operating characteristics of equipment to determine malfunctions.
- (3) Isolates problems to the failing component part, using equipment self-test capabilities, oscilloscopes, frequency meters, signal generators, digital and differential voltmeters and other special and standard tools and test equipment.
- (4) Analyzes recurring malfunctions and initiates corrective action by submission of material deficiency reports or proposed modifications.
- (5) Prepares and recommends revised maintenance procedures to existing technical publications and intermediate maintenance directives.

**d. CERTIFIES, CALIBRATES, MODIFIES, REPAIRS AND OVERHAULS AVIONIC COMPUTERIZED TEST STATIONS AND SE:**

- (1) Calibrates, aligns and certifies avionic computerized test stations and SE to the appropriate shop standards of the Precision Measuring Equipment Laboratory (PMEL) using special and standard tools and procedures.
- (2) Overhauls and repairs assemblies and subassemblies of avionics SE and performs alignments to verify proper operation of the equipment.
- (3) Removes and replaces components of assemblies down to the smallest bit, piece or module authorized, using special and common hand tools, soldering devices and special electronic instruments.
- (4) Performs scheduled and periodic maintenance on avionic computerized test stations and SE.
- (5) Plans and installs avionic computerized test stations and SE, including equipment placement, power and coiling connections, and temperature sensing and controlling devices.
- (6) Modifies and updates avionics SE according to applicable technical publications.

**e. INSPECTS AND EVALUATES COMPONENTS OF AVIONIC COMPUTERIZED TEST STATIONS AND SE:**

- (1) Inspects and evaluates self-test functions of avionic computerized test stations and SE to determine operational condition.
- (2) Interprets inspection findings and determines adequacy of corrective action.
- (3) Checks installed and repaired components and subassemblies to ensure proper standards of maintenance.
- (4) Reviews material deficiency reports, maintenance analysis reports, technical data changes and equipment records pertaining to operation and maintenance of avionics SE.
- (5) Replaces common test equipment and coordinates the scheduling

of these items to the PMEL or Electrical Standards Set