

**RATING PERFORMANCE QUALIFICATION (RPQ)
PERFORMANCE SUPPORT WORKSHEET
ELECTRONICS TECHNICIAN (ET)**

INSTRUCTIONS

Rating Performance Qualifications (RPQ) Performance Support Worksheet shall be completed in accordance with the Enlisted Accessions, Evaluations and Advancements, COMDTINST M1000.2 and ALCOAST 577/11. Personnel are required to demonstrate proficiency in all performance qualifications for the next higher pay grade to be eligible for advancement. The DATE and INITIALS column shall be completed by a designated supervisor (E-5 or above) at least one pay grade higher than the trainee and preferably of the same occupational specialty. Form CG-RPQ-ET becomes official documentation to be kept in the member's Personnel Data Record (PDR) denoting eligibility for administration of the rating End of Course Test (EOCT) and, if applicable, participation in a Service Wide Exam competition (SWE). Although demonstration and sign-off of any new RPQ at or below the member's current pay grade is not required, the RPQ will be used to develop SWE questions. It is the member's responsibility to be proficient in all currently published performance qualifications, up to and including those of their present pay grade for their specific rating to facilitate learning of junior personnel.

Performance Qualifications numbering system: Example **5.A.01**

- The number **5** indicates an E-5 level qualification requirement.
- The letter **A** indicates the subject section within the qualification requirements.
- The sequence number **01** indicates the 1st qualification within the subject section.

Rating courses are developed using reference material denoting official policy and/or technical standards. Most reference materials are available online through the Coast Guard Directives System at <http://www.uscg.mil/directives/>. Other reference material may be obtained from the unit's library, TRACEN course writers, CG Institute, or other government sources. A reference material list is located at the end of this document. If any reference material is found to be in contradiction the cited Coast Guard reference shall take precedence.

The Rating Force Master Chief of this occupational specialty is the primary proprietor of these RPQs. The most up to date RPQ revisions are available digitally on the CG Learning Management System at <https://elearning.uscg.mil> . RPQ paper copies are also available from the unit's Education Services Officer (ESO).

NOTE: Performance of ET tasks should be completed in an actual work setting whenever possible but may also be performed under simulated conditions.

Appendices

- A. Maintenance Philosophy Considerations
- B. Glossary
- C. References
- D. Other Publications of Interest

RATING			ABBREVIATION
ELECTRONICS TECHNICIAN (Effective for the Oct/Nov 2010 SWE)			ET
DATE COMPLETED ALL PERFORMANCE QUALIFICATIONS FOR RATE LEVEL			
E-4	E-5	E-6	
E-7	E-8	E-9	
NAME (Last, First, Middle Initial)			EMPLID NUMBER

RATING: Electronics Technician	INIT	DATE
<p>A. ADMINISTRATION</p> <p>4.A.01 OBTAIN parts and assemblies from inventory using unit inventory management system IAW the Supply Policy and Procedures Manual (SPPM), COMDTINST M4400.19 (series); the CMPlus User's Guide; the ALMIS User's Guide.</p> <p><i>SupGuide: To include researching CG PARTS. The technician must be able to access the local logistics management tool system, locate the required part or assembly, verify the correct part listing, identify storage location, and quantity available. The technician must be able to retrieve the part from storage, verify correct, and make entries into local logistics management tool to subtract part from inventory.</i></p> <p>4.A.02 PREPARE a DD-1149 for transfer of electronic equipment IAW the Supply Policy and Procedures Manual (SPPM), COMDTINST M4400.19 (series).</p> <p>5.A.01 PROCURE spare parts, modules, and maintenance supplies using government and commercial sources IAW the Simplified Acquisitions Procedures Handbook, COMDTINST M4200.13 (series); the Supply Policy and Procedures Manual (SPPM), COMDTINST M4400.19 (series); associated technical manual; SFLC Support Gram; FEDLOG User's Guide; the CMPlus User's Guide; the ALMIS User's Guide.</p> <p>5.A.02 VALIDATE the unit's test equipment calibration program IAW the Electronics Manual, COMDTINST M10550.25 (series); Navy Instrument Calibration Procedures (NICP) publications; Ordnance Manual, COMDINST M8000.2 (Series); the CMPlus User's Guide; the ALMIS User's Guide; applicable Standard Operating Procedures (SOPs).</p> <p><i>SupGuide: Understand the requirements for calibrating test equipment and schedule developments to meet calibration requirements and avoid equipment use conflicts.</i></p> <p>5.A.03 GENERATE an equipment casualty report IAW the Operational Reports, NWP 1-03-1; Casualty Reporting Procedures (CASREP), COMDTINST M3501.3 (series); applicable Standard Operating Procedures (SOP's).</p> <p>5.A.04 SUBMIT Form OPNAV 4790C/K to document an electronics equipment configuration change IAW the Electronics Manual, COMDTINST M10550.25 (series); Supply Policy and Procedures Manual (SPPM), COMDTINST M4400.19 (series); the Ship's Maintenance and Material Management (3M) Manual, OPNAVINST 4790.4 (series).</p>		
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<p>5.A.05 VERIFY the unit's Planned Maintenance System (PMS) is accurate IAW the Electronics Manual, COMDTINST M10550.25 (series); Ordnance Manual, COMDTINST M8000.2 (series); Ship's Maintenance and Material Management (3M) Manual, OPNAVINST 4790.4 (series); the CGPMS User's Guide; the ALMIS User's Guide.</p> <p>5.A.06 DOCUMENT local destruction of electronic equipment IAW the Supply Policy and Procedures Manual (SPPM), COMDTINST M4400.19 (series).</p> <p>5.A.07 PROCESS a Coast Guard Mandatory Turn In Repairable (MTR) faulty module for return to appropriate supply depot IAW the Supply Policy and Procedures Manual (SPPM), COMDTINST M4400.19 (series); Electronic Installation and Maintenance Book, General Handbook, NAVSEA SE000-00-EIM-100; SFLC Support Gram.</p> <p>6.A.01 DEVELOP a unit PMS schedule for electronic equipment for the following using the current logistics management tool IAW the Electronics Manual, COMDTINST M10550.25 (series); Ordnance Manual, COMDTINST M8000.2 (series); Ship's Maintenance and Material Management Manual (3M), OPNAVINST 4790.4 (series); the CGPMS User's Guide; the ALMIS User's Guide:</p> <ul style="list-style-type: none"> • CG Owned • Navy Type Navy Owned (NTNO) <p>6.A.02 AUDIT Safety Lock-Out/Tag-Out Log IAW Electronics Manual, COMDTINST M10550.25 (series); and Equipment Tag-Out Procedures, COMDTINST 9077.1 (series).</p> <p>6.A.03 AUDIT spare parts and modules inventory authorized by current electronics inventory management program IAW the Supply Policy and Procedures Manual (SPPM), COMDTINST M4400.19 (series); the CMPlus User's Guide; the ALMIS User's Guide.</p> <p>6.A.04 RETURN Depot Level Repairable (DLR) circuit card carcasses IAW the Supply Policy and Procedures Manual (SPPM), COMDTINST M4400.19 (series); SFLC Support Gram.</p>		
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<p>6.A.05 INSPECT electronic systems for Electro-Magnetic Interference (EMI) hazards IAW the Shipboard Bonding, Grounding & Other Techniques for Electro-Magnetic Compatibility, Electromagnetic Pulse Mitigation and Safety, MIL-STD-1310H; Naval Ships' Technical Manual, Chapter 400, Electronics; NAVSEA OP 3565/NAVAIR 16-1-529 Volume 2 Electromagnetic Radiation Hazards(U)/Hazards to Ordnance.</p> <p>6.A.06 IMPLEMENT the installation of an electronics equipment and/or system IAW the installation documentation (e.g. Engineering Change/Time Compliance Technical Order -TCTO); Electronics Manual, COMDTINST M10550.25 (series); Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; SFLC and C4ITSC TCTO Process Guide; SFLC and C4ITSC Engineering Change Process Guide; SFLC Maintenance/Publication Feedback (CG-22) Process Guide; Coast Guard Configuration Management Policy, COMDTINST 4130.6 (series).</p> <p><i>SupGuide: To include updating the ship's/unit's drawings and blueprints to match as-built configuration. The supervisor will ensure that all installation configuration data was properly documented and submitted to proper authorities.</i></p> <p>6.A.07 VERIFY the installation of a Field Change/ORDALT to an electronics equipment and/or system per the Field Change/ORDALT documentation IAW the Electronics Manual, COMDTINST M10500.25 (series); Ordnance Manual, COMDTINST M8000.2 (series); and the Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160.</p> <p>7.A.01 INSPECT an antenna tower for climbing safety and structural integrity IAW the Electronics Manual, COMDTINST M10550.25 (series); Tower Manual, COMDTINST M11000.4 (series); and Civil Engineering Manual, COMDTINST M11000.11 (series).</p> <p>7.A.02 SCHEDULE a system groom/inspection/tech assist coordinating availability of personnel, equipment and power systems IAW the Electronics Manual, COMDTINST M10550.25 (series).</p>		
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<p>7.A.03 REVIEW the results from a technical groom or other system-wide maintenance evolution and develop a work action plan from the results IAW the Electronics Manual, COMDTINST M10550.25 (series).</p> <p><i>SupGuide: Initiate any required actions to repair/replace those systems not meeting specifications.</i></p> <p>7.A.04 MAINTAIN electronic casualty control repair folder IAW the Naval Warfare Publication Mobility, Logistics, Fleet Support Operations, Noncombat Operations and Explosive Ordnance Disposal Exercises, FXP 4 (Rev A).</p> <p>7.A.05 DEVELOP local PMS procedures using the local logistics management tool IAW the Electronics Manual, COMDTINST M10550.25 (series); Coast Guard Logistics Handbook, COMDTINST M4000.2 (series); CMPlus User's Guide; the ALMIS User's Guide.</p> <p>8.A.01 DEVELOP an Engineering Change Request (ECR) or Time Compliance Technical Order (TCTO) IAW the Electronics Manual, COMDTINST M10550.25 (series); SFLC and C4ITSC TCTO Process Guide; SFLC and C4ITSC Engineering Change Process Guide; SFLC Maintenance/Publication Feedback (CG-22) Process Guide; Naval Engineering Manual, COMDTINST M9000.6 (series); applicable SOPs.</p> <p>8.A.02 REVIEW a shore-side statement of work for potential impact on installed electronic systems IAW Electronics Manual, COMDTINST M10550.25 (series); the Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160</p>		
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<p>B. PERFORMANCE & TRAINING</p> <p>5.B.01 CONDUCT a safety brief on the following IAW the Electronics Manual, M10550.25 (series); Cutter Training and Qualification Manual, COMDTINST M3502.4 (series); Protecting Personnel from Electromagnetic Fields, DODINST 6055.11; Laser Protection Program, DODINST 6055.15; Safety and Occupational Health Program, DODINST 6055.1; Naval Ships' Technical Manual, Chapter 400, Electronics; NAVSEA OP 3565/NAVAIR 16-1-529 Electromagnetic Radiation Hazards(U)/Hazards to Ordnance Vol 2.</p> <ul style="list-style-type: none"> • Personnel working in and around installed electronics equipment • Personnel in RF Hazards of Electro-Magnetic Radiation to Fuel (HERF) • Personnel in RF Hazards of Electro-Magnetic Radiation to Ordnance (HERO) • Personnel in RF Hazards of Electro-Magnetic Radiation to Personnel (HERP) <p>5.B.02 IDENTIFY a cable fault using a Time Domain Reflectometer (TDR) IAW the Electronics Manual, COMDTINST M10550.25 (series); the manufacturer's technical manual.</p> <p>5.B.03 MEASURE dielectric impedance of a coaxial cable or an HF antenna using a megohmmeter (megger) IAW the Electronics Manual, COMDTINST M10550.25 (series); Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110.</p> <p>5.B.04 TRAIN personnel in the construction of multi-pin and RF connectors IAW the Electronics Manual, COMDTINST M10550.25 (series); Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110; Standard Maintenance Practices Miniature/Micro-miniature (2M) Electronic Assembly Repair, NAVSEA SE004-AK-TRS-10/2M; manufacturer's guidelines.</p>		
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<p>7.B.01 PREPARE an annual training plan IAW the Electronics Manual, COMDTINST M10550.25 (series); Performance, Training, and Education Manual, COMDTINST M1500.10 (series); the Cutter Training and Qualification Manual, COMDTINST M3502.4 (series).</p> <p>SupGuide: <i>Understand the requirements for training, the various topics that are required or should be covered and dealing with scheduling conflicts.</i></p> <p>7.B.02 TRAIN personnel on local unit supply processes and procedures IAW the Electronics Manual, COMDTINST M10550.25 (series); Ordnance Manual, COMDTINST M8000.2 (series); Supply Policy and Procedures Manual (SPPM), COMDTINST M4400.19 (series); SFLC Support Gram.</p> <p>SupGuide: <i>To include fund codes, property disposal procedures, spending limits, Allowance Change Request (ACR), and Inventory Control Compliance Program (ICCP).</i></p> <p>C. SPECIAL & EMERGENCY PROCEDURES</p> <p>4.C.01 DEMONSTRATE the procedures for extinguishing an electrical fire IAW the Electronics Installation and Maintenance Book, General Handbook, NAVSEA SE000-00-EIM-100.</p> <p>4.C.02 DEMONSTRATE the procedure for rescuing an electric shock victim from an energized circuit IAW the Electronics Manual, COMDTINST M10550.25 (series); and Electronics Installation and Maintenance Book, General Handbook, NAVSEA SE000-00-EIM-100.</p> <p>4.C.03 DEMONSTRATE the procedure for performing Cardio-Pulmonary Resuscitation (CPR) IAW the Electronics Manual, COMDTINST M10550.25 (series); American Heart Association guidelines; American Safety and Health Institute guidelines.</p> <p>4.C.04 DEMONSTRATE Lock-Out/Tag-Out procedures for electronics/electrical equipment for maintenance and/or repair IAW the Electronics Manual, COMDTINST M10550.25 (series); Ordnance Manual, COMDTINST M8000.2 (series); Equipment Tag-Out Procedures, COMDTINST 9077.1 (series).</p> <p>SupGuide: <i>The technician must demonstrate the proper procedure for determining the need to tag-out and tag-in equipment or circuits and properly tag-out/tag-in as required. The technician must complete the process observing all safety and procedural requirements.</i></p>		
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<p>4.C.05 DEMONSTRATE procedures for working aloft, including harness and safety line inspection, wearing of safety harness and head protection and hazards posed by stack gasses or RF radiation sources IAW the Electronics Manual, COMDTINST M10550.25 (series); Electronics Installation and Maintenance Book, General Handbook, NAVSEA SE000-00-EIM-100; the Tower Manual, COMDTINST M11000.4 (series).</p> <p><i>SupGuide: The technician must identify equipment required to go aloft, safety procedures to follow, and permissions required. Technician must conduct a safety check of all equipment and demonstrate the proper procedure for wearing and using.</i></p> <p>4.C.06 DEMONSTRATE the procedures to test high voltage gloves IAW the Electronics Manual, COMDTINST M10550.25 (series); Electronics Installation and Maintenance Book, General Handbook, NAVSEA SE000-00-EIM-100.</p> <p><i>SupGuide: The technician must state the inspection requirements and demonstrate the proper procedure for testing high voltage gloves and shells.</i></p> <p>4.C.07 DEMONSTRATE the procedures to measure a voltage in excess of 300V IAW the Electronics Manual, COMDTINST M10550.25 (series); Electronics Installation and Maintenance Book, General Handbook, NAVSEA SE000-00-EIM-100; the equipment technical manual.</p> <p><i>SupGuide: The technician must demonstrate the proper procedure for measuring a voltage in excess of 300 V. The technician must complete the process observing all safety and procedural requirements.</i></p> <p>4.C.08 DISCHARGE de-energized high voltage circuits IAW the Electronics Manual, COMDTINST M10550.25 (series); Electronics Installation and Maintenance Book, General Handbook, NAVSEA SE000-00-EIM-100; the associated technical manual.</p>		
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<p>5.C.01 INSPECT electronics equipment spaces to ensure required warning signs are posted IAW the Electronics Manual, COMDTINST M10550.25 (series); Protecting Personnel from Electromagnetic Fields, DODINST 6055.11; Hazard Communication of Workplace Materials, COMDTINST M6260.21 (series); Naval Ships' Technical Manual, Chapter 400, Electronics.</p> <p>Signs include, but are not limited to:</p> <ul style="list-style-type: none"> • RF Radiation Hazard • High Voltage Warning • Shock Hazard Warning • CPR Procedures • Multiple Power Sources • Permissible RF exposure areas • Toxic Gas warning • Hearing Protection requirements <p>SupGuide: <i>Understand why and where signs are required, ensure that signs are posted for the safety of all personnel, and take actions required to correct any discrepancies.</i></p> <p>5.C.02 DEMONSTRATE safety precautions required to eliminate/limit exposure to Radio Frequency (RF) radiation IAW the Electronics Manual, COMDTINST M10550.25 (series); Naval Ships' Technical Manual, Chapter 400, Electronics.</p> <p>SupGuide: <i>Technician understands the sources of RF hazards, exposure limitation methods, physical hazards associated with exposure, and permissible exposure limits to RF radiation.</i></p>		
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<p>D. ELECTRONIC INSTALLATION STANDARDS</p> <p>4.D.01 WEATHERPROOF an exposed connector IAW the Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110.</p> <p>4.D.02 INSTALL the following coaxial connectors IAW the Electronics Manual, COMDTINST M10550.25 (series); Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110; Standard Maintenance Practices Miniature/Micro-miniature (2M) Electronic Assembly Repair, NAVSEA SE004-AK-TRS-10/2M; manufacturer's guidelines:</p> <ul style="list-style-type: none"> • PL-259 • N-type • BNC • TNC • Mini-UHF <p>4.D.03 INSTALL the following multiple conductor cable connectors IAW the Electronics Manual, COMDTINST M10550.25 (series); Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110; Standard Maintenance Practices Miniature/Micro-miniature (2M) Electronic Assembly Repair, NAVSEA SE004-AK-TRS-10/2M; manufacturer's guidelines.</p> <ul style="list-style-type: none"> • Cannon • RJ • MOLEX • DB • DIN <p>4.D.04 EVALUATE coaxial cable IAW the Electronics Manual, COMDTINST M10550.25 (series); and Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110; Standard Maintenance Practices Miniature/Micro-miniature (2M) Electronic Assembly Repair, NAVSEA SE004-AK-TRS-10/2M.</p> <p>4.D.05 EVALUATE multiple conductor cable IAW the Electronics Manual, COMDTINST M10550.25 (series); and Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110; Standard Maintenance Practices Miniature/Micro-miniature (2M) Electronic Assembly Repair, NAVSEA SE004-AK-TRS-10/2M.</p>		
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<p>5.D.01 TRACE a point-to-point connection through multiple compartments using cable tags, unit drawings or ship's COEDS IAW the Electronics Manual, COMDTINST M10550.25 (series); and Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110.</p> <p>5.D.02 MAINTAIN fault protection, lightning protection, and signal reference ground subsystems IAW the Electronics Manual, COMDTINST M10550.25 (series); Shipboard Bonding, Grounding, and other Techniques for Electromagnetic Compatibility, Electronic Pulse Mitigation, and Safety, MIL-STD-1310H; Grounding, Bonding and Shielding, MIL-STD-188-124B; Grounding, Bonding, & Shielding for Electronic Equipment & Facilities, MIL-HDBK-419A; Naval Ships' Technical Manual, Chapter 400, Electronics.</p> <p><i>SupGuide: Understand the purpose and operation of protection circuits. Ensure that power protection circuits are installed and working to protect equipment from power surges and sags in the power system and power surges (lightning) through external wiring and antennas.</i></p> <p>5.D.03 INSTALL cabling through multi-cable transits (e.g. Rox/Nelson) IAW the Electronics Manual, COMDTINST M10550.25 (series); Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110; manufacturer's guidelines.</p> <p>5.D.04 INSTALL Heliac cable connector IAW the Electronics Manual, COMDTINST M10550.25 (series); Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110;; manufacturer's guidelines.</p> <p>5.D.05 EVALUATE Heliac cables IAW the Electronics Manual, COMDTINST M10550.25 (series); Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110; manufacturer's guidelines.</p> <p>5.D.06 INSTALL stuffing tubes IAW the Electronics Manual, COMDTINST M10550.25 (series); Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110; manufacturer's guidelines.</p>		
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<p>6.D.01 VERIFY equipment operation via System Operation and Verification Test (SOVT) IAW SOVT documentation; associated technical manual; the Electronics Manual, COMDTINST M10550.25 (series)</p> <p>6.D.02 VERIFY proper grounding standards for electronic systems IAW the Electronics Manual, COMDTINST M10550.25 (series); Shipboard Bonding, Grounding, and other Techniques for Electromagnetic Compatibility, Electromagnetic Pulse Mitigation, and Safety, MIL-STD-1310H; Grounding Bonding and Shielding, MIL-STD-188-124B; Grounding, Bonding, and Shielding for Electronic Equipment & Facilities, MIL-HDBK-419A.</p> <p>7.D.01 TRAIN personnel on basic cable installation IAW the Electronics Manual, COMDTINST M10550.25 (series); Navy Installation and Maintenance Book (NIMB), Installation Standards, NAVSEA SE000-00-EIM-110; Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; Red/Black Engineering Installation Guidelines, MIL-HDBK-232.</p> <p>SupGuide: <i>To include red black separation, grounding and bonding, active and passive filtering.</i></p>		
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<p>E. ELECTRONIC SYSTEMS PLANNED MAINTENANCE</p> <p>Note: <i>RECORD</i> maintenance actions (completed and deferred) into unit work management system for each item in this section.</p> <p>SupGuide: <i>To include legacy and modernized electronic work management systems or current installed USCG logistics system at your unit.</i></p> <p>4.E.01 PERFORM planned maintenance on a VHF transceiver system IAW the CGPMS; Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer's technical manual.</p> <p>4.E.02 PERFORM planned maintenance on an HF transceiver system IAW the CGPMS; Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer's technical manual.</p> <p>4.E.03 PERFORM planned maintenance on a direction finder system IAW the CGPMS; Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer's technical manual.</p> <p>4.E.04 PERFORM planned maintenance on an HF antenna system IAW the CGPMS; Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer's technical manual.</p> <p>4.E.05 PERFORM planned maintenance on a VHF/UHF antenna system IAW the CGPMS; Electronics Installation and Maintenance Book, General Maintenance NAVSEA SE000-00-EIM-160; the manufacturer's technical manual.</p> <p>4.E.06 PERFORM planned maintenance on a depth sounding system IAW the CGPMS; Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer's technical manual.</p> <p>4.E.07 PERFORM planned maintenance on a DGPS or GPS receiver IAW the CGPMS; Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer's technical manual.</p>		
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<p>4.E.08 PERFORM planned maintenance on a Scalable Integrated Navigation System (SINS) IAW the Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer's technical manual.</p> <p>SupGuide: <i>To include small boat radar system.</i></p> <p>4.E.09 MAINTAIN an Automatic Identification System (AIS) IAW the manufacturer's technical manual</p> <p>4.E.10 MAINTAIN a Flight Deck Closed Circuit Television (FDTV) system IAW the Electronics Manual, COMDTINST M10550.25 (series); the manufacturer's technical manual.</p> <p>4.E.11 MAINTAIN a cryptographic system IAW the Electronics Manual, COMDTINST M10550.25 (series); Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160 Section 2, Cryptographic Devices Limited Maintenance Manual (LMM's); Cryptographic Operation Maintenance Manual (KAM's).</p> <p>4.E.12 PROGRAM code plug capable radios using appropriate software IAW TISCOM SMEF Advisories; equipment technical manuals.</p> <p>5.E.01 PERFORM planned maintenance on a UHF transceiver system IAW the Electronics Manual, COMDTINST M10550.25 (series); Equipment Tag-Out Procedures, COMDTINST 9077.1 (series); Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; applicable EILSPs; the manufacturer's technical manuals.</p> <p>5.E.02 PERFORM planned maintenance on an Electronic Charting System (ECS) IAW the CGPMS; the Electronics Manual, COMDTINST M10550.25 (series); Equipment Tag-Out Procedures, COMDTINST 9077.1 (series); applicable EILSPs; the manufacturer's technical manuals.</p> <p>5.E.03 PERFORM planned maintenance on a Surface Search Radar (SSR) system IAW the CGPMS; the Electronics Manual, COMDTINST M10550.25 (series); Equipment Tag-Out Procedures, COMDTINST 9077.1 (series); applicable EILSPs; the manufacturer's technical manuals.</p>		
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<p>6.E.01 MAINTAIN an integrated networked video camera system IAW the Electronics Manual, COMDTINST M10550.25 (series); applicable EILSPs; the manufacturer’s technical manuals.</p> <p><i>SupGuide: To include basic networking and data communication.</i></p> <p>F. ELECTRONIC SYSTEMS CORRECTIVE MAINTENANCE</p> <p><i>Note: RECORD maintenance actions (completed and deferred) into unit work management system for each item in this section.</i></p> <p><i>SupGuide: To include legacy and modernized electronic work management systems or current installed USCG logistics system at your unit.</i></p> <p>4.F.01 PERFORM corrective maintenance on a VHF transceiver system IAW the Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer’s technical manual.</p> <p>4.F.02 PERFORM corrective maintenance on an HF transceiver system IAW the Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer’s technical manual.</p> <p><i>SupGuide: To include Remote HF Systems and communication patching systems.</i></p> <p>4.F.03 PERFORM corrective maintenance on an HF antenna system IAW the Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer’s technical manual.</p> <p>4.F.04 PERFORM corrective maintenance on a VHF/UHF antenna system IAW the Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer’s technical manual.</p>		
<p>NAME (Last, First, Middle Initial)</p>	<p>EMPLID NUMBER</p>	

RATING: Electronics Technician	INIT	DATE
<p>4.F.05 PERFORM corrective maintenance on a depth sounding system IAW the Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer’s technical manual.</p> <p>4.F.06 PERFORM corrective maintenance on a DGPS or GPS receiver system IAW the Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; and the manufacturer’s technical manual.</p> <p>4.F.07 PERFORM corrective maintenance on Scalable Integrated Navigation System (SINS) IAW the Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer’s technical manual.</p> <p><i>SupGuide: To include small boat radar system</i></p> <p>4.F.08 PERFORM corrective maintenance on a direction finder system IAW the Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; the manufacturer’s technical manual.</p> <p>5.F.01 PERFORM corrective maintenance on a UHF transceiver system IAW the CGPMS, Electronics Manual, COMDTINST M10550.25 (series), Equipment Tag-Out Procedures, COMDTINST 9077.1; Electronics Installation and Maintenance Book, General Maintenance, NAVSEA SE000-00-EIM-160; applicable EILSPs; the manufacturer’s technical manual</p> <p>5.F.02 PERFORM corrective maintenance on an Electronic Charting System (ECS) IAW the CGPMS, Electronics Manual, COMDTINST M10550.25 (series), Equipment Tag-Out Procedures, COMDTINST 9077.1; applicable EILSPs; the manufacturer's technical manual.</p> <p>5.F.03 PERFORM corrective maintenance on Surface Search Radar (SSR) system IAW the CGPMS, Electronics Manual, COMDTINST M10550.25 (series), Equipment Tag-Out Procedures, COMDTINST 9077.1 (series); applicable EILSPs; the manufacturer's technical manual.</p>		
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RATING: Electronics Technician	INIT	DATE
<p>G. GENERAL</p> <p>7.G.01 BRIEF personnel on the following ET educational opportunities IAW DCMS-81 Advanced Education Guide; United States Military Apprenticeship Program (USMAP), COMDTINST 1510.1; Performance, Training and Education Manual, COMDTINST M1500.10 (series); applicable messages; applicable websites.</p> <ul style="list-style-type: none"> • Advanced Computer Electronics Technology (ACET) Program • Advanced Avionics Integrated Weapons System Maintenance (AAIWSM) Program • Uniformed Services Military Apprenticeship Program (USMAP) <p>8.G.01 BRIEF personnel on C4IT Service Center model IAW the Mission Support Handbook.</p> <p>8.G.02 PROVIDE input to the ET Force Notes IAW the ET RFMC.</p> <p>~ End ~</p>		
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Appendix A: MAINTENANCE PHILOSOPHY CONSIDERATIONS

This is a "definition" of what is expected from each level of technician when applying the level of competence determination to successfully complete a performance based qualification.

ET3: Can configure from directions/job aid and perform basic operations on trained equipment. Can perform Planned Maintenance, minor troubleshooting, and minor corrective maintenance on trained systems as part of a team under direct supervision of a Journeyman or Master technician. Can locate and use standard hand tools, test equipment, and supplies.

ET2: In addition to the ET3 requirements, the ET2 should be able to perform installations, modifications, and removals of electronics equipment. Can document equipment capabilities and operations. Can procure standard supplies and parts. Can work independently on assigned tasks with limited supervision, provides one-on-one supervision of apprentice technicians and small teams. Can provide technical training on installed equipment.

ET1: All the above AND Supervision of teams of both apprentice and Journeyman technicians (multiple). Can develop maintenance scheduling, establish equipment requirements, and develop installation, modification, removal plans. Can initiate tasking and work independently without supervision. Can provide training on Coast Guard processes/procedures.

ETC: All the above AND Budget Development and Management, Training Management, Identifying Equipment Requirements, Liaison with outside entities on Technical Issues, Local Level Project Management, Contracting, Development of Equipment Changes.

ETCS/ETCM: All the above AND Supervision within remote AOR, Multi-Unit Budget Development, Multi-Unit Training Requirements, Multi-Unit Project Management, career mentoring to people in and out of rating, Liaison with local and Coast Guard program representative Senior Enlisted and Officers on technical and personnel issues.

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Appendix B: GLOSSARY

AUDIT	Physically sight and count a random selection of supplies or property and document the results; verify accuracy of documentation.
ALMIS	Asset Logistics Management Inventory System
BRIEF	To give information or final precise instruction.
C2CEN	Command & Control Engineering Center
C4IT Service Center	Command Control Communications Computers and Information Technology Service Center. Part of Deputy Commandant for Mission Support.
CGPMS	Coast Guard Planned Maintenance System.
CMPlus	Configuration Management Plus; equipment maintenance and supply system software.
CONDUCT	To direct, control, lead, or guide.
DEMONSTRATE	To show proficiency in accomplishing a task by simulation or actual performance without actual follow through due to safety or efficiency consequences. (Examples: Cardio-Pulmonary Resuscitation - CPR).
DEVELOP	Determine requirements from directives issued by competent authority, establish local requirements, and prepare a directive for compliance.
DISCHARGE	To dissipate life-threatening voltages using a shorting probe.
DOCUMENT	To furnish evidence, to provide factual or substantial support usually in written form.
ECR	Engineering Change Request.
EILSP	Electronic Integrated Logistics Support Plan
EVALUATE	Determine the status of an assembly, equipment, or system by comparing the results of tests, inspections, or other measurements to design specifications or established requirements.

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Appendix B: GLOSSARY (Cont'd)

GENERATE	To bring into existence; cause to be; produce.
IMPLEMENT	To give practical effect to, and ensure of, actual fulfillment by concrete measures.
INSPECT	Examine, test, measure, or evaluate people, spaces or equipment for installation, operation, and performance in accordance with established standards, specifications, drawings, technical manuals, directives, policies or other requirements.
INSTALL	Place a new or modified system or equipment and/or software in service in accordance with established procedures, standards, specifications, drawings, directives, and policies.
MAINTAIN	All activities that upkeep operational readiness of electronic equipment or systems. All activities that serve to increase the mean time between failure (MTBF) and/or decrease the total time inoperative (TTI) of electronic equipment or systems.
MEASURE	To determine the value (resistance, voltage etc...) by measurement or calculation.
NIMB	Navy Installation and Maintenance Book
OBTAIN	To acquire an item or information.
ORDALT	Ordnance alteration, a change to a weapons system equipment configuration.
PERFORM	To begin a task and carry through to completion in accordance with applicable instructions and regulations.
PREPARE	Plan, gather, and assemble resources.
PROCURE	To acquire a required item through an authorized process.
PROGRAM	To change equipment function or features via software.
PROVIDE	To supply or make available
RECORD	To document required information in a record book, database, or other application for later retrieval and review.

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Appendix B: GLOSSARY (Cont'd)

REPORT	To gather data and provide information in a defined format for an event.
RETURN	To restore to a former proper place.
REVIEW	To examine a document or process for accuracy in content and/or format and report errors, updates, or corrections to the author or controlling authority.
SCHEDULE	To develop a plan (based on time) for allocating resources, people and equipment, and establish a timeline to accomplish assigned tasks.
SMEF	Systems Management and Engineering Facilities.
SOP	Standard Operating Procedures.
SOVT	System Operation Verification Test
SUBMIT	To prepare a report or form following a defined process then forwarding to a prescribed authority.
TISCOM	Telecommunications and Information Systems Command.
TRACE	To physically identify and follow from one termination point to another.
TRAIN	Convey knowledge, demonstrate skills; and measure the transfer of those skills and knowledge using a defined lesson plan and methodology.
TROUBLESHOOT	To identify a failure at the lowest repairable level in a system or equipment following a logical step-wise process.
UPDATE	Change existing information or records to accurately align with correct or most recent data.
USMAP	United Services Military Apprenticeship Program
VERIFY	To determine the accuracy of recorded information by comparing to physical evidence.
WEATHERPROOF	Protect from external environmental elements, usually with dielectric tape and/or applied conformal coating.

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Appendix C: REFERENCE LIST**References cited in the qualifications.****User and Process Guides:**

ALMIS User's Guide
 CGPMS User's Guide
 CMPlus User's Guide
 DCMS-81 Advanced Education Guide
 FEDLOG User's Guide
 SFLC and C4ITSC TCTO Process Guide
 SFLC and C4ITSC Engineering Change Process Guide
 SFLC Maintenance/Publication Feedback (CG-22) Process Guide

Commandant Instructions:

COMDTINST 1510.1, United States Military Apprenticeship Program (USMAP)
 COMDTINST 4130.6 (series), Coast Guard Configuration Management Policy
 COMDTINST 6260.21 (series), Hazard Communication of Workplace Materials
 COMDTINST 9077.1 (series), Equipment Tag-Out Procedures
 COMDTINST M1500.10 (series), Performance, Training, and Education Manual
 COMDTINST M3501.3 (series), Casualty Reporting (CASREP) Procedures (Materiel)
 COMDTINST M3502.4 (series), Cutter Training and Qualification Manual
 COMDTINST M4000.2 (series), Coast Guard Logistics Handbook
 COMDTINST M4200.13 (series), Simplified Acquisitions Procedures Handbook
 COMDTINST M4400.19 (series), Supply Policy and Procedures Manual (SPPM)
 COMDTINST M8000.2 (series), Ordnance Manual
 COMDTINST M9000.6 (series), Naval Engineering Manual
 COMDTINST M10550.25 (series), Electronics Manual
 COMDTINST M11000.4 (series), Tower Manual
 COMDTINST M11000.11 (series), Civil Engineering Manual

DOD Publications:

DODINST 6055.1, Safety and Occupational Health Program
 DODINST 6055.11, Protecting Personnel from Electromagnetic Fields
 DODINST 6055.15, Laser Protection Program

MIL-STD Documents:

MIL-HDBK-232, Red/Black Engineering Installation Guidelines
 MIL-HDBK-419A, Grounding, Bonding, & Shielding for Electronic Equipment & Facilities, Vols. 1 & 2
 MIL-STD-188-124B, Grounding Bonding and Shielding
 MIL-STD-1310H, Shipboard Bonding, Grounding, and other Techniques for Electromagnetic Compatibility, Electromagnetic Pulse Mitigation, and Safety

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Appendix C: REFERENCE LIST (Cont'd)

Navy Publications:

Cryptographic Devices Limited Maintenance Manual (LMM)
 Cryptographic Operation Maintenance Manual (KAM)
 FXP 4 (Rev A), Naval Warfare Publication Mobility, Logistics, Fleet Support Operations,
 Noncombat Operations and Explosive Ordnance Disposal Exercises
 Naval Ships' Technical Manual, Chapter 400, Electronics
 Navy Instrument Calibration Procedures (NICP)
 NAVSEA OP 3565/NAVAIR 16-1-529, Electromagnetic Radiation Hazards(Hazards to
 Ordnance) Vol 2.
 NAVSEA SE000-00-EIM-100, Electronic Installation and Maintenance Book, General Handbook
 NAVSEA SE000-00-EIM-110, Navy Installation and Maintenance Book (NIMB), Installation
 Standards
 NAVSEA SE000-00-EIM-160, Electronic Installation and Maintenance Book, General
 Maintenance
 NAVSEA SE004-AK-TRS-10/2M, Standard Maintenance Practices Miniature/Micro-miniature
 (2M) Electronic Assembly Repair
 NWP 1-03-1, Operational Reports
 OPNAVINST 4790.4 (series), Ships Maintenance and Materiel Management (3M) Manual

Other sources (documents, websites, etc):

American Heart Association guidelines – CPR
 American Safety and Health Institute guidelines – CPR
 Applicable EILSPs
 Applicable Messages
 Applicable Standard Operating Procedures
 Applicable Websites
 Associated Technical Manuals
 ET RFMC
 Installation Documentation
 Manufacturer's Technical Manuals
 Manufacturer's Guidelines
 Mission Support Handbook
 SFLC Support Gram
 SOVT Documentation
 TISCOM SMEF Advisories

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Appendix D: Other Publications of Interest

Electronics Materiel Identification Manual, COMTINST M4410.5 (series)

One technical manual for each item of test equipment.

Two technical manuals for each assigned equipment.

National Electric Code, NFPA 70

National Lighting Code, NFPA 78

Shrader's Electronic Communications, McGraw Hill, ISBN: 0070571384

Electronics Installation and Maintenance Books (EIMB):

- General Handbook, SE000-00-EIM-100
- Installation Standards Handbook, 0967-LP-000-0110
- Electronics Circuits Handbook, 0967-000-0120
- Test Methods and Practices, 0967-LP-000-0130
- Reference Data, 0967-000-0140
- EMI Reduction Handbook, 0967-000-0150
- General Maintenance Handbook, SE000-00-EIM-160
- Communications, SE000-00-EIM-010
- Radar, SE000-00-EIM-020
- Sonar, SE000-00-EIM-030
- Test Equipment, SE000-00-EIM-040
- Countermeasures, SE000-00-EIM-07

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Appendix D: Other Publications of Interest (Cont'd)

Navy Electricity and Electronics Training Series (NEETS)

NEETS Modules are a non-resident training course that are an excellent study source for any SWE. You can use some NEETS Modules to help with some EPQs, but they are not official references.

Module	Title
1.	Matter, Energy and Direct Current
2.	Alternating Current and Transformers
3.	Circuit Protection, Control and Measurement
4.	Electrical Conductors, Wiring Techniques and Schematic Reading
5.	Generators and Motors
6.	Electronic Emission, Tubes and Power Supplies
7.	Solid-State Devices and Power Supplies
8.	Amplifiers
9.	Wave-Generation and Wave-Shaping Circuits
10.	Wave Propagation, Transmission Lines and Antennas
11.	Microwave Principles
12.	Modulation Principles
13.	Number Systems and Logic Circuits
14.	Microelectronics
15.	Synchros, Servos and Gyros
16.	Test Equipment
17.	Radio Frequency Communications Principles
18.	Radar Principles
19.	Technician's Handbook
20.	Glossary and Index
21.	Test Methods and Practices
22.	Introduction to Digital Computers
23.	Magnetic Recording
24.	Introduction to Fiber Optic

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