

ENG & UTIL T&R MANUAL

CHAPTER 6

MOS 1142 INDIVIDUAL EVENTS

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CHAPTER 6

MOS 1142 INDIVIDUAL EVENTS

6000. PURPOSE. This chapter includes all individual training events for the Engineer Equipment Electrical Systems Technician. An individual event is an event that a trained Engineer Equipment Electrical Systems Technician would accomplish in the execution of Mission Essential Tasks (METs). These events are linked to a Service-Level Mission Essential Task. This linkage tailor's individual and collective training for the selected MET. Each event is composed of an individual event title, condition, standard, performance steps, support requirements, and references. Accomplishment and proficiency level required is determined by the event standard.

6001. ADMINISTRATIVE NOTES

1. Individual T&R events are coded for ease of reference. Each event has a 4-4-4 character identifier. The first four characters represent the MOS (1142).

2. The second four characters represent the functional or duty area. For example:

ADMN - Administration
MANT - Maintenance
XENG - General Engineering

See Appendix A for a complete list of functional areas.

3. The first of the last four characters represent the level (1000 or 2000) and the last three characters the sequence (1001, 2101) of the event. The Engineer Equipment Electrical Systems Technician individual training events are separated into two levels:

1000 - Core Skills
2000 - Core Plus Skills

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6003. 1000-LEVEL EVENTS

1142-ADMN-1001: Conduct an Operational Risk Assessment (ORA)

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 6 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a task/mission, a Risk Management Worksheet, and references.

STANDARD: To ensure safety mishaps are mitigated through the use of risk management controls per the references.

PERFORMANCE STEPS:

1. Review task/mission.
2. Review references.
3. Identify hazards, recording them on Risk Management Worksheet.
4. Assess severity and probability of hazards to determine risk levels.
5. Develop risk control measures.
6. Make risk decisions and/or forward Risk Management Worksheet to supervisor for decision/approval.
7. Implement controls.

RELATED EVENTS:

1141-ADMN-1001 1171-ADMN-1001 1161-ADMN-1001

REFERENCES:

1. MCO 3500.27B Operational Risk Management (ORM) (MAY 2004)
2. MCRP 5-12.1C Risk Management (Feb 01)

SUPPORT REQUIREMENTS:

MATERIAL: Risk Management Worksheet.

1142-ADMN-1002: Control (Lockout/Tagout) hazardous energy

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 6 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, equipment manuals, PPE, Lockout/Tagout devices, forms, and references.

STANDARD: To ensure safety procedures are performed to prevent electrical mishaps per the references.

PERFORMANCE STEPS:

1. Review references.
2. Locate all energy isolating devices and hazardous energy sources (NOTE: There may be more than one).
3. Obtain required number of Lockout/Tagout devices from program coordinator.
4. Notify all effected personnel and supervisors.
5. Shut down equipment/turn off circuit.
6. Dissipate or restrain any stored energy.
7. Apply Lockout/Tagout devices.
8. Verify energy is isolated/dissipated (test circuit).
9. Effect required service, maintenance, repairs or modifications to equipment/circuit.
10. Remove Lockout/Tagout devices.
11. Restore equipment/circuit to normal operation.
12. Return Lockout/Tagout devices to program coordinator.

RELATED EVENTS:

1141-ADMN-1002 1171-ADMN-1002 1161-ADMN-1002

REFERENCES:

1. NAVMC DIR 5100.8 Marine Corps Occupational Safety and Health (OSH) Program Manual (May 06)
2. UNIT SOP Unit's Standing Operating Procedures
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Personal Protective Equipment (PPE).

MATERIAL:

- Lockout/Tagout devices
- NAVMC 11403 (Lockout/Tagout Checklist)

UNITS/PERSONNEL: Lockout/Tagout Program Coordinator.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: NAVMC Dir 5100.8, Chapter 12, provides detailed information for this event.

1142-ADMN-1003: Recover an electric shock victim

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given an electrical mishap involving a potential casualty.

STANDARD: To ensure the performance of proper safety procedures to prevent further injury to personnel.

PERFORMANCE STEPS:

1. Evaluate situation.
2. Send for help.
3. Provide for personal protection.
4. Isolate victim from electrical source.
5. Evaluate victim.
6. Start artificial resuscitation (if necessary).
7. Remain with victim until medical help arrives.
8. Report incident.

RELATED EVENTS:

1120-ADMN-2003	1141-ADMN-1003	1171-ADMN-1003
1169-ADMN-2003	1161-ADMN-1003	

REFERENCES:

1. FM 5-424 Theater of Operations Electrical Systems (Jun 97)
2. MCRP 3-02G First Aid (Dec 02)
3. TM 2000-15/4 Power System Reference Manual (Jul 68)
4. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)

1142-ADMN-1004: Respond to a hazardous materials spill

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a hazardous material mishap involving potential environmental damage.

STANDARD: To ensure the performance of proper containment procedures to prevent further environmental damage.

PERFORMANCE STEPS:

1. Evacuate immediate area (if necessary).
2. Contain spill.
3. Report spill.
4. Remove uncontaminated material.
5. Dispose of hazardous material.

RELATED EVENTS:

1120-ADMN-2004	1161-ADMN-1004	1141-ADMN-1004
1171-ADMN-1004	1169-ADMN-2004	

REFERENCES:

1. MCO 4450.12A Storage and Handling of Hazardous Materials (Jan 99)
2. MCO P5090.2A Environmental Compliance and Protection Manual (Jul 98)

3. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)
4. UNIT SOP Unit's Standing Operating Procedures

1142-ADMN-1005: Administer first aid for chemical ingestion/contact

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a chemical mishap involving a potential casualty, Material Safety Data Sheets (MSDS).

STANDARD: To ensure the performance of proper safety procedures to prevent further injury to personnel.

PERFORMANCE STEPS:

1. Protect yourself and other personnel.
2. Send for help.
3. Review Material Safety Data Sheet (MSDS).
4. Provide for personal protection (PPE) (if required).
5. Give first aid.
6. Remain with victim until medical help arrives.
7. Report incident.

RELATED EVENTS:

1120-ADMN-2005	1161-ADMN-1005	1141-ADMN-1005
1171-ADMN-1005	1169-ADMN-2005	

REFERENCES:

1. MCRP 3-02G First Aid (Dec 02)

SUPPORT REQUIREMENTS:

EQUIPMENT: Personal Protective Equipment (PPE).

MATERIAL: Material Safety Data Sheet (MSDS) file.

1142-ADMN-1007: Conduct an SL-3 Components List/Basic Issue Items (BII) inventory

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 6 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment and references.

STANDARD: To ensure accountability of all equipment components per the SL-3/BII list and the references.

PERFORMANCE STEPS:

1. Review references.
2. Obtain Components List (SL-3 or TM listing Basic Issue Items [BII]) for item.
3. Identify each component using the SL-3/BII.
4. Identify missing components.
5. Identify unserviceable components.
6. Document inventory results.
7. Report any inventory discrepancies and unserviceable components.

PREREQUISITE EVENTS: 1142-ADMN-1006

RELATED EVENTS:

1161-ADMN-1007 1141-ADMN-1007 1171-ADMN-1007

REFERENCES:

1. MCO P4400.150E Consumer-Level Supply Policy Manual (Jun 99)
2. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
3. UNIT SOP Unit's Standing Operating Procedures
4. Appropriate Technical Manuals

1142-ADMN-1008: Conduct a Limited Technical Inspection (LTI)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment requiring inspection and the equipment's records, forms, tools, and references.

STANDARD: To document missing and unserviceable equipment components per the references.

PERFORMANCE STEPS:

1. Review references.
2. Lockout/Tagout equipment (if required).
3. Provide for personal protection (PPE) (if required).
4. Identify components.
5. Verify component function/serviceability.
6. Verify authorized modifications.
7. Record discrepancies (if any).
8. Attach NAVMC 1018 to equipment (if required).
9. Complete the NAVMC 10560.

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-ADMN-1007 1142-ADMN-1006
1142-MANT-1101

RELATED EVENTS:

1161-ADMN-1008 1141-ADMN-1008 1171-ADMN-1008

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. MCRP 4-11.4A Battle Damage Assessment and Repair
3. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
4. TM 9-6115-624-BD Battlefield Damage Assessment and Repair for Generators (Sep 90)
5. UNIT SOP Unit's Standing Operating Procedures
6. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter

MATERIAL:

- NAVMC 1018 (Inspection/Repair Tag)
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection of Engineer Equipment [LTI])

1142-ADMN-1009: Document equipment operation history

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, equipment's records, forms, and references.

STANDARD: To ensure equipment hours of operation are correctly documented per the references.

PERFORMANCE STEPS:

1. Review references.
2. Validate equipment descriptive data on NAVMC 696D.
3. Ensure equipment descriptive data on NAVMC 10524 is correct.
4. Record hours/days equipment was operated (on NAVMC 10524).

RELATED EVENTS:

1141-ADMN-1009 1171-ADMN-1009 1161-ADMN-1009

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided forms and references.

STANDARD: To ensure a completed Equipment Repair Order (NAVMC 10245) is accurate per equipment indicated, and the references.

PERFORMANCE STEPS:

1. Review references.
2. Fill out equipment descriptive data on NAVMC 10245.
3. Annotate NAVMC 10245 with service/repair actions taken.
4. Submit NAVMC 10245 for input.

RELATED EVENTS:

1142-ADMN-1008	1142-ADMN-1009	1142-ADMN-1010
1142-ADMN-1006	1161-ADMN-1011	1171-ADMN-1011
1141-ADMN-1011		

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL: NAVMC 10245 (Equipment Repair Order [ERO])

1142-ADMN-1012: Initiate a Recommended Change to Technical Publications/Logistics-Maintenance Data Coding (NAVMC 10772)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an identified error/deficiency to a technical publication and references.

STANDARD: To ensure corrections/improvements to technical publication(s) is submitted per the references.

PERFORMANCE STEPS:

1. Review references.
2. Determine if error/deficiency requires use of Part I or Part II of NAVMC 10772.
3. Fill in all required blocks of NAVMC 10772.
4. Forward completed NAVMC 10772 per unit's SOP.

PREREQUISITE EVENTS: 1142-ADMN-1006

RELATED EVENTS:

1141-ADMN-1012 1171-ADMN-1012 1161-ADMN-1012

REFERENCES:

1. MCO P5215.17C The Marine Corps Technical Publications System (Jun 96)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UNIT SOP Unit's Standing Operating Procedures

SUPPORT REQUIREMENTS:

MATERIAL: NAVMC 10772 (Recommended Change to Technical Publications/Logistics-Maintenance Data Coding)

OTHER SUPPORT REQUIREMENTS: Internet access, with a CAC card, may be required in order to complete this event per Unit's SOP. The website used will be <https://pubs.logcom.usmc.mil>.

1142-MANT-1101: Operate a multimeter

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 6 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment having an electrical circuit(s), multimeter, and references.

STANDARD: To ensure electrical circuit outputs are within standards.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Determine correct setting (AC, DC, resistance or current).
3. Test circuit (voltage, resistance, current).
4. Record measurements/readings.
5. Analyze measurements/readings.

RELATED EVENTS:

1142-ADMN-1002 1141-MANT-1101 1171-MANT-2101
1161-MANT-1101 1142-ADMN-1001

REFERENCES:

1. IM 8024B Manufacturer's Instruction Manual for Fluke Model 8024B Digital Multimeter
2. TC 9-60 COMMUNICATIONS-ELECTRONICS FUNDAMENTALS, BASIC PRINCIPLES OF ALTERNATING CURRENT AND DIRECT CURRENT
3. TC 9-62 Communications-Electronics Fundamentals, Solid State Devices and Solid State Power Supplies and Amplifiers
4. TM 2000-15/4 Power System Reference Manual (Jul 68)
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Multimeter
 - Equipment with an electrical circuit
-

1142-MANT-1106: Operate a Semiconductor Test Device

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided solid state device(s), equipment and references.

STANDARD: To ensure serviceability of solid state device(s) is determined per the references.

PERFORMANCE STEPS:

1. Review references.
2. Determine correct settings for test device.
3. Test solid state device.
4. Record measurements/readings.
5. Analyze measurements/readings.

RELATED EVENTS: 1142-MANT-1101

REFERENCES:

1. TC 9-60 COMMUNICATIONS-ELECTRONICS FUNDAMENTALS, BASIC PRINCIPLES OF ALTERNATING CURRENT AND DIRECT CURRENT
2. TC 9-62 Communications-Electronics Fundamentals, Solid State Devices and Solid State Power Supplies and Amplifiers
3. TM 2000-15/4 Power System Reference Manual (Jul 68)
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Test Set, Semiconductor Device [H7020]
 - Multimeter
 - Solid state devices
-

1142-MANT-1108: Splice a wire connection on equipment

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, material and references.

STANDARD: To ensure electrical continuity is established with tensile strength required by technical manuals related to the application.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review references.
3. Determine type of splice required.
4. Don PPE.
5. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
6. Strip wire(s).
7. Clean component(s) and wire(s).
8. Construct the splice.
9. Test splice.
10. Insulate bare wires.

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-MANT-1101 1142-ADMN-1006

RELATED EVENTS:

1161-MANT-1108 1142-MANT-1109

REFERENCES:

1. TC 9-60 COMMUNICATIONS-ELECTRONICS FUNDAMENTALS, BASIC PRINCIPLES OF ALTERNATING CURRENT AND DIRECT CURRENT
2. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
3. TM 2000-15/4 Power System Reference Manual (Jul 68)
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Set, Electrical Equipment Repair [B2365]
- Multimeter
- Equipment with faulty wire connection(s)

MATERIAL:

- Wire
- Connector(s) (if required)
- Electrical tape

1142-MANT-1109: Solder an electrical connection

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, material and references.

STANDARD: To ensure electrical continuity is established with tensile strength required by the references related to the application.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify VAPOR HAZARD(S).
3. Review references.
4. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
5. Clean component(s) and wire(s).
6. Don PPE.
7. Position component(s) and wire(s).
8. Apply flux (if needed).
9. Heat connection.
10. Apply solder.
11. Allow connection to cool.
12. Dispose of excess used solder (it is hazardous material).
13. Test connection.
14. Insulate bare wires.

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-MANT-1101 1142-ADMN-1006

RELATED EVENTS:

1142-MANT-1108 1142-ADMN-1004 1161-MANT-1109

REFERENCES:

1. TB SIG 222 Solder and Soldering
2. TC 9-60 COMMUNICATIONS-ELECTRONICS FUNDAMENTALS, BASIC PRINCIPLES OF ALTERNATING CURRENT AND DIRECT CURRENT
3. TC 9-62 Communications-Electronics Fundamentals, Solid State Devices and Solid State Power Supplies and Amplifiers
4. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
5. TM 2000-15/4 Power System Reference Manual (Jul 68)
6. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Shop Equipment, Shop Maintenance Vehicle [C7033]
- Multimeter
- Equipment with faulty wire connection(s)

MATERIAL:

- Wire
- Connector(s) (if required)
- Flux (if needed)
- Solder
- Electrical tape

OTHER SUPPORT REQUIREMENTS: Ventilation is required if this event is performed indoors.

1142-MANT-1142: Load test generator set(s)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, forms and references.

STANDARD: To ensure electrical power generation equipment performs to specifications per the references.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FIRE/EXPLOSION HAZARD(S).
3. Identify CARBON MONOXIDE HAZARD(S).
4. Review references, including generator technical manuals.
5. Don PPE.
6. Ground equipment.
7. Connect load bank to generator(s) (using over current protection).
8. Start generator(s), contacting load.
9. Perform before operation checks on load bank.
10. Apply load to generator(s).
11. Perform during operation checks on load bank.
12. Record readings from load bank.
13. Analyze data collected during test.
14. Disconnect load from generator(s).
15. Perform after operation checks on load bank.
16. Shut down load bank.
17. Shut down generator(s).
18. Disconnect load bank.
19. Record test results.

PREREQUISITE EVENTS: 1142-ADMN-1006

RELATED EVENTS:

1142-ADMN-1008

1141-MANT-1142

1142-ADMN-1011

1142-ADMN-1009

REFERENCES:

1. TM 07500C-OI Operation/Maintenance Manual with Repair Parts List for Load Bank, Electrical, 100kW, Model LSH100D42423
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Kit, Multi-Capable Maintainer [C7036]
- 100kW Electrical Load Bank [B0579]
- Generator(s) to be load tested

MATERIAL:

- NAVMC 10524 (Consolidated Engineer Equipment Operation Log and Service Record)
- Fuel

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Graduates of the Basic Engineer Equipment Electrical Systems Technician Course (CID: M03UAA2) are licensed operators of the 100kW Electrical Load Bank [B0579].

SPECIAL PERSONNEL CERTS: Only Electricians (MOS 1141) and Engineer Equipment Electrical Systems Technicians (MOS 1142) will be licensed to operate a 100kW Electrical Load Bank [B0579].

1142-MANT-1195: Parallel tactical generator sets

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided multiple generator sets, equipment, tools, paralleling cable, conductors, over current protection and references.

STANDARD: To ensure technician can properly synchronize power equipment in order to share electrical load per the references.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FIRE/EXPLOSION HAZARD(S).
3. Identify CARBON MONOXIDE HAZARD(S).
4. Review references.
5. Reassess operational risk.
6. Don PPE.
7. Ensure generators are grounded.
8. Connect generators with paralleling cable and conductors through over current protection.
9. Ensure all load/voltage requirements are observed.
10. Synchronize generators.
11. Contact load.
12. Make necessary adjustments.
13. Perform during operation checks/services.

PREREQUISITE EVENTS:

1142-MANT-1142 1142-ADMN-1001

RELATED EVENTS: 1141-XENG-1795

REFERENCES:

1. FM 5-424 Theater of Operations Electrical Systems (Jun 97)
2. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Tactical generator sets

MATERIAL:

- Paralleling cable
- Conductors
- Over current protection (MEPDIS/MEPDIS-R preferred if available)
- Fuel

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS:

- Graduates of the Basic Engineer Equipment Electrical Systems Technician Course (CID: M03UAA2) are trained and qualified to parallel generators.
- Only trained/qualified Marines (MOS 1141 & 1142) will parallel generators.

SPECIAL PERSONNEL CERTS: Due to the hazards involved, to both personnel and equipment, tactical generators should only be placed in parallel by licensed (MOS 1141) Electricians or qualified (MOS 1142) Engineer Equipment Electrical Systems Technicians.

1142-MANT-1242: Perform Preventive Maintenance Checks and Services (PMCS) on a 100kW Electrical Load Bank

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, parts for scheduled services, forms and references.

STANDARD: To ensure electrical power equipment is maintained in an operational condition per TM 07500C-OI or TM 07500B-14.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review equipment technical manuals.
3. Review ERO.
4. Don PPE.
5. Ensure equipment is grounded.
6. Contain (Lockout/Tagout) hazardous energy.
7. Inspect equipment.
8. Service equipment.
9. Document maintenance performed and deficiencies/discrepancies noted.

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-MANT-1142 1142-ADMN-1006

RELATED EVENTS:

1142-ADMN-1007 1142-ADMN-1011 1142-ADMN-1010
1142-ADMN-1008

REFERENCES:

1. SL-4-07500B Repair Parts List for Dummy Load, Generator, Electrical, Model DE1-0001, 100kw (Apr 94), w/Ch 1 (Feb 95)
2. TM 07500B-14 Operation and Maintenance Instructions for Dummy Load, Electrical Model DE1-0001, 100kw (Apr 94), w/ch 1 (Feb 95)
3. TM 07500C-OI Operation/Maintenance Manual with Repair Parts List for Load Bank, Electrical, 100kW, Model LSH100D42423
4. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Kit, Multi-Capable Maintainer [C7036]
- 100kW Load Bank, Electrical [B0579]
- Generator set

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])
- Parts for scheduled services

1142-MANT-1342: Diagnose a 100kW Electrical Load Bank malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, the inoperable equipment, tools, forms and references.

STANDARD: To ensure electrical power equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review LTI.
3. Review equipment technical manuals/wiring diagrams/schematics.
4. Don PPE.
5. Ensure equipment is grounded.
6. Check switches/gauges for correct settings.
7. Isolate faulty circuit(s).
8. Trace current/voltage paths in circuits.
9. Isolate faulty component(s).
10. Determine if component fault was caused by a defect elsewhere (repeating steps 7, 8, and/or 9 as required).
11. Determine echelon(s) of maintenance.
12. Document findings (complete LTI/initiate ERO).
13. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1006 1142-MANT-1142 1142-MANT-1101

RELATED EVENTS:

1142-ADMN-1008 1142-MANT-1242 1142-ADMN-1011
1142-ADMN-1010

REFERENCES:

1. TM 07500C-OI Operation/Maintenance Manual with Repair Parts List for Load Bank, Electrical, 100kW, Model LSH100D42423
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Faulty 100kW Load Bank, Electrical [B0579] or components
- Generator set

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Graduates of the Basic Engineer Equipment Electrical Systems Technician Course (CID: M03UAA2) are licensed operators of the 100kW Electrical Load Bank [B0579].

1142-MANT-1347: Diagnose a floodlight set malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, the inoperable equipment, tools, forms and references.

STANDARD: To ensure electrical power equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FIRE/EXPLOSION HAZARD(S).
3. Identify CARBON MONOXIDE HAZARD(S).
4. Review LTI.
5. Review equipment technical manuals/wiring diagrams/schematics.
6. Don PPE.
7. Ensure equipment is grounded.
8. Check switches/gauges for correct settings.
9. Isolate faulty circuit(s).
10. Trace current/voltage paths in circuits.
11. Isolate faulty component(s).
12. Determine if component fault was caused by a defect elsewhere (repeating steps 9, 10, and/or 11 as required).
13. Determine echelon(s) of maintenance.
14. Document findings (complete LTI/initiate ERO).
15. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-MANT-1101 1142-ADMN-1006

RELATED EVENTS:

1142-ADMN-1008 1141-MANT-1247 1142-ADMN-1011
1142-ADMN-1010

REFERENCES:

1. MI 11120A-OI/1 Installation of Safety Modification Kit for the USMC Floodlight Set (FLS) (Model MLT5060MIT)
2. MI 11120A-OI/2 Modifications of the USMC Floodlight Set, Model MLT5060MIT
3. SI 11120A-OI/1 Warranty Procedures for B0640 Floodlight Set
4. TM 11120A-OI Operation/Maintenance Manual with Repair Parts List for Floodlight Set (Model MLT5060MIT)
5. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
6. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)

- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Faulty Floodlight Set [B0640] or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Graduates of the Basic Engineer Equipment Electrical Systems Technician Course (CID: M03UAA2) ARE NOT licensed as floodlight set operators.

1142-MANT-1351: Diagnose a generator set malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, the inoperable equipment, tools, forms and references.

STANDARD: To ensure electrical power equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FIRE/EXPLOSION HAZARD(S).
3. Identify CARBON MONOXIDE HAZARD(S).
4. Review LTI.
5. Review equipment technical manuals/wiring diagrams/schematics.
6. Don PPE.
7. Ensure equipment is grounded.
8. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout) (if required).
9. Check switches/gauges for correct settings.
10. Isolate faulty circuit(s).
11. Trace current/voltage paths in circuits.
12. Isolate faulty component(s).
13. Determine if component fault was caused by a defect elsewhere (repeating steps 10, 11, and/or 12 as required).
14. Determine echelon(s) of maintenance.
15. Document findings (complete LTI/initiate ERO).
16. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1006 1142-MANT-1106 1142-MANT-1101
1142-ADMN-1002

RELATED EVENTS:

1142-ADMN-1008 1142-ADMN-1010 1142-ADMN-1011
1141-MANT-1251 1141-MANT-1252 1141-MANT-1265
1141-MANT-1255 1141-MANT-1256 1141-MANT-1257
1141-MANT-1262 1141-MANT-1263 1141-MANT-1253

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Anti-Static Wrist Strap
- Faulty generator set or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Graduates of the Basic Engineer Equipment Electrical Systems Technician Course (CID: M03UAA2) ARE NOT licensed as generator set operators.

1142-MANT-1382: Diagnose a tactical water purification equipment electrical system malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, the inoperable equipment, tools, forms and references.

STANDARD: To ensure electrical power equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify CHEMICAL HAZARD(S).
3. Identify FIRE/EXPLOSION HAZARD(S).
4. Identify CARBON MONOXIDE HAZARD(S).
5. Identify GRAYWATER HAZARD(S).
6. Review LTI.
7. Review equipment technical manuals/wiring diagrams/schematics.
8. Don PPE.
9. Ensure equipment is grounded.
10. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout) (if required).
11. Check switches/gauges for correct settings.
12. Isolate faulty circuit(s).
13. Trace current/voltage paths in circuits.
14. Isolate faulty component(s).
15. Determine if component fault was caused by a defect elsewhere (repeating steps 12, 13, and/or 14 as required).
16. Determine echelon(s) of maintenance.
17. Document findings (complete LTI/initiate ERO).
18. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1006	1142-ADMN-1002	1142-MANT-1101
1142-MANT-1106		

RELATED EVENTS:

1142-ADMN-1008	1142-ADMN-1010	1142-ADMN-1011
1171-MANT-1382	1171-MANT-1332	1171-MANT-1379
1171-MANT-1331		

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Faulty tactical water purification/storage/distribution equipment or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

UNITS/PERSONNEL: MOS 1171 (Water Support Technician) to facilitate troubleshooting process.

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required.

1142-MANT-1392: Diagnose an electric motor malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, the inoperable equipment, tools, forms and references.

STANDARD: To ensure electrical power equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review LTI.
3. Review equipment technical manuals/wiring diagrams/schematics.
4. Don PPE.
5. Ensure equipment is grounded.
6. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
7. Check switches for correct settings.
8. Determine type of electric motor (single-phase/three-phase/split phase/capacitor start).
9. Isolate faulty circuit(s).
10. Trace current/voltage paths in circuits.
11. Isolate faulty component(s).
12. Determine if component fault was caused by a defect elsewhere (repeating steps 9, 10, and/or 11 as required).
13. Determine echelon(s) of maintenance.
14. Document findings (complete LTI/initiate ERO).
15. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-MANT-1101 1142-ADMN-1006

RELATED EVENTS:

1142-ADMN-1008 1142-ADMN-1010 1142-ADMN-1011
1142-MANT-1493 1141-XENG-1693 1141-XENG-2502
1141-XENG-1692

REFERENCES:

1. TM 2000-15/4 Power System Reference Manual (Jul 68)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Equipment with faulty electric motor or the faulty electric motor

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

UNITS/PERSONNEL: Operator of equipment with faulty electric motor may be required to facilitate troubleshooting process.

OTHER SUPPORT REQUIREMENTS: Electrical power source will be required.

1142-MANT-1451: Repair a tactical generator set electrical system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETTS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with equipment technical manual(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review ERO.
3. Inventory parts in ERO layette.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Remove faulty part(s).
9. Prepare area(s) for new part(s).
10. Attach new part(s), making necessary adjustments.
11. Determine if electrical system fault was caused by a defect elsewhere.
12. Test repairs.
13. Document repairs.

PREREQUISITE EVENTS:

1142-MANT-1101

1142-MANT-1108

1142-MANT-1142

1142-MANT-1351

1142-ADMN-1002

1142-MANT-1109

RELATED EVENTS:

1141-MANT-1142	1142-ADMN-1006	1142-ADMN-1008
1142-ADMN-1011	1142-MANT-1195	1142-MANT-1467
1142-MANT-1468	1142-MANT-1469	1142-MANT-1466

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- 100kW Electrical Load Bank [B0579]
- Anti-Static Wrist Strap
- Degraded/deadlined generator set

MATERIAL:

- Repair parts
- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

1142-MANT-1466: Repair a generator set air intake/exhaust system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with equipment technical manual(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review ERO.
3. Inventory parts in ERO layette.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).

8. Remove faulty part(s).
9. Prepare area(s) for new part(s).
10. Attach new part(s), making necessary adjustments.
11. Determine if air intake/exhaust system fault was caused by a defect elsewhere.
12. Test repairs.
13. Document repairs.

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-MANT-1351

RELATED EVENTS:

1142-ADMN-1006	1142-ADMN-1008	1142-ADMN-1011
1142-MANT-1469	1142-MANT-1451	1142-MANT-1467
1142-MANT-1468	1142-MANT-1142	

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- 100kW Electrical Load Bank [B0579]
- Degraded/deadlined generator set

MATERIAL:

- Repair parts
- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

1142-MANT-1467: Repair a generator set cooling system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with equipment technical manual(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review ERO.
3. Inventory parts in ERO layette.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Remove faulty part(s).
9. Prepare area(s) for new part(s).
10. Attach new part(s), making necessary adjustments.
11. Determine if cooling system fault was caused by a defect elsewhere.
12. Test repairs.
13. Document repairs.

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-MANT-1351

RELATED EVENTS:

1142-ADMN-1006	1142-ADMN-1008	1142-ADMN-1011
1142-MANT-1469	1142-MANT-1451	1142-MANT-1466
1142-MANT-1468	1142-MANT-1142	

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- 100kW Electrical Load Bank [B0579]
- Degraded/deadlined generator set

MATERIAL:

- Repair parts
- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

1142-MANT-1468: Repair a generator set fuel system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with equipment technical manual(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review ERO.
3. Inventory parts in ERO layette.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Remove faulty part(s).
9. Prepare area(s) for new part(s).
10. Attach new part(s), making necessary adjustments.
11. Determine if fuel system fault was caused by a defect elsewhere.
12. Test repairs.
13. Document repairs.

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-MANT-1351

RELATED EVENTS:

1142-ADMN-1006	1142-ADMN-1008	1142-ADMN-1011
1142-MANT-1469	1142-MANT-1451	1142-MANT-1466
1142-MANT-1467	1142-MANT-1142	

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- 100kW Electrical Load Bank [B0579]
- Degraded/deadlined generator set

MATERIAL:

- Repair parts
 - NAVMC 10245 (Equipment Repair Order [ERO])
 - NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
 - NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])
-

1142-MANT-1469: Repair a generator set lubrication system

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with equipment technical manual(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review ERO.
3. Inventory parts in ERO layette.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Remove faulty part(s).
9. Prepare area(s) for new part(s).
10. Attach new part(s), making necessary adjustments.
11. Determine if lubrication system fault was caused by a defect elsewhere.
12. Test repairs.
13. Document repairs.

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-MANT-1351

RELATED EVENTS:

1142-ADMN-1008	1142-ADMN-1011	1142-MANT-1142
1142-MANT-1468	1142-MANT-1451	1142-MANT-1466
1142-MANT-1467	1142-ADMN-1006	

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- 100kW Electrical Load Bank [B0579]
- Degraded/deadlined generator set

MATERIAL:

- Repair parts
 - NAVMC 10245 (Equipment Repair Order [ERO])
 - NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
 - NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])
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1142-MANT-1493: Connect electric motor control circuits

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment containing an electric motor, electrical power source, tools, parts and references.

STANDARD: To ensure positive control of electric motor is established in accordance with equipment manual(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review references.
3. Don PPE.
4. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
5. Identify motor type (single-phase, three-phase, split phase, capacitor start).
6. Determine motor voltage requirements.
7. Determine type of motor control required.
8. Wire motor control to electric motor circuit(s).
9. Inspect wiring.
10. Ensure motor is grounded/bonded.
11. Test motor operation.

PREREQUISITE EVENTS:

1142-ADMN-1002	1142-ADMN-1006	1142-MANT-1101
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RELATED EVENTS:

1142-ADMN-1011	1142-MANT-1108	1142-MANT-1109
1141-XENG-2502	1141-XENG-1692	1141-XENG-1693
1142-ADMN-1008	1142-MANT-1392	

REFERENCES:

1. TC 9-60 COMMUNICATIONS-ELECTRONICS FUNDAMENTALS, BASIC PRINCIPLES OF ALTERNATING CURRENT AND DIRECT CURRENT
2. TC 9-62 Communications-Electronics Fundamentals, Solid State Devices and Solid State Power Supplies and Amplifiers
3. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
4. TM 2000-15/4 Power System Reference Manual (Jul 68)

5. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
6. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Equipment with an electric motor
- Electric motor controls

MATERIAL:

- Parts
- Wire
- Connector(s)

OTHER SUPPORT REQUIREMENTS: Electrical power source.

6004. 2000-LEVEL EVENTS

1142-ADMN-2021: Apply safety programs

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided resources and references.

STANDARD: To ensure applicable safety measures are established per the references.

PERFORMANCE STEPS:

1. Review references.
2. Identify equipment safety requirements.
3. Identify personnel safety requirements.
4. Conduct Operational Risk Assessments.
5. Implement safety procedures.
6. Conduct safety awareness training.
7. Evaluate safety programs.
8. Enforce safety regulations.
9. Provide input for/submit required reports.

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-ADMN-1001

RELATED EVENTS:

1141-ADMN-2021 1171-ADMN-2021 1161-ADMN-2021

REFERENCES:

1. MCO 3500.27B Operational Risk Management (ORM) (MAY 2004)
 2. MCO 5100.19E Marine Corps Traffic Safety Program (Drive safe) (Dec 00)
 3. MCO 5100.29A Marine Corps Safety Program (Jul 04)
 4. MCO 5100.30A Marine Corps Off-Duty and Recreation Safety Program (Oct 01)
 5. MCO 5100.34 Deadline Safety of Use Message Instructions to Suspend Operations of Marine Corps Ground Equipment and Weapons Systems and Safety of Use Alerts (Jan 07)
 6. MCO 5100.8 Marine Corps Occupational Safety and Health (OSH) Policy Order (May 06)
 7. MCO P5102.1B Navy & Marine Corps Mishap and Safety Investigation, Reporting, and Record Keeping Manual (Jan 05)
 8. NAVMC DIR 5100.8 Marine Corps Occupational Safety and Health (OSH) Program Manual (May 06)
 9. UNIT SOP Unit's Standing Operating Procedures
 10. Appropriate Technical Manuals
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1142-ADMN-2022: Apply environmental regulations

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided environmental guidelines, and references.

STANDARD: To ensure adherence to policies in accordance to references.

PERFORMANCE STEPS:

1. Review references.
2. Verify section's compliance with applicable environmental regulations and restrictions.
3. Monitor platoon/section hazardous material disposal program.
4. Maintain hazardous materials storage areas.
5. Maintain Material Safety Data Sheets (MSDS).
6. Report any situations that require reporting.

PREREQUISITE EVENTS: 1142-ADMN-1004

RELATED EVENTS:

1171-ADMN-2022

1141-ADMN-2022

1161-ADMN-2022

REFERENCES:

1. MCO 4450.12A Storage and Handling of Hazardous Materials (Jan 99)
2. MCO P5090.2A Environmental Compliance and Protection Manual (Jul 98)
3. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)
4. OPNAVINST 5090.1C Environmental Readiness Program Manual (Oct 07)
5. UNIT SOP Unit's Standing Operating Procedures

1142-ADMN-2023: Conduct Military Occupational Specialty (MOS) training

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided training resources, records, and references.

STANDARD: To ensure MOS proficiency is maintained per the references.

PERFORMANCE STEPS:

1. Review references.
2. Identify individual training requirements (review T&R Manual and MOS Roadmaps).
3. Identify unit training requirements (review unit METL/Commander's intent).

4. Determine on the job and sustainment training requirements by grade and MOS.
5. Develop lesson plans.
6. Develop training methods/aids/materials (as required).
7. Conduct training.
8. Document training.
9. Encourage use of self-directed study and assist in providing resources.

RELATED EVENTS:

1141-ADMN-2023 1171-ADMN-2023 1161-ADMN-2023

REFERENCES:

1. MCO 1553.3A Unit Training Management (UTM) (Jan 04)
2. MCO 1553.4B Professional Military Education (PME) (Jan 08)
3. MCO 3500.26A Marine Corps Task List (MCTL-2.0)
4. MCRP 3-0A Unit Training Management Guide
5. MCRP 3-0B How to Conduct Training
6. NAVMC 3500.12 Marine Corps Engineer and Utilities Training and Readiness Manual
7. OPNAVINST 1560.10C Administration of the United Services Military Apprenticeship Program (USMAP) (Apr 07)
8. SAT MANUAL Systems Approach to Training (SAT) Manual (Jun 04)
9. UNIT SOP Unit's Standing Operating Procedures

SUPPORT REQUIREMENTS:

OTHER SUPPORT REQUIREMENTS: MOS Roadmaps are located at
<http://www.tecom.usmc.mil/g3/roadmap.htm>.

1142-ADMN-2041: Initiate a Product Quality Deficiency Report (PQDR) (SF 368)

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a defective item, blank forms, and references.

STANDARD: To ensure deficiency is identified to effect corrections per the references.

PERFORMANCE STEPS:

1. Review references.
2. Verify deficiency requires a PQDR.
3. Determine if deficiency is Category I or Category II.
4. Collect data.
5. Establish exhibit controls using DD Forms 1575 and 2332 (if required).
6. Complete PQDR.
7. Submit PQDR per Unit SOP.

RELATED EVENTS:

1141-ADMN-2041 1171-ADMN-2041 1161-ADMN-2041

REFERENCES:

1. MCO 4855.10B Product Quality Deficiency Report (PQDR) (Jan 93)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UNIT SOP Unit's Standing Operating Procedures
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL:

- DD Form 1575 (Suspended Tag - Materiel)
- DD Form 2332 (Product Quality Deficiency Report Exhibit)
- SF 368 (Product Quality Deficiency Report [PQDR])

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Additional information for this event can be found at www.logcom.usmc.mil/pqdr.

1142-ADMN-2051: Establish equipment preventive maintenance schedule

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment records, forms and references.

STANDARD: To ensure preventive maintenance is scheduled per the references.

PERFORMANCE STEPS:

1. Review references.
2. Determine equipment Preventive Maintenance Checks and Services (PMCS) requirements.
3. Audit equipment records.
4. Complete NAVMC 10561.

PREREQUISITE EVENTS: 1142-ADMN-1011

RELATED EVENTS:

1161-ADMN-2051 1141-ADMN-2051 1171-ADMN-2051

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. MCWP 4-11.4 Maintenance Operations
3. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
4. UNIT SOP Unit's Standing Operating Procedures
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL: NAVMC 10561 (Preventive Maintenance Checks and Services (PMCS) Roster)

1142-ADMN-2061: Maintain Pre-Expended Bin (PEB)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided commander's pre-expended bin, (PEB) authorization and references.

STANDARD: To ensure common, low-cost, high usage parts are continuously available for immediate maintenance/repair of equipment per the references.

PERFORMANCE STEPS:

1. Review the references.
2. Identify criteria for items placed in PEB.
3. Validate authorized PEB listing, ensuring it is signed annually by the commander.
4. Identify accountability requirements.
5. Account for parts when issued, ensuring advice code PB is used in documentation for items over \$50 in value.
6. Requisition replacement parts, as required.
7. Roll back/dispose any excess items.

REFERENCES:

1. MCO P4400.150E Consumer-Level Supply Policy Manual (Jun 99)
2. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
3. UNIT SOP Unit's Standing Operating Procedures
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL: Storage bins

1142-ADMN-2062: Maintain Equipment Repair Order (ERO) parts bins

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided forms, parts storage bins, and references.

STANDARD: To ensure repair parts are available to effect repairs on organic equipment per the references.

PERFORMANCE STEPS:

1. Review references.
2. Receive repair parts, annotating EROSL, and placing repair parts in appropriate bin.
3. Take corrective action if repair parts do not match EROSL.
4. Maintain EROSL in appropriate bin, inventorying the bin every 2 weeks.
5. Issue repair parts, when all are received, annotating EROSL and ERO per unit's SOP.

RELATED EVENTS:

1142-ADMN-2061 1171-ADMN-2062 1161-ADMN-2062
1141-ADMN-2062

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UNIT SOP Unit's Standing Operating Procedures

SUPPORT REQUIREMENTS:

MATERIAL: Storage bins Forms

1142-ADMN-2071: Monitor maintenance management reports

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided MIMMS (AIS) reports, supporting documentation, and references.

STANDARD: To ensure accuracy of essential reports per the references.

PERFORMANCE STEPS:

1. Monitor Daily Process Report (DPR).
2. Monitor Daily Transaction Listing (DTL).
3. Monitor Daily SASSY Transactions.
4. Monitor Daily LM2 Report.
5. Monitor Weekly TAM Report.
6. Monitor Weekly Maintenance Exceptions Report.
7. Monitor Weekly Material Report.
8. Monitor Weekly LM2 Report.
9. Monitor Weekly Shop Summary Report.
10. Monitor Class II Reports.

REFERENCES:

1. MCBUL 3000 Table of Marine Corps Ground Equipment Resources Reporting

2. MCO 3000.11_ Marine Corps Ground Equipment Resources Reporting
 3. MCO 4400.16G Uniform Materiel Movement and Issue Priority System (Jun 85)
 4. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
 5. TM 4700-15/1H Ground Equipment Record Procedures
 6. UM 4400-124 FMF SASSY Using Unit Procedures
 7. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
 8. UNIT SOP Unit's Standing Operating Procedures
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1142-ADMN-2072: Monitor maintenance related programs

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided equipment and references.

STANDARD: To ensure equipment readiness is maintained to support unit operations.

PERFORMANCE STEPS:

1. Review references.
2. Determine unit's maintenance program requirements.
3. Inspect equipment.
4. Monitor Modification Control program.
5. Monitor Calibration Control program.
6. Monitor New Equipment Warranty program.
7. Monitor Joint Oil Analysis Program (JOAP).
8. Monitor Replacement Evacuation (R&E) program.
9. Monitor Quality Deficiency (QDR) program.
10. Monitor Recoverable Items (WIR) program.
11. Monitor Quality Control (QC) program.
12. Monitor Corrosion Prevention and Control (CPAC) program.
13. Ensure program and equipment records are maintained.

RELATED EVENTS:

1141-ADMN-2072	1142-ADMN-2041	1142-ADMN-2051
1171-ADMN-2072	1142-ADMN-2073	1161-ADMN-2072
1169-ADMN-2072	1142-ADMN-2071	

REFERENCES:

1. MCO 4400.194 Class VII Stock Rotation Program
2. MCO 4731.1A Oil Analysis Program for Ground Equipment (Nov 90)
3. MCO 4733.1B Marine Corps Test, Measurement, and Diagnostic Equipment (TMDE) Calibration and Maintenance Program (CAMP) (Jun 99)
4. MCO 4790.18B Corrosion Prevention and Control (CPAC) Program (Jul 04)
5. MCO P4400.150E Consumer-Level Supply Policy Manual (Jun 99)
6. MCO P4400.82F Regulated/Controlled Item Management Manual (Feb 85)
7. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
8. TI 4733-15/1 Calibration Requirements Test, Measurement and Diagnostic Equipment (TMDE) Calibration and Maintenance Program

9. TI-4731-14/1C MC Joint Oil Analysis Program
10. TM 4700-15/1H Ground Equipment Record Procedures
11. TM 750-245-4 Direct Support, General Support Quality Control Inspector's Inspection Criteria
12. UNIT SOP Unit's Standing Operating Procedures
13. Appropriate Technical Manuals

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Some programs listed above may not be required at all units.

1142-ADMN-2073: Inspect maintenance actions (quality control)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided repaired equipment, maintenance forms and references.

STANDARD: To ensure equipment repairs have been completed in accordance with references.

PERFORMANCE STEPS:

1. Review references.
2. Review Equipment Repair Order (ERO).
3. Verify equipment's operational condition.
4. Reject faulty equipment.
5. Verify equipment closeout.
6. Verify completion of maintenance actions.

PREREQUISITE EVENTS: 1142-ADMN-1008

RELATED EVENTS:

1141-ADMN-2073	1142-ADMN-1009	1171-ADMN-2073
1161-ADMN-2073	1142-ADMN-1011	

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. TM 750-245-4 Direct Support, General Support Quality Control Inspector's Inspection Criteria
4. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Repaired equipment

MATERIAL: NAVMC 696D (Motor Vehicle and Engineer Equipment Record Folder)

1142-ADMN-2081: Prepare equipment for embarkation

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a mission, equipment, and references.

STANDARD: To ensure the unit's ability to rapidly deploy in accordance with references.

PERFORMANCE STEPS:

1. Review the MDSS II, MAFTG II LOGAIS, and/or JOPES reports.
2. Inspect assigned equipment.
3. Identify Remain Behind Equipment (RBE).
4. Identify Leave Behind Equipment (LBE).
5. Determine safety/environmental considerations.
6. Mark equipment for transportation/embarkation to include LOGMARS labels.
7. Disassemble, stow, pack, and/or prepare equipment for transportation/embarkation.
8. Coordinate with unit embark personnel to ensure that discrepancies with MDSS II, MAGTF II LOGAIS, and or JOPES reports are corrected.

REFERENCES:

1. DODD 4500.9 Transportation and Traffic Management
2. FM 101-10-1 Organizational, Technical and Logistical Data
3. FM 55-15 Transportation Reference Data
4. FM 55-9 Unit Air Movement Planning
5. FMFM 3-1 Command and Staff Action
6. FMFM 4-6 Movement of Units in Air Force Aircraft
7. JOINT PUB 3-02 Joint Doctrine for Amphibious Operations
8. MCO 4610.35 USMC Equipment Characteristics File
9. MCO P4030.19 Preparing Hazardous Materials for Military Air Shipments
10. MCO P4600.7 USMC Transportation Manual
11. MCWP 3-31.5 Ship-to-Shore Movement
12. MCWP 4-11.3 Transportation Operations
13. NAVMC/MCO 3000.18 Marine Corps Planner's Manual
14. TM 4700-15/1H Ground Equipment Record Procedures
15. TM 4750-15/2 Painting and Registration Marking for Marine Corps Combat and
16. TM 55-2200-001-12 Application of Blocking, Bracing, and Tie Down Material

1142-MANT-2191: Comply with a Modification Instruction (MI)

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an Equipment Repair Order (ERO) on effected equipment, the effected equipment, a Modification Instruction (MI), parts, tools, forms and references.

STANDARD: To ensure required corrective maintenance action(s) have been performed to restore equipment to operational condition.

PERFORMANCE STEPS:

1. Review MI.
2. Review ERO.
3. Inventory parts from ERO layette.
4. Review equipment technical manuals.
5. Don PPE (if required).
6. Apply modification.
7. Test modification.
8. Document modification.

PREREQUISITE EVENTS: 1142-ADMN-1006

RELATED EVENTS:

1142-ADMN-1008	1142-ADMN-1010	1171-MANT-2191
1141-MANT-2191	1161-MANT-1191	1142-ADMN-1011

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Kit, Multi-Capable Maintainer [C7036]
- Equipment being modified

MATERIAL:

- Modification Instruction (MI)
- Parts (if required)
- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10524 (Consolidated Engineer Equipment Operation Log and Service Record)
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 696D (Motor Vehicle and Engineer Equipment Record Folder)

1142-MANT-2199: Mount/dismount a generator set on a trailer

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a generator set, trailer, forklift or crane, tools, and references.

STANDARD: To ensure electrical power equipment is properly installed on trailer assets per the references.

PERFORMANCE STEPS:

1. Review the references.
2. Lift generator set on to trailer.
3. Fasten generator set to trailer.
4. Reverse procedure to dismount generator set.

REFERENCES:

1. MI 6115-24/24C Trailer Mounting of 10kw Generators on M116A2/3 Series Trailer (Jul 04)
2. MI-6115-34/18 MI-6115-34/18

1142-MANT-2308: Diagnose an electrical starter malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review LTI.
3. Review equipment technical manuals.
4. Don PPE.
5. Identify faulty component(s).
6. Determine if component fault was caused by a defect elsewhere.
7. Document findings (complete LTI/initiate ERO).
8. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-MANT-1101 1142-ADMN-1006

RELATED EVENTS:

1142-ADMN-1008 1142-ADMN-1011 1142-ADMN-1010

REFERENCES:

1. TM 2000-15/4 Power System Reference Manual (Jul 68)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)

3. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Faulty electrical starter

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

OTHER SUPPORT REQUIREMENTS: Electrical power source will be required.

1142-MANT-2309: Diagnose an alternator malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review LTI.
3. Review equipment technical manuals.
4. Don PPE.
5. Identify faulty component(s).
6. Determine if component fault was caused by a defect elsewhere.
7. Document findings (complete LTI/initiate ERO).
8. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1006 1142-MANT-1101

RELATED EVENTS:

1142-ADMN-1010 1142-ADMN-1011 1142-ADMN-1008

REFERENCES:

1. TM 2000-15/4 Power System Reference Manual (Jul 68)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Special tool(s) (if required)
- Faulty alternator

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

1142-MANT-2311: Diagnose an Environmental Control Unit (ECU) electrical system malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FROST BITE HAZARD(S).
3. Review LTI.
4. Review equipment technical manuals/wiring diagrams/schematics.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Check switches/gauges for correct settings.
9. Isolate faulty circuit(s).
10. Trace current/voltage paths in circuits.
11. Isolate faulty component(s).
12. Determine if component fault was caused by a defect elsewhere (repeating steps 9, 10, and/or 11 as required).

13. Determine echelon(s) of maintenance.
14. Document findings (complete LTI/initiate ERO).
15. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-MANT-1101 1142-ADMN-1006

RELATED EVENTS:

1142-ADMN-1008 1142-ADMN-1010 1142-ADMN-1011
1161-MANT-1334 1161-MANT-1314 1161-MANT-1315
1161-MANT-1316 1161-MANT-1311

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Multimeter
- Anti-Static Wrist Strap
- Faulty ECU or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

UNITS/PERSONNEL: MOS 1161 (Refrigeration and Air Conditioning Technician) to facilitate troubleshooting process.

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Graduates of the Advanced Engineer Equipment Electrical Systems Technician Course (CID: M03A212) WILL NOT BE certified by the Environmental Protection Agency (EPA) to handle refrigerants.

1142-MANT-2318: Diagnose an Integrated Trailer/ECU/Generator (ITEG) electrical system malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s) per the references.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FIRE/EXPLOSION HAZARD(S).
3. Identify CARBON MONOXIDE HAZARD(S).
4. Identify FROST BITE HAZARD(S).
5. Review LTI.
6. Review equipment technical manuals/wiring diagrams/schematics.
7. Don PPE.
8. Ensure equipment is grounded.
9. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
10. Check switches/gauges for correct settings.
11. Determine if malfunction is ECU or generator related.
12. Determine if malfunction is electrical or mechanical.
13. Isolate faulty circuit(s).
14. Trace current/voltage paths in circuits.
15. Isolate faulty component(s).
16. Determine if component fault was caused by a defect elsewhere (repeating steps 10, 11, 12, 13, 14 and/or 15 as required).
17. Determine echelon(s) of maintenance.
18. Document findings (complete LTI/initiate ERO).
19. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1002	1142-ADMN-1006	1142-MANT-1142
1142-MANT-1106	1142-MANT-1101	

RELATED EVENTS:

1142-ADMN-1008	1142-ADMN-1010	1142-ADMN-1011
1161-MANT-2318	1142-MANT-2311	1141-MANT-2218
1161-MANT-2218	1142-MANT-1351	

REFERENCES:

1. FP 11490A Integrated Trailer Environmental Control Unit & Generator (ITEG)
2. SI 11490A-OI Warranty Procedures for the Integrated Trailer-ECU-Generator
3. SL-3-11490A Components List for Integrated Trailer, Environmental Control Unit, Generator (ITEG)
4. TM 11490A-OR Operation Manual with Repair Parts List, Integrated Trailer-ECU-Generator (ITEG)
5. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
6. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]

- Multimeter
- Anti-Static Wrist Strap
- Faulty Integrated Trailer/ECU/Generator (ITEG) [B0018] or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

UNITS/PERSONNEL: MOS 1161 (Refrigeration and Air Conditioning Technician) to facilitate troubleshooting process on ECU portion of ITEG.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Graduates of the Advanced Engineer Equipment Electrical Systems Technician Course (CID: M03A212) WILL NOT BE certified by the Environmental Protection Agency (EPA) to handle refrigerants.

1142-MANT-2327: Diagnose a tactical refrigeration equipment electrical system malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 24 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FROST BITE HAZARD(S).
3. Review LTI.
4. Review equipment technical manuals/wiring diagrams/schematics.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Check switches/gauges for correct settings.
9. Isolate faulty circuit(s).
10. Trace current/voltage paths in circuits.
11. Isolate faulty component(s).
12. Determine if component fault was caused by a defect elsewhere (repeating steps 9, 10, and/or 11 as required).
13. Determine echelon(s) of maintenance.

14. Document findings (complete LTI/initiate ERO).
15. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-ADMN-1006 1142-MANT-1101

RELATED EVENTS:

1142-ADMN-1008 1161-MANT-1375 1142-ADMN-1011
1142-ADMN-1010

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Multimeter
- Anti-Static Wrist Strap
- Faulty refrigeration equipment or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

UNITS/PERSONNEL: MOS 1161 (Refrigeration and Air Conditioning Technician) to facilitate troubleshooting process.

OTHER SUPPORT REQUIREMENTS: Electrical power source will be required.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Engineer Equipment Electrical Systems Technicians ARE NOT certified (at a Marine Corps Formal School) by the Environmental Protection Agency (EPA) to handle refrigerants.

1142-MANT-2331: Diagnose an M-80/M-85 Water Heater electrical system malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FIRE/EXPLOSION HAZARD(S).
3. Identify CARBON MONOXIDE HAZARD(S).
4. Review LTI.
5. Review equipment technical manuals/wiring diagrams/schematics.
6. Don PPE.
7. Ensure equipment is grounded.
8. Ensure any hazardous energy is controlled (Lockout/Tagout) (if required).
9. Check switches/gauges for correct settings.
10. Isolate faulty circuit(s).
11. Trace current/voltage paths in circuits.
12. Isolate faulty component(s).
13. Determine if component fault was caused by a defect elsewhere (repeating steps 10, 11, and/or 12 as required).
14. Determine echelon(s) of maintenance.
15. Document findings (complete LTI/initiate ERO).
16. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1002 1142-MANT-1101 1142-ADMN-1006

RELATED EVENTS:

1142-ADMN-1008 1142-ADMN-1010 1142-MANT-2332
1171-MANT-1331 1171-MANT-1332 1142-ADMN-1011

REFERENCES:

1. TM 10-4520-259-13&P Operator's, Unit and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) for Heater, Water, Liquid Fuel, Models M-80 and M-85
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Faulty M-80 or M-85 Water Heater

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

UNITS/PERSONNEL: MOS 1171 (Water Support Technician) to facilitate troubleshooting process.

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: M-80 and M-85 Water Heaters are components of the Shower Facility, Bare Base [B0055] and Containerized Batch Laundry (CBL) Unit [B0066].

1142-MANT-2332: Diagnose a Containerized Batch Laundry (CBL) Unit washer/dryer electrical malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify GRAYWATER HAZARD(S).
3. Review LTI.
4. Review equipment technical manuals/wiring diagrams/schematics.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Check switches/gauges for correct settings.
9. Isolate faulty circuit(s).
10. Trace current/voltage paths in circuits.
11. Isolate faulty component(s).
12. Determine if component fault was caused by a defect elsewhere (repeating steps 9, 10, and/or 11 as required).
13. Determine echelon(s) of maintenance.
14. Document findings (complete LTI/initiate ERO).
15. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1002

1142-MANT-1106

1142-MANT-1101

1142-ADMN-1006

RELATED EVENTS:

1142-ADMN-1008	1142-ADMN-1010	1142-MANT-2331
1171-MANT-1331	1171-MANT-1332	1142-ADMN-1011

REFERENCES:

1. SI 11413A Warranty Procedures for the Containerized Batch Laundry
2. TM 11413A-OI/1 Operator/Maintenance Manual Instructions with Repair Parts and Special Tools List (RPSTL) for Containerized Batch Laundry
3. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
4. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Faulty washer or dryer

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

UNITS/PERSONNEL: MOS 1171 (Water Support Technician) to facilitate troubleshooting process.

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required.

1142-MANT-2354: Diagnose a MMG-25 20kW 60Hz Generator Set Synchronizer Box malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Review the LTI/ERO.
2. Review equipment technical manuals/wiring diagrams/schematics.
3. Don PPE.
4. Ensure equipment is grounded.

5. Ensure any stored/hazardous energy is dissipated/controlled.
6. Check switches/gauges for correct settings.
7. Isolate faulty circuit(s).
8. Trace current/voltage paths in circuits.
9. Isolate faulty component(s).
10. Determine if component fault was caused by a defect elsewhere (repeating steps 7, 8, and/or 9 as required).
11. Determine echelon(s) of maintenance.
12. Document findings.
13. Initiate EROSL (if required).

PREREQUISITE EVENTS: 1142-ADMN-1002

RELATED EVENTS: 1142-MANT-1106

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
3. TM 4700-15/1H Ground Equipment Record Procedures
4. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Personal Protective Equipment (PPE); Test Measurement and Diagnostic Equipment (TMDE) [Multimeter]; General Mechanic's Tool Set; Electrical Equipment Repair Tool Set

MATERIAL: Equipment Repair Order (ERO) (NAVMC 10245); Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment (LTI) (NAVMC 10560); Equipment Repair Order Shopping/Transaction List (EROSL) (NAVMC 10925)

1142-MANT-2365: Diagnose a MEP-807A 100kW 60Hz Tactical Quiet Generator Set engine malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FIRE/EXPLOSION HAZARD(S).

3. Identify CARBON MONOXIDE HAZARD(S).
4. Review LTI.
5. Review equipment technical manuals/wiring diagrams/schematics.
6. Don PPE.
7. Ensure equipment is grounded.
8. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout) (if required).
9. Check Digital Voltage Regulator (DVR) and Generator Set Controls (GSC) for correct settings.
10. Determine if malfunction is electrical or mechanical.
11. Isolate faulty circuit(s).
12. Trace current/voltage paths in circuits.
13. Isolate faulty component(s).
14. Determine if component fault was caused by a defect elsewhere (repeating steps 10, 11, 12, and/or 13 as required).
15. Determine echelon(s) of maintenance.
16. Document findings (complete LTI/initiate ERO).
17. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1002	1142-MANT-1101	1142-ADMN-1006
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RELATED EVENTS:

1141-MANT-1265	1142-ADMN-1008	1142-ADMN-1010
1142-ADMN-1011	1142-MANT-1469	1142-MANT-1451
1142-MANT-1466	1142-MANT-1467	1142-MANT-1468
1142-MANT-1351		

REFERENCES:

1. FP 07464C B1045 MEP-807A 100kW Tactical Quiet Generator (TQG)
2. SI 07464C-OI/1 Warranty Procedures for MEP-807A 100kW Tactical Quiet Generator
3. SL-3-6115 Components List for Generator Set, Diesel Engine Driven, Skid Mounted
4. TM 07464C-10/1 Operator's Manual for Generator Set, Skid Mounted, Tactical Quiet, 100kW, 50/60 Hz, MEP-807A
5. TM 07464C-24/2 Field and Sustainment Maintenance for Generator Set, Skid Mounted, Tactical Quiet, 100kW, 50/60 Hz, MEP-807A
6. TM 07464C-24P/3 Field and Sustainment Level Repair Parts and Special Tools List for Generator Set, Skid Mounted, Tactical Quiet, 100kW, 50/60 Hz, MEP-807A
7. TM 07464C-35 Systems Operation Testing and Adjusting for Caterpillar Generator Sets (Feb 00)
8. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
9. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Anti-Static Wrist Strap
- Caterpillar Electronic Technician (CAT-E-Tool)

- Faulty MEP-807A 100kW 60Hz Tactical Quiet Generator Set [B1045] or components

MATERIAL:

- DVR/GSC Programming Fault Guide
- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

1142-MANT-2395: Diagnose an electrical fault on a hydraulic/pneumatic system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review LTI.
3. Review equipment technical manuals/wiring diagrams/schematics.
4. Don PPE.
5. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout) (if required).
6. Check levers, valves, switches and/or gauges for correct settings.
7. Determine if malfunction is electrical or mechanical.
8. Isolate faulty circuit(s).
9. Trace current/voltage paths in circuits.
10. Isolate faulty component(s).
11. Determine if component fault was caused by a defect elsewhere (repeating steps 7, 8, 9, and/or 10 as required).
12. Determine echelon(s) of maintenance.
13. Document findings (complete LTI/initiate ERO).
14. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1006 1142-ADMN-1002 1142-MANT-1106
1142-MANT-1101

RELATED EVENTS:

1142-ADMN-1008 1142-ADMN-1011 1142-ADMN-1010

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)

2. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Anti-Static Wrist Strap (if required)
- Equipment with faulty hydraulic/pneumatic system

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

UNITS/PERSONNEL: Operator licensed on equipment with faulty hydraulic/pneumatic system.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: The operator will assist by advising on proper lever, valve, switch and/or gauge settings and on the functions of components controlled by hydraulic/pneumatic system.

1142-MANT-2396: Diagnose a Marine Corps Tactical Welding Shop (MCTWS) electrical malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review LTI.
3. Review equipment technical manuals/wiring diagrams/schematics.
4. Don PPE.
5. Ensure equipment is grounded.
6. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).

7. Check switches/gauges for correct settings.
8. Isolate faulty circuit(s).
9. Trace current/voltage paths in circuits.
10. Isolate faulty component(s).
11. Determine if component fault was caused by a defect elsewhere (repeating steps 8, 9, and/or 10 as required).
12. Determine echelon(s) of maintenance.
13. Document findings (complete LTI/initiate ERO).
14. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1001	1142-ADMN-1002	1142-ADMN-1003
1142-MANT-1109	1142-MANT-1101	1142-MANT-1106
1142-MANT-1108	1142-ADMN-1006	

RELATED EVENTS:

1142-ADMN-1010	1142-ADMN-1008	1142-MANT-1351
1142-ADMN-1011		

REFERENCES:

1. SI 11413A Warranty Procedures for the Containerized Batch Laundry
2. TM 11413A-OI/1 Operator/Maintenance Manual Instructions with Repair Parts and Special Tools List (RPSTL) for Containerized Batch Laundry
3. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
4. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Anti-Static Wrist Strap
- Faulty Marine Corps Tactical Welding Shop (MCTWS) [B2685] or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

UNITS/PERSONNEL: MOS 1316 (Welder) to facilitate troubleshooting process.

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required.

1142-MANT-2397: Diagnose a tactical engineer equipment electrical system malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review LTI.
3. Review equipment technical manuals/wiring diagrams/schematics.
4. Don PPE.
5. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout) (if required).
6. Check levers, valves, switches and/or gauges for correct settings.
7. Determine if malfunction is electrical or mechanical.
8. Isolate faulty circuit(s).
9. Trace current/voltage paths in circuits.
10. Isolate faulty component(s).
11. Determine if component fault was caused by a defect elsewhere (repeating steps 7, 8, 9, and/or 10 as required).
12. Determine echelon(s) of maintenance.
13. Document findings (complete LTI/initiate ERO).
14. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1142-ADMN-1006	1142-MANT-1101	1142-MANT-1106
1142-ADMN-1002	1142-MANT-1108	1142-MANT-1109
1142-ADMN-1001		

RELATED EVENTS:

1142-ADMN-1008	1142-ADMN-1010	1142-ADMN-1011
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REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Anti-Static Wrist Strap (if required)
- Faulty tactical engineer equipment or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

UNITS/PERSONNEL: Operator licensed on equipment with faulty electrical system.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: The operator will assist by advising on proper lever, valve, switch and/or gauge settings and on the functions of components.

1142-MANT-2408: Service an electrical starter

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with references.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review ERO.
3. Inventory parts in ERO layette.
4. Review equipment technical manuals.
5. Don PPE.
6. Remove faulty part(s).
7. Prepare area(s) for new part(s).
8. Attach new part(s), making necessary adjustments.
9. Determine if fault was caused by a defect elsewhere.
10. Test repairs.
11. Document repairs.

PREREQUISITE EVENTS:

1142-MANT-1101 1142-MANT-1109 1142-MANT-1108

RELATED EVENTS:

1142-ADMN-1006 1142-MANT-1451 1142-ADMN-1011
1142-ADMN-1008

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Inoperable starter

MATERIAL:

- Repair parts
- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

OTHER SUPPORT REQUIREMENTS: Electrical power source will be required.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Graduates of the Advanced Engineer Equipment Electrical Systems Technician Course (CID: M03A212) WILL NOT BE qualified to rewind starters.

1142-MANT-2409: Service an alternator

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with references.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review ERO.
3. Inventory parts in ERO layette.
4. Review equipment technical manuals.
5. Don PPE.
6. Remove faulty part(s).
7. Prepare area(s) for new part(s).
8. Attach new part(s), making necessary adjustments.
9. Determine if fault was caused by a defect elsewhere.
10. Test repairs.
11. Document repairs.

PREREQUISITE EVENTS:

1142-MANT-1101 1142-MANT-1108 1142-MANT-1109

RELATED EVENTS:

1142-ADMN-1006 1142-ADMN-1008 1142-ADMN-1011
1142-MANT-1451

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Multimeter
- Tool Set, Electrical Equipment Repair [B2365]
- Tool Kit, Multi-Capable Maintainer [C7036]
- Inoperable alternator

MATERIAL:

- Repair parts
- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Graduates of the Advanced Engineer Equipment Electrical Systems Technician Course (CID: M03A212) WILL NOT BE qualified to rewind alternators.

1142-MANT-2442: Repair a 100kW Electrical Load Bank

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with references.

PERFORMANCE STEPS:

1. Review the LTI/ERO.
2. Inventory parts in ERO layette.

3. Review equipment technical manuals.
4. Don PPE.
5. Remove faulty part(s).
6. Clean area for new part(s).
7. Attach new part(s).
8. Determine if system fault was caused by a defect elsewhere.
9. Test repairs.
10. Document repairs.

PREREQUISITE EVENTS:

1142-ADMN-1002

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
3. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
4. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Personal Protective Equipment (PPE); Test Measurement and Diagnostic Equipment (TMDE); General Mechanic's Tool Set; Electrical Equipment Repair Tool Set; piece of engineer equipment requiring electrical system repair

MATERIAL: Equipment Repair Order (ERO) (NAVMC 10245); Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment (LTI) (NAVMC 10560); Equipment Repair Order Shopping/Transaction List (EROSL) (NAVMC 10925); repair parts

1142-MANT-2447: Repair a floodlight set

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with references.

PERFORMANCE STEPS:

1. Review the LTI/ERO.
2. Inventory parts in ERO layette.
3. Review equipment technical manuals.
4. Don PPE.
5. Remove faulty part(s).

6. Clean area for new part(s).
7. Attach new part(s).
8. Determine if system fault was caused by a defect elsewhere.
9. Test repairs.
10. Document repairs.

PREREQUISITE EVENTS:

1142-ADMN-1002

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
3. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
4. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Personal Protective Equipment (PPE); Test Measurement and Diagnostic Equipment (TMDE); General Mechanic's Tool Set; Electrical Equipment Repair Tool Set; piece of engineer equipment requiring electrical system repair

MATERIAL: Equipment Repair Order (ERO) (NAVMC 10245); Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment (LTI) (NAVMC 10560); Equipment Repair Order Shopping/Transaction List (EROSL) (NAVMC 10925); repair parts

1142-MANT-2497: Repair an engineer equipment electrical system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with references.

PERFORMANCE STEPS:

1. Review the LTI/ERO.
2. Inventory parts in ERO layette.
3. Review equipment technical manuals.
4. Don PPE.
5. Remove faulty part(s).
6. Clean area for new part(s).
7. Attach new part(s).
8. Determine if system fault was caused by a defect elsewhere.

9. Test repairs.
10. Document repairs.

PREREQUISITE EVENTS: 1142-ADMN-1002

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
3. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
4. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Personal Protective Equipment (PPE); Test Measurement and Diagnostic Equipment (TMDE); General Mechanic's Tool Set; Electrical Equipment Repair Tool Set; piece of engineer equipment requiring electrical system repair

MATERIAL: Equipment Repair Order (ERO) (NAVMC 10245); Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment (LTI) (NAVMC 10560); Equipment Repair Order Shopping/Transaction List (EROSL) (NAVMC 10925); repair parts

1142-MANT-2498: Repair a general supply equipment electrical system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with references.

PERFORMANCE STEPS:

1. Review the LTI/ERO.
2. Inventory parts in ERO layette.
3. Review equipment technical manuals.
4. Don PPE.
5. Remove faulty part(s).
6. Clean area for new part(s).
7. Attach new part(s).
8. Determine if system fault was caused by a defect elsewhere.
9. Test repairs.
10. Document repairs.

PREREQUISITE EVENTS: 1142-ADMN-1002

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
3. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)

4. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Personal Protective Equipment (PPE); Test Measurement and Diagnostic Equipment (TMDE); General Mechanic's Tool Set; Electrical Equipment Repair Tool Set; piece of engineer equipment requiring electrical system repair

MATERIAL: Equipment Repair Order (ERO) (NAVMC 10245); Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment (LTI) (NAVMC 10560); Equipment Repair Order Shopping/Transaction List (EROSL) (NAVMC 10925); repair parts

1142-XENG-2598: Determine maintenance contact team Engineer Equipment Electrical System Technician support requirements

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Engineer Equipment Electrical Systems Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given a requirement to provide maintenance/repairs of engineer/general supply equipment electrical systems at a forward location.

STANDARD: To ensure an effective maintenance plan is established to support mission requirements.

PERFORMANCE STEPS:

1. Review the requirements.
2. Determine numbers of equipment requiring maintenance/repair.
3. Determine numbers of personnel required to support the quantity of equipment.
4. Review equipment technical manual to determine repair parts requirements.
5. Assemble parts block.
6. Assign personnel.

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
 2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
 3. Appropriate Technical Manuals
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ENG & UTIL T&R MANUAL

CHAPTER 7

MOS 1161 INDIVIDUAL EVENTS

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ENG & UTIL T&R MANUAL

CHAPTER 7

MOS 1161 INDIVIDUAL EVENTS

7000. PURPOSE. This chapter includes all individual training events for the Refrigeration and Air Conditioning Technician. An individual event is an event that a trained Refrigeration and Air Conditioning Technician would accomplish in the execution of Mission Essential Tasks (METs). These events are linked to a Service-Level Mission Essential Task. This linkage tailor's individual and collective training for the selected MET. Each event is composed of an individual event title, condition, standard, performance steps, support requirements, and references. Accomplishment and proficiency level required is determined by the event standard.

7001. ADMINISTRATIVE NOTES

1. Individual T&R events are coded for ease of reference. Each event has a 4-4-4-character identifier. The first four characters represent the MOS (1161).

2. The second four characters represent the functional or duty area. For example:

ADMN - Administration
MANT - Maintenance
XENG - General Engineering

See Appendix A for a complete list of functional areas.

3. The first of the last four characters represent the level (1000 or 2000) and the last three characters the sequence (1001, 2101) of the event. The Refrigeration and Air Conditioning Technician individual training events are separated into two levels:

1000 - Core Skills
2000 - Core Plus Skills

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7003. 1000-LEVEL EVENTS

1161-ADMN-1001: Conduct an Operational Risk Assessment (ORA)

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a task/mission, a Risk Management Worksheet, and references.

STANDARD: To ensure safety mishaps are mitigated through the use of risk management controls per the references.

PERFORMANCE STEPS:

1. Review task/mission.
2. Review references.
3. Identify hazards, recording them on Risk Management Worksheet.
4. Assess severity and probability of hazards to determine risk levels.
5. Develop risk control measures.
6. Make risk decisions and/or forward Risk Management Worksheet to supervisor for decision/approval.
7. Implement controls.

RELATED EVENTS:

1142-ADMN-1001 1171-ADMN-1001 1141-ADMN-1001

REFERENCES:

1. MCO 3500.27B Operational Risk Management (ORM) (MAY 2004)
2. MCRP 5-12.1C Risk Management (Feb 01)

SUPPORT REQUIREMENTS:

MATERIAL: Risk Management Worksheet.

1161-ADMN-1002: Control (Lockout/Tagout) hazardous energy

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, equipment manuals, PPE, Lockout/Tagout devices, forms, and references.

STANDARD: To ensure safety procedures are performed to prevent electrical mishaps per the references.

PERFORMANCE STEPS:

1. Review references.
2. Locate all energy isolating devices and hazardous energy sources (NOTE: There may be more than one).
3. Obtain required number of Lockout/Tagout devices from program coordinator.
4. Notify all effected personnel and supervisors.
5. Shut down equipment/turn off circuit.
6. Dissipate or restrain any stored energy.
7. Apply Lockout/Tagout devices.
8. Verify energy is isolated/dissipated (test circuit).
9. Effect required service, maintenance, repairs or modifications to equipment/circuit.
10. Remove Lockout/Tagout devices.
11. Restore equipment/circuit to normal operation.
12. Return Lockout/Tagout devices to program coordinator.

RELATED EVENTS:

1141-ADMN-1002 1171-ADMN-1002 1142-ADMN-1002

REFERENCES:

1. NAVMC DIR 5100.8 Marine Corps Occupational Safety and Health (OSH) Program Manual (May 06)
2. UNIT SOP Unit's Standing Operating Procedures
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Personal Protective Equipment (PPE).

MATERIAL:

- Lockout/Tagout devices
- NAVMC 11403 (Lockout/Tagout Checklist)

UNITS/PERSONNEL: Lockout/Tagout Program Coordinator.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: NAVMC Dir 5100.8, Chapter 12, provides detailed information for this event.

1161-ADMN-1003: Recover an electric shock victim

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given an electrical mishap involving a potential casualty.

STANDARD: To ensure the performance of proper safety procedures to prevent further injury to personnel.

PERFORMANCE STEPS:

1. Evaluate situation.
2. Send for help.
3. Provide for personal protection.
4. Isolate victim from electrical source.
5. Evaluate victim.
6. Start artificial resuscitation (if necessary).
7. Remain with victim until medical help arrives.
8. Report incident.

RELATED EVENTS:

1120-ADMN-2003	1141-ADMN-1003	1171-ADMN-1003
1169-ADMN-2003	1142-ADMN-1003	

REFERENCES:

1. FM 5-424 Theater of Operations Electrical Systems (Jun 97)
2. MCRP 3-02G First Aid (Dec 02)
3. TM 2000-15/4 Power System Reference Manual (Jul 68)
4. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)

1161-ADMN-1004: Respond to a hazardous materials spill

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a hazardous material mishap involving potential environmental damage.

STANDARD: To ensure the performance of proper containment procedures to prevent further environmental damage.

PERFORMANCE STEPS:

1. Evacuate immediate area (if necessary).
2. Contain spill.
3. Report spill.
4. Remove uncontaminated material.
5. Dispose of hazardous material.

RELATED EVENTS:

1120-ADMN-2004	1141-ADMN-1004	1171-ADMN-1004
1169-ADMN-2004	1142-ADMN-1004	

REFERENCES:

1. MCO 4450.12A Storage and Handling of Hazardous Materials (Jan 99)
2. MCO P5090.2A Environmental Compliance and Protection Manual (Jul 98)

3. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)
4. UNIT SOP Unit's Standing Operating Procedures

1161-ADMN-1005: Administer first aid for chemical ingestion/contact

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a chemical mishap involving a potential casualty, Material Safety Data Sheets (MSDS).

STANDARD: To ensure the performance of proper safety procedures to prevent further injury to personnel.

PERFORMANCE STEPS:

1. Protect yourself and other personnel.
2. Send for help.
3. Review Material Safety Data Sheet (MSDS).
4. Provide for personal protection (PPE) (if required).
5. Give first aid.
6. Remain with victim until medical help arrives.
7. Report incident.

RELATED EVENTS:

1120-ADMN-2005	1141-ADMN-1005	1171-ADMN-1005
1169-ADMN-2005	1142-ADMN-1005	

REFERENCES:

1. MCRP 3-02G First Aid (Dec 02)

SUPPORT REQUIREMENTS:

EQUIPMENT: Personal Protective Equipment (PPE).

MATERIAL: Material Safety Data Sheet (MSDS) file.

1161-ADMN-1007: Conduct an SL-3 Components List/Basic Issue Items (BII) inventory

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 6 month

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment and references.

STANDARD: To ensure accountability of all equipment components per the SL-3/BII list and the references.

PERFORMANCE STEPS:

1. Review references.
2. Obtain Components List (SL-3 or TM listing Basic Issue Items [BII]) for item.
3. Identify each component using the SL-3/BII.
4. Identify missing components.
5. Identify unserviceable components.
6. Document inventory results.
7. Report any inventory discrepancies and unserviceable components.

PREREQUISITE EVENTS: 1161-ADMN-1006

RELATED EVENTS:

1141-ADMN-1007 1171-ADMN-1007 1142-ADMN-1007

REFERENCES:

1. MCO P4400.150E Consumer-Level Supply Policy Manual (Jun 99)
2. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
3. UNIT SOP Unit's Standing Operating Procedures
4. Appropriate Technical Manuals

1161-ADMN-1008: Conduct a Limited Technical Inspection (LTI)

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment requiring inspection and the equipment's records, forms, tools, and references.

STANDARD: To document missing and unserviceable equipment components per the references.

PERFORMANCE STEPS:

1. Review references.
2. Lockout/Tagout equipment (if required).
3. Provide for personal protection (PPE) (if required).
4. Identify components.
5. Verify component function/serviceability.
6. Verify authorized modifications.
7. Record discrepancies (if any).
8. Attach NAVMC 1018 to equipment (if required).
9. Complete NAVMC 10560.

PREREQUISITE EVENTS:

1161-ADMN-1002 1161-ADMN-1007 1161-ADMN-1006

RELATED EVENTS:

1141-ADMN-1008 1171-ADMN-1008 1142-ADMN-1008

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. MCRP 4-11.4A Battle Damage Assessment and Repair
3. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
4. UNIT SOP Unit's Standing Operating Procedures
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Personal Protective Equipment (PPE).

MATERIAL:

- NAVMC 1018 (Inspection/Repair Tag)
 - NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection of Engineer Equipment [LTI])
-

1161-ADMN-1009: Document equipment operation history

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, equipment's records, forms, and references.

STANDARD: To ensure equipment hours of operation are correctly documented per the references.

PERFORMANCE STEPS:

1. Review references.
2. Validate equipment descriptive data on NAVMC 696D.
3. Ensure equipment descriptive data on NAVMC 10524 is correct.
4. Record hours/days equipment was operated (on NAVMC 10524).

RELATED EVENTS:

1141-ADMN-1009 1171-ADMN-1009 1142-ADMN-1009

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL:

- NAVMC 696D (Motor Vehicle and Engineer Equipment Record Folder)
 - NAVMC 10524 (Consolidated Engineer Equipment Operation Log and Service Record)
-

1161-ADMN-1010: Requisition repair parts

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided forms, a list of required parts/components, required unit unique data, equipment technical manuals, and references.

STANDARD: To ensure essential repair parts have been properly ordered per the references.

PERFORMANCE STEPS:

1. Review references.
2. Review equipment technical manuals and/or stock lists.
3. Complete NAVMC 10925 header information.
4. Annotate repair part/component information on the NAVMC 10925.
5. Submit NAVMC 10925 for input.
6. Follow up/reconcile requisition (as needed/required).

PREREQUISITE EVENTS: 1161-ADMN-1006

RELATED EVENTS:

1141-ADMN-1010 1171-ADMN-1010 1161-ADMN-1011
1142-ADMN-1010

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
4. UNIT SOP Unit's Standing Operating Procedures

SUPPORT REQUIREMENTS:

MATERIAL: NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])

OTHER SUPPORT REQUIREMENTS: Internet access, with a CAC card, may be required in order to complete this event per the Unit SOP.

1161-ADMN-1011: Document equipment service/repair history

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided forms and references.

STANDARD: To ensure a completed Equipment Repair Order (NAVMC 10245) is accurate per equipment indicated, and the references.

PERFORMANCE STEPS:

1. Review references.
2. Fill out equipment descriptive data on NAVMC 10245.
3. Annotate NAVMC 10245 with service/repair actions taken.
4. Submit NAVMC 10245 for input.

RELATED EVENTS:

1161-ADMN-1006	1161-ADMN-1008	1161-ADMN-1009
1171-ADMN-1011	1141-ADMN-1011	1142-ADMN-1011
1161-ADMN-1010		

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL: NAVMC 10245 (Equipment Repair Order [ERO])

1161-ADMN-1012: Initiate a Recommended Change to Technical Publications/Logistics-Maintenance Data Coding (NAVMC 10772)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an identified error/deficiency to a technical publication and references.

STANDARD: To ensure corrections/improvements to technical publication(s) is submitted per the references.

PERFORMANCE STEPS:

1. Review references.
2. Determine if error/deficiency requires use of Part I or Part II of NAVMC 10772.
3. Fill in all required blocks of NAVMC 10772.
4. Forward completed NAVMC 10772 per unit's SOP.

PREREQUISITE EVENTS: 1161-ADMN-1006

RELATED EVENTS:

1141-ADMN-1012	1171-ADMN-1012	1142-ADMN-1012
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REFERENCES:

1. MCO P5215.17C The Marine Corps Technical Publications System (Jun 96)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UNIT SOP Unit's Standing Operating Procedures

SUPPORT REQUIREMENTS:

MATERIAL: NAVMC 10772 (Recommended Change to Technical Publications/Logistics-Maintenance Data Coding)

OTHER SUPPORT REQUIREMENTS: Internet access, with a CAC card, may be required in order to complete this event per Unit's SOP. The website used will be <https://pubs.logcom.usmc.mil>.

1161-ADMN-1016: Obtain EPA Section 609 Technician Certification

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLET: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided instruction and references.

STANDARD: To ensure technician successfully performs Clean Air Act procedures for certification per the references.

PERFORMANCE STEPS:

1. Review references.
2. Pass Environmental Protection Agency (EPA) Section 609 examination.
3. Obtain documentation of certification.
4. Monitor changes to Section 609 of the Clean Air Act (CAA).

RELATED EVENTS:

1161-ADMN-1018

1161-ADMN-1017

REFERENCES:

1. 40 CFR 82 Chapter 40, Code of Federal Regulations, Part Number 82 (Protection of Stratospheric Ozone)
2. 42 USC 85 VI 7671 Title 42, United States Code, Chapter 85, Subchapter VI, Section 7671 (Ozone Protection)
3. MCO 5090.1 Chlorofluorocarbons (CFC's) and Halons (Oct 89)
4. PL 101-549 Public Law No: 101-549 - Clean Air Act Amendments of 1990
5. Appropriate Technical Manuals

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Graduates of the Basic Refrigeration Mechanic Course (CID: A0111D1) have Environmental Protection Agency (EPA) Section 609 certification. EPA Section 609 certification allows the technician to work on automotive systems. Certification is obtained from an authorized

EPA testing facility. Current information on Section 609 of the CAA can be found at www.epa.gov/ozone/title6/609.

SPECIAL PERSONNEL CERTS: EPA Section 609 Technician Certificate.

1161-ADMN-1017: Obtain EPA Section 608 Type I Technician Certification

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided instruction and references.

STANDARD: To ensure technician successfully performs Clean Air Act procedures for certification per the references.

PERFORMANCE STEPS:

1. Review references.
2. Pass Environmental Protection Agency (EPA) Section 608 Core examination.
3. Pass EPA Section 608 Type I examination.
4. Obtain documentation of certification.
5. Monitor changes to Section 608 of the Clean Air Act (CAA).

RELATED EVENTS:

1161-ADMN-1018 1161-ADMN-1016

REFERENCES:

1. 40 CFR 82 Chapter 40, Code of Federal Regulations, Part Number 82 (Protection of Stratospheric Ozone)
2. 42 USC 85 VI 7671 Title 42, United States Code, Chapter 85, Subchapter VI, Section 7671 (Ozone Protection)
3. MCO 5090.1 Chlorofluorocarbons (CFC's) and Halons (Oct 89)
4. PL 101-549 Public Law No: 101-549 - Clean Air Act Amendments of 1990
5. Appropriate Technical Manuals

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Graduates of the Basic Refrigeration Mechanic Course (CID: A0111D1) have Environmental Protection Agency (EPA) Section 608 Type I certification. EPA Section 608 Type I certification allows the technician to work on "small appliances." Certification is obtained from an authorized EPA testing facility. Current information on Section 608 of the CAA can be found at www.epa.gov/ozone/title6/608.

SPECIAL PERSONNEL CERTS: EPA Section 608 Type I Technician Certificate.

1161-ADMN-1018: Obtain EPA Section 608 Type II Technician Certification

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided instruction and references.

STANDARD: To ensure technician successfully performs Clean Air Act procedures for certification per the references.

PERFORMANCE STEPS:

1. Review references.
2. Pass Environmental Protection Agency (EPA) Section 608 Core examination.
3. Pass EPA Section 608 Type II examination.
4. Obtain documentation of certification.
5. Monitor changes to Section 608 of the Clean Air Act (CAA).

RELATED EVENTS:

1161-ADMN-1016 1161-ADMN-1017

REFERENCES:

1. 40 CFR 82 Chapter 40, Code of Federal Regulations, Part Number 82 (Protection of Stratospheric Ozone)
2. 42 USC 85 VI 7671 Title 42, United States Code, Chapter 85, Subchapter VI, Section 7671 (Ozone Protection)
3. MCO 5090.1 Chlorofluorocarbons (CFC's) and Halons (Oct 89)
4. PL 101-549 Public Law No: 101-549 - Clean Air Act Amendments of 1990
5. Appropriate Technical Manuals

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Graduates of the Basic Refrigeration Mechanic Course (CID: A0111D1) have Environmental Protection Agency (EPA) Section 608 Type II certification. EPA Section 608 Type II certification allows the technician to work on high pressure and very high pressure refrigerant systems (most Marine Corps equipment). Certification is obtained from an authorized EPA testing facility. Current information on Section 608 of the CAA can be found at www.epa.gov/ozone/title6/608.

SPECIAL PERSONNEL CERTS: EPA Section 608 Type II Technician Certificate.

1161-MANT-1101: Operate a multimeter

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment having an electrical circuit(s), multimeter, and references.

STANDARD: To ensure electrical circuit outputs are within standards.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Determine correct setting (AC, DC, resistance or current).
3. Test circuit (voltage, resistance, current).
4. Record measurements/readings.
5. Analyze measurements/readings.

RELATED EVENTS:

1161-ADMN-1002	1141-MANT-1101	1171-MANT-2101
1161-ADMN-1001	1142-MANT-1101	

REFERENCES:

1. IM 8024B Manufacturer's Instruction Manual for Fluke Model 8024B Digital Multimeter
2. TC 9-60 COMMUNICATIONS-ELECTRONICS FUNDAMENTALS, BASIC PRINCIPLES OF ALTERNATING CURRENT AND DIRECT CURRENT
3. TC 9-62 Communications-Electronics Fundamentals, Solid State Devices and Solid State Power Supplies and Amplifiers
4. TM 2000-15/4 Power System Reference Manual (Jul 68)
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Multimeter
- Equipment with an electrical circuit

1161-MANT-1102: Operate a Bar Gauge Manifold

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, refrigerant and references.

STANDARD: To ensure refrigerant levels within refrigeration/air conditioning equipment are within standards.

PERFORMANCE STEPS:

1. Identify FROST BITE HAZARD(S).
2. Review references.
3. Perform before operation checks on Bar Gauge Manifold.
4. Don PPE.
5. Attach charging line (hoses) to refrigeration/air conditioning equipment.
6. Purge charging line.
7. Check for leaks.
8. Observe readings.
9. Analyze readings.

10. Equalize system pressure on Bar Gauge Manifold.
11. Disconnect charging line from refrigeration/air conditioning equipment.

PREREQUISITE EVENTS:

1161-ADMN-1017 1161-ADMN-1016 1161-ADMN-1006
1161-ADMN-1018

RELATED EVENTS:

1161-MANT-1103 1161-MANT-1107 1161-MANT-1106
1161-MANT-1104

REFERENCES:

1. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Bar Gauge Manifold
- Refrigeration/Air conditioning equipment to be serviced/repaired

MATERIAL: Refrigerant (if needed).

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA certification for refrigerant system being worked on.

1161-MANT-1103: Operate a vacuum pump

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, an electrical power source and references.

STANDARD: To ensure refrigeration equipment tubing is functioning properly per the references.

PERFORMANCE STEPS:

1. Review references.
2. Perform before operation checks on vacuum pump.
3. Connect vacuum pump to refrigerant system tubing via Bar Gauge Manifold.
4. Turn on pump.
5. Check for suction.
6. Monitor Bar Gauge Manifold until vacuum is established.
7. Turn off pump.
8. Verify refrigerant tubing is not leaking.
9. Perform after operation checks on vacuum pump.

PREREQUISITE EVENTS:

1161-ADMN-1016 1161-ADMN-1006 1161-ADMN-1018
1161-ADMN-1017

RELATED EVENTS:

1161-MANT-1106 1161-MANT-1107 1161-MANT-1104
1161-MANT-1102

REFERENCES:

1. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Vacuum pump
- Bar Gauge Manifold
- Equipment with refrigerant tubing

OTHER SUPPORT REQUIREMENTS: Electrical power source

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA certification for refrigerant system being worked on.

1161-MANT-1104: Operate a Refrigerant Recovery/Recycling Station

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, an electrical power source and references.

STANDARD: To ensure degraded refrigerant is recovered/recycled with "de minimis" atmospheric impact per the references.

PERFORMANCE STEPS:

1. Identify FROST BITE HAZARD(S).
2. Review reference(s).
3. Don PPE.
4. Attach hoses to equipment being serviced.
5. Perform before operation checks.
6. Check for leaks.
7. Turn on station.
8. Recover/recycle refrigerant.
9. Perform during operation checks.
10. Turn off station.

PREREQUISITE EVENTS:

1161-ADMN-1017 1161-ADMN-1016 1161-ADMN-1006
1161-ADMN-1018

RELATED EVENTS:

1161-MANT-1102 1161-MANT-1103 1161-MANT-1107

REFERENCES:

1. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Refrigerant Recovery and Recycling Station [B1713]
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061] (if required)
- Refrigeration or air conditioning equipment being serviced

MATERIAL: Refrigerant

OTHER SUPPORT REQUIREMENTS: Electrical power source.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA certification for refrigerant system being worked on.

1161-MANT-1105: Flare tubing

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, material and references.

STANDARD: To ensure connection(s) will not leak when under pressure.

PERFORMANCE STEPS:

1. Review reference(s).
2. Size tubing.
3. Prepare tubing and fitting (clean).
4. Create flare.
5. Make connection.
6. Test connection for leaks.

RELATED EVENTS:

1161-MANT-1106 1161-MANT-1109

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
2. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Equipment with faulty tubing

MATERIAL:

- Air Conditioner/Refrigeration (ACR) copper tubing
- Fittings

1161-MANT-1106: Braze tubing

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETTS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, material and references.

STANDARD: To ensure a leak proof connection per TB SIG 222.

PERFORMANCE STEPS:

1. Identify FIRE HAZARD(S).
2. Identify VAPOR HAZARD(S).
3. Review references.
4. Size tubing.
5. Prepare tubing and fittings (sand and flux).
6. Don PPE.
7. Heat connection(s).
8. Apply solder/braze connection(s).
9. Clean connection(s).
10. Test connection(s) for leaks.

RELATED EVENTS:

1161-MANT-1105

1161-MANT-1109

REFERENCES:

1. TB SIG 222 Solder and Soldering
2. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Equipment with faulty tubing

MATERIAL:

- Air Conditioner/Refrigeration (ACR) copper tubing
- Fittings
- Flux (if required)
- Solder
- Emery cloth

OTHER SUPPORT REQUIREMENTS: Ventilation is required if this event is performed indoors.

1161-MANT-1107: Charge a system with refrigerant

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, refrigerant, electrical power source and references.

STANDARD: To ensure refrigerant system operating pressures are obtained per the equipment's technical manual(s).

PERFORMANCE STEPS:

1. Identify FROST BITE HAZARD(S).
2. Review references for normal operating pressures.
3. Don PPE.
4. Connect Bar Gauge Manifold to refrigerant system.
5. Evacuate system (if required).
6. Ensure vacuum is maintained (if needed).
7. Introduce refrigerant.
8. Monitor Bar Gauge Manifold until operating pressure is reached.
9. Test refrigerant system.

PREREQUISITE EVENTS:

1161-ADMN-1004	1161-ADMN-1005	1161-ADMN-1016
1161-ADMN-1006	1161-ADMN-1018	1161-MANT-1102
1161-ADMN-1017		

RELATED EVENTS:

1161-MANT-1104	1161-MANT-1103
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REFERENCES:

1. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Refrigeration or air conditioning equipment being serviced

MATERIAL: Refrigerant

OTHER SUPPORT REQUIREMENTS: Electrical power source.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA certification for refrigerant system being worked on.

1161-MANT-1108: Splice a wire connection on equipment

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, material and references.

STANDARD: To ensure electrical continuity is established with tensile strength required by technical manuals related to the application.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review references.
3. Determine type of splice required.
4. Don PPE.
5. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
6. Strip wire(s).
7. Clean component(s) and wire(s).
8. Construct the splice.
9. Test splice.
10. Insulate bare wires.

PREREQUISITE EVENTS:

1161-ADMN-1002

1161-MANT-1101

1161-ADMN-1006

RELATED EVENTS:

1161-MANT-1109

1142-MANT-1108

REFERENCES:

1. TC 9-60 COMMUNICATIONS-ELECTRONICS FUNDAMENTALS, BASIC PRINCIPLES OF ALTERNATING CURRENT AND DIRECT CURRENT
2. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
3. TM 2000-15/4 Power System Reference Manual (Jul 68)
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)

- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Multimeter
- Equipment with faulty wire connection(s)

MATERIAL:

- Wire
- Connector(s) (if required)
- Electrical tape

1161-MANT-1109: Solder an electrical connection

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, material and references.

STANDARD: To ensure electrical continuity is established with tensile strength required by the references related to the application.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify VAPOR HAZARD(S).
3. Review references.
4. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
5. Clean component(s) and wire(s).
6. Don PPE.
7. Position component(s) and wire(s).
8. Apply flux (if needed).
9. Heat connection.
10. Apply solder.
11. Allow connection to cool.
12. Dispose of excess used solder (it is hazardous material).
13. Test connection.
14. Insulate bare wires.

PREREQUISITE EVENTS:

1161-ADMN-1006 1161-ADMN-1002 1161-MANT-1101

RELATED EVENTS:

1142-MANT-1109 1161-ADMN-1004 1161-MANT-1108

REFERENCES:

1. TB SIG 222 Solder and Soldering
2. TC 9-60 COMMUNICATIONS-ELECTRONICS FUNDAMENTALS, BASIC PRINCIPLES OF ALTERNATING CURRENT AND DIRECT CURRENT
3. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
4. TM 2000-15/4 Power System Reference Manual (Jul 68)
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Multimeter
- Equipment with faulty wire connection(s)

MATERIAL:

- Wire
- Connector(s) (if required)
- Flux (if needed)
- Solder
- Electrical tape

OTHER SUPPORT REQUIREMENTS: Ventilation is required if this event is performed indoors.

1161-MANT-1191: Comply with a Modification Instruction (MI)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on effected equipment, the effected equipment, a Modification Instruction (MI), parts, tools, forms and references.

STANDARD: To ensure required corrective maintenance action(s) have been performed to restore equipment to operational condition.

PERFORMANCE STEPS:

1. Review MI.
2. Review ERO.
3. Inventory parts from ERO layette.
4. Review equipment technical manuals.
5. Don PPE (if required).
6. Apply modification.
7. Test modification.
8. Document modification.

PREREQUISITE EVENTS: 1161-ADMN-1006

RELATED EVENTS:

1161-ADMN-1008	1161-ADMN-1010	1171-MANT-2191
1141-MANT-2191	1142-MANT-2191	1161-ADMN-1011

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Refrigeration or air conditioning equipment being modified

MATERIAL:

- Modification Instruction (MI)
 - Parts (if required)
 - NAVMC 10245 (Equipment Repair Order [ERO])
 - NAVMC 10524 (Consolidated Engineer Equipment Operation Log and Service Record)
 - NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
 - NAVMC 696D (Motor Vehicle and Engineer Equipment Record Folder)
-

1161-MANT-1211: Perform Preventive Maintenance Checks and Services (PMCS) on a 1.5-Ton Environmental Control Unit (ECU)

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 6 months

MOS PERFORMING: 1161

BILLET: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, parts for scheduled services, forms and references.

STANDARD: To ensure air conditioning equipment is maintained in an operational condition per TM 11080A-OI/1.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review equipment technical manual.
3. Review ERO.
4. Don PPE.
5. Contain (Lockout/Tagout) hazardous energy.
6. Inspect equipment.
7. Service equipment.
8. Document maintenance performed and deficiencies/discrepancies noted.

PREREQUISITE EVENTS:

1161-ADMN-1006 1161-ADMN-1002

RELATED EVENTS:

1161-ADMN-1007 1161-ADMN-1011 1161-ADMN-1010
1161-ADMN-1008

REFERENCES:

1. TM 11080A-OI Operation and Maintenance Manual with Repair Parts List for Air Conditioner, 1.5-Ton, 7,000/14,000 BTU/HR
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Kit, Multi-Capable Maintainer [C7036]
- Environmental Control Unit (ECU), 1.5-Ton, 7,000/14,000 BTU/hr [B0003]

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])
- Parts for scheduled services

1161-MANT-1214: Perform Preventive Maintenance Checks and Services (PMCS) on a 5-Ton Environmental Control Unit (ECU)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

MOS PERFORMING: 1161

BILLETTS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, parts for scheduled services, forms and references.

STANDARD: To ensure air conditioning equipment is maintained in an operational condition per TM 11084A-OI.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review equipment technical manual.
3. Review ERO.
4. Don PPE.
5. Contain (Lockout/Tagout) hazardous energy.
6. Inspect equipment.
7. Service equipment.
8. Document maintenance performed and deficiencies/discrepancies noted.

PREREQUISITE EVENTS:

1161-ADMN-1006 1161-ADMN-1002

RELATED EVENTS:

1161-ADMN-1007 1161-ADMN-1011 1161-ADMN-1010
1161-ADMN-1008

REFERENCES:

1. TM 11084A-OI Air Conditioner, 5 Ton, 60,000
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Kit, Multi-Capable Maintainer [C7036]
- Environmental Control Unit (ECU), 5-Ton, 37,000/60,000 BTU/hr [B0008]

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])
- Parts for scheduled services

1161-MANT-1215: Perform Preventive Maintenance Checks and Services (PMCS) on an 8-Ton Environmental Control Unit (ECU)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

MOS PERFORMING: 1161

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, parts for scheduled services, forms and references.

STANDARD: To ensure air conditioning equipment is maintained in an operational condition per TM 11079A-OI/1.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review equipment technical manual.
3. Review ERO.
4. Don PPE.
5. Contain (Lockout/Tagout) hazardous energy.
6. Inspect equipment.
7. Service equipment.
8. Document maintenance performed and deficiencies/discrepancies noted.

PREREQUISITE EVENTS:

1161-ADMN-1006 1161-ADMN-1002

RELATED EVENTS:

1161-ADMN-1007 1161-ADMN-1011 1161-ADMN-1010
1161-ADMN-1008

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Kit, Multi-Capable Maintainer [C7036]
- Environmental Control Unit (ECU), 8-Ton, 47,000/96,000 BTU/hr [B0010]

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])
- Parts for scheduled services

1161-MANT-1216: Perform Preventive Maintenance Checks and Services (PMCS) on a 3-Ton Environmental Control Unit (ECU)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

MOS PERFORMING: 1161

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, parts for scheduled services, forms and references.

STANDARD: To ensure air conditioning equipment is maintained in an operational condition per TM 11082-OI.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review equipment technical manual.
3. Review ERO.
4. Don PPE.
5. Contain (Lockout/Tagout) hazardous energy.
6. Inspect equipment.
7. Service equipment.
8. Document maintenance performed and deficiencies/discrepancies noted.

PREREQUISITE EVENTS:

1161-ADMN-1006 1161-ADMN-1002

RELATED EVENTS:

1161-ADMN-1007 1161-ADMN-1011 1161-ADMN-1010
1161-ADMN-1008

REFERENCES:

1. TM 11082A-OI Air Conditioner, 3 Ton, 36,000
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Kit, Multi-Capable Maintainer [C7036]
- Environmental Control Unit (ECU), 3-Ton, 31,000/36,000 BTU/hr [B0014]

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])
- Parts for scheduled services

1161-MANT-1234: Perform Preventive Maintenance Checks and Services (PMCS) on a 3/4-Ton Environmental Control Unit (ECU)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

MOS PERFORMING: 1161

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, tools, parts for scheduled services, forms and references.

STANDARD: To ensure air conditioning equipment is maintained in an operational condition per TM 11453-OI/1.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review equipment technical manual.
3. Review ERO.
4. Don PPE.
5. Contain (Lockout/Tagout) hazardous energy.
6. Inspect equipment.
7. Service equipment.
8. Document maintenance performed and deficiencies/discrepancies noted.

PREREQUISITE EVENTS:

1161-ADMN-1006 1161-ADMN-1002

RELATED EVENTS:

1161-ADMN-1007 1161-ADMN-1011 1161-ADMN-1010
1161-ADMN-1008

REFERENCES:

1. TM 11453-OI/1 Operation/Maintenance Manual with Repair Parts List for Environmental Control Unit, 9,000 BTU/HR (9K ECU)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Kit, Multi-Capable Maintainer [C7036]
- Environmental Control Unit (ECU), 3/4-Ton, 9,000 BTU/hr [B0074]

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])
- Parts for scheduled services

1161-MANT-1275: Perform Preventive Maintenance Checks and Services (PMCS) on a VM405 MAX EL 4,500 BTU/HR Enhanced Refrigeration Unit (ERU)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

MOS PERFORMING: 1161

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, a 120/208VAC 60Hz 3-Phase electrical power source, tools, parts for scheduled services, forms and references.

STANDARD: To ensure air conditioning equipment is maintained in an operational condition per TM 10673A-12/2.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review equipment technical manual.
3. Review ERO.
4. Don PPE.
5. Contain (Lockout/Tagout) hazardous energy.
6. Inspect equipment.
7. Service equipment.
8. Document maintenance performed and deficiencies/discrepancies noted.

PREREQUISITE EVENTS:

1161-ADMN-1006 1161-ADMN-1002

RELATED EVENTS:

1161-ADMN-1010 1161-ADMN-1011 1161-ADMN-1008
1161-ADMN-1007

REFERENCES:

1. TM 10673A-12/2 Enhanced Refrigeration Unit
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Kit, Multi-Capable Maintainer [C7036]
- VM405 MAX EL 4,500 BTU/hr Enhanced Refrigeration Unit (ERU) [B1645]

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])
- Parts for scheduled services

OTHER SUPPORT REQUIREMENTS: 120/208VAC 60Hz 3-Phase electrical power source (normally a 10kW MEP-803A Tactical Quiet Generator)

1161-MANT-1311: Diagnose a 1.5-Ton Environmental Control Unit (ECU) malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, the inoperable equipment, tools, forms and references.

STANDARD: To ensure air conditioning equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FROST BITE HAZARD(S).
3. Review LTI.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Check switches/gauges for correct settings.
9. Determine if malfunction is electrical or mechanical.
10. Isolate faulty circuit(s)/component(s).
11. Determine if circuit/component fault was caused by a defect elsewhere.
12. Determine echelon(s) of maintenance.
13. Document findings (complete LTI/initiate ERO).
14. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1161-ADMN-1002 1161-ADMN-1006 1161-ADMN-1018
1161-MANT-1102 1161-MANT-1101

RELATED EVENTS:

1161-ADMN-1008 1161-MANT-1211 1161-ADMN-1011
1161-ADMN-1010

REFERENCES:

1. TM 11080A-OI Operation and Maintenance Manual with Repair Parts List for Air Conditioner, 1.5-Ton, 7,000/14,000 BTU/HR
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Anti-Static Wrist Strap
- Faulty, 1.5-Ton Environmental Control Unit (ECU) [B0003] or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA Section 608 Type II Technician Certificate.

1161-MANT-1314: Diagnose a 5-Ton Environmental Control Unit (ECU) malfunction

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, the inoperable equipment, tools, forms and references.

STANDARD: To ensure air conditioning equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).

2. Identify FROST BITE HAZARD(S).
3. Review ERO.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Check switches/gauges for correct settings.
9. Determine if malfunction is electrical or mechanical.
10. Isolate faulty circuit(s)/component(s).
11. Determine if circuit/component fault was caused by a defect elsewhere.
12. Determine echelon(s) of maintenance.
13. Document findings (complete LTI/initiate ERO).
14. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1161-ADMN-1002	1161-ADMN-1006	1161-ADMN-1018
1161-MANT-1102	1161-MANT-1101	

RELATED EVENTS:

1161-ADMN-1008	1161-MANT-1214	1161-ADMN-1011
1161-ADMN-1010		

REFERENCES:

1. TM 11084A-OI Air Conditioner, 5 Ton, 60,000
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Anti-Static Wrist Strap
- Faulty 5-Ton Environmental Control Unit (ECU) [B0008] or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA Section 608 Type II Technician Certificate.

1161-MANT-1315: Diagnose an 8-Ton Environmental Control Unit (ECU) malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, the inoperable equipment, tools, forms and references.

STANDARD: To ensure air conditioning equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FROST BITE HAZARD(S).
3. Review ERO.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Check switches/gauges for correct settings.
9. Determine if the malfunction is electrical or mechanical.
10. Isolate faulty circuit(s)/component(s).
11. Determine if circuit/component fault was caused by a defect elsewhere.
12. Determine echelon(s) of maintenance.
13. Document findings (complete LTI/initiate ERO).
14. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1161-ADMN-1002	1161-ADMN-1006	1161-ADMN-1018
1161-MANT-1102	1161-MANT-1101	

RELATED EVENTS:

1161-ADMN-1008	1161-MANT-1215	1161-ADMN-1011
1161-ADMN-1010		

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Anti-Static Wrist Strap
- Faulty 8-Ton Environmental Control Unit (ECU) [B0010] or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA Section 608 Type II Technician Certificate.

1161-MANT-1316: Diagnose a 3-Ton Environmental Control Unit (ECU) malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, the inoperable equipment, tools, forms and references.

STANDARD: To ensure air conditioning equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FROST BITE HAZARD(S).
3. Review ERO.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Check switches/gauges for correct settings.
9. Determine if malfunction is electrical or mechanical.
10. Isolate faulty circuit(s)/component(s).
11. Determine if circuit/component fault was caused by a defect elsewhere.
12. Determine echelon(s) of maintenance.
13. Document findings (complete LTI/initiate ERO).
14. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1161-ADMN-1006	1161-MANT-1101	1161-ADMN-1002
1161-ADMN-1018	1161-MANT-1102	

RELATED EVENTS:

1161-ADMN-1008	1161-MANT-1216	1161-ADMN-1011
1161-ADMN-1010		

REFERENCES:

1. TM 11082A-OI Air Conditioner, 3 Ton, 36,000
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Anti-Static Wrist Strap
- Faulty 3-Ton Environmental Control Unit (ECU) [B0014] or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA Section 608 Type II Technician Certificate.

1161-MANT-1334: Diagnose a 3/4-Ton Environmental Control Unit (ECU) malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, the inoperable equipment, tools, forms and references.

STANDARD: To ensure air conditioning equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FROST BITE HAZARD(S).
3. Review ERO.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Check switches/gauges for correct settings.
9. Determine if malfunction is electrical or mechanical.
10. Isolate faulty circuit(s)/component(s).
11. Determine if circuit/component fault was caused by a defect elsewhere.
12. Determine echelon(s) of maintenance.
13. Document findings (complete LTI/initiate ERO).
14. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1161-MANT-1101	1161-MANT-1102	1161-ADMN-1018
1161-ADMN-1006	1161-ADMN-1002	

RELATED EVENTS:

1161-ADMN-1008	1161-MANT-1234	1161-ADMN-1011
1161-ADMN-1010		

REFERENCES:

1. TM 11453-OI/1 Operation/Maintenance Manual with Repair Parts List for Environmental Control Unit, 9,000 BTU/HR (9K ECU)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Anti-Static Wrist Strap
- Faulty 3/4-Ton Environmental Control Unit (ECU) [B0074] or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA Section 608 Type II Technician Certificate.

1161-MANT-1375: Diagnose a VM405 MAX EL 4,500 BTU/HR Enhanced Refrigeration Unit (ERU) malfunction

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, the inoperable equipment, tools, forms and references.

STANDARD: To ensure air conditioning equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).

2. Identify FROST BITE HAZARD(S).
3. Review ERO.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure equipment is grounded.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Check switches/gauges for correct settings.
9. Determine if malfunction is electrical or mechanical.
10. Isolate faulty circuit(s)/component(s).
11. Determine if circuit/component fault was caused by a defect elsewhere.
12. Determine echelon(s) of maintenance.
13. Document findings (complete LTI/initiate ERO).
14. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1161-MANT-1101	1161-MANT-1102	1161-ADMN-1018
1161-ADMN-1006	1161-ADMN-1002	

RELATED EVENTS:

1161-ADMN-1008	1161-MANT-1275	1161-ADMN-1011
1161-ADMN-1010		

REFERENCES:

1. TM 10673A-10/1 Enhanced Refrigeration Unit
2. TM 10673A-12/2 Enhanced Refrigeration Unit
3. TM 10673A-30P/3 Enhanced Refrigeration Unit
4. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
5. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Faulty VM405 MAX EL 4,500 BTU/HR Enhanced Refrigeration Unit (ERU) [B1645] or components

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA Section 608 Type II Technician Certificate.

1161-MANT-1396: Diagnose an Automotive Air Conditioner malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a Limited Technical Inspection (LTI) on inoperable equipment, the inoperable equipment, tools, forms and references.

STANDARD: To ensure air conditioning equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Identify ELECTRIC SHOCK HAZARD(S).
2. Identify FROST BITE HAZARD(S).
3. Review ERO.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
7. Check switches for correct settings.
8. Determine if malfunction is electrical or mechanical.
9. Isolate faulty circuit(s)/component(s).
10. Determine if circuit/component fault was caused by a defect elsewhere.
11. Determine echelon(s) of maintenance.
12. Document findings (complete LTI/initiate ERO).
13. Initiate EROSL (if required).

PREREQUISITE EVENTS:

1161-MANT-1101	1161-MANT-1102	1161-ADMN-1016
1161-ADMN-1006	1161-ADMN-1002	

RELATED EVENTS:

1161-ADMN-1008	1161-ADMN-1011	1161-ADMN-1010
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REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Faulty Automotive Air Conditioner

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA Section 609 Technician Certificate.

1161-MANT-1401: Repair an Environmental Control Unit (ECU) mechanical system

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with equipment technical manual(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FROST BITE HAZARD(S).
3. Review ERO.
4. Inventory parts from ERO layette.
5. Review equipment technical manuals.
6. Don PPE.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Recover refrigerant (if necessary).
9. Remove faulty part(s).
10. Prepare area(s) for new part(s).
11. Attach new part(s), making necessary adjustments.
12. Vacuum test refrigerant system (if needed).
13. Recharge refrigerant system (if needed).
14. Test repairs.
15. Document repairs.

PREREQUISITE EVENTS:

1161-ADMN-1018	1161-MANT-1103	1161-MANT-1104
1161-MANT-1105	1161-MANT-1107	1161-MANT-1102
1161-MANT-1106		

RELATED EVENTS:

1161-ADMN-1006	1161-ADMN-1008	1161-ADMN-1011
1161-MANT-1211	1161-MANT-1214	1161-MANT-1215
1161-MANT-1403	1161-MANT-1234	1161-MANT-1311
1161-MANT-1314	1161-MANT-1315	1161-MANT-1316
1161-MANT-1334	1161-MANT-1216	

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools

2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Degraded/deadlined Environmental Control Unit (ECU)

MATERIAL:

- Refrigerant (if needed)
- Repair parts
- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required to test repairs.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA Section 608 Type II Technician Certificate.

1161-MANT-1402: Repair a Refrigeration Unit mechanical system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with TM 10673A-10/1.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FROST BITE HAZARD(S).
3. Review ERO.
4. Inventory parts from ERO layette.
5. Review equipment technical manuals.
6. Don PPE.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Recover refrigerant (if necessary).
9. Remove faulty part(s).

10. Prepare area(s) for new part(s).
11. Attach new part(s), making necessary adjustments.
12. Vacuum test refrigerant system (if needed).
13. Recharge refrigerant system (if needed).
14. Test repairs.
15. Document repairs.

PREREQUISITE EVENTS:

1161-MANT-1106	1161-MANT-1107	1161-MANT-1375
1161-MANT-1105	1161-MANT-1102	1161-MANT-1103
1161-MANT-1104	1161-ADMN-1018	

RELATED EVENTS:

1161-ADMN-1006	1161-ADMN-1008	1161-MANT-1404
1161-MANT-1275	1161-ADMN-1011	

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
2. TM 10673A-10/1 Enhanced Refrigeration Unit
3. TM 10673A-12/2 Enhanced Refrigeration Unit
4. TM 10673A-30P/3 Enhanced Refrigeration Unit
5. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Degraded/deadlined VM405 MAX EL 4,500 BTU/HR Enhanced Refrigeration Unit (ERU) [B1645]

MATERIAL:

- Refrigerant (if needed)
- Repair parts
- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required to test repairs.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA Section 608 Type II Technician Certificate.

1161-MANT-1403: Repair an Environmental Control Unit (ECU) electrical system

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with the equipment's technical manual(s).

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review ERO.
3. Inventory parts from ERO layette.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
7. Remove faulty part(s).
8. Prepare area(s) for new part(s).
9. Attach new part(s), making necessary adjustments.
10. Test repairs.
11. Document repairs.

PREREQUISITE EVENTS:

1161-MANT-1101	1161-MANT-1108	1161-MANT-1109
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RELATED EVENTS:

1161-ADMN-1006	1161-ADMN-1008	1161-ADMN-1011
1161-MANT-1211	1161-MANT-1214	1161-MANT-1215
1161-MANT-1401	1161-MANT-1234	1161-MANT-1311
1161-MANT-1314	1161-MANT-1315	1161-MANT-1316
1161-MANT-1334	1161-MANT-1216	

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Anti-Static Wrist Strap
- Degraded/deadlined Environmental Control Unit (ECU)

MATERIAL:

- Repair parts
- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required to test repairs.

1161-MANT-1404: Repair a Refrigeration Unit electrical system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with TM 10673A-10/1.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Review ERO.
3. Inventory parts from ERO layette.
4. Review equipment technical manuals.
5. Don PPE.
6. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
7. Remove faulty part(s).
8. Prepare area(s) for new part(s).
9. Attach new part(s), making necessary adjustments.
10. Test repairs.
11. Document repairs.

PREREQUISITE EVENTS:

1161-MANT-1101	1161-MANT-1375	1161-MANT-1109
1161-MANT-1108		

RELATED EVENTS:

1161-ADMN-1006	1161-ADMN-1008	1161-MANT-1402
1161-MANT-1275	1161-ADMN-1011	

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
2. TM 10673A-10/1 Enhanced Refrigeration Unit
3. TM 10673A-12/2 Enhanced Refrigeration Unit
4. TM 10673A-30P/3 Enhanced Refrigeration Unit
5. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Degraded/deadlined VM405 MAX EL 4,500 BTU/HR Enhanced Refrigeration Unit (ERU) [B1645]

MATERIAL:

- Repair parts
- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

OTHER SUPPORT REQUIREMENTS: Electrical power source may be required to test repairs.

1161-MANT-1496: Repair an Automotive Air Conditioner

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 6 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with the equipment's technical manual(s).

PERFORMANCE STEPS:

1. Identify ELECTRIC SHOCK HAZARD(S).
2. Identify FROST BITE HAZARD(S).
3. Review ERO.
4. Inventory parts from ERO layette.
5. Review equipment technical manuals.
6. Don PPE.
7. Ensure any stored/hazardous energy is dissipated/controlled (Lockout/Tagout).
8. Recover refrigerant (if necessary).
9. Remove faulty part(s).
10. Prepare area(s) for new part(s).
11. Attach new part(s), making necessary adjustments.
12. Vacuum test refrigerant system (if needed).
13. Recharge refrigerant system (if needed).
14. Test repairs.
15. Document repairs.

PREREQUISITE EVENTS:

1161-MANT-1108	1161-ADMN-1016	1161-MANT-1101
1161-MANT-1103	1161-MANT-1104	1161-MANT-1396
1161-MANT-1107	1161-MANT-1109	1161-MANT-1102
1161-MANT-1105	1161-MANT-1106	

RELATED EVENTS:

1161-ADMN-1008	1161-ADMN-1006	1161-MANT-1404
1161-MANT-1402	1161-ADMN-1011	

REFERENCES:

1. TM 10209-10/1 Use and Care of Hand Tools & Measuring Tools
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Vehicle/equipment with degraded air conditioner

MATERIAL:

- Refrigerant (if needed)
- Repair parts
- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA Section 609 Technician Certificate.

1161-XENG-1611: Set up a 1.5-Ton Environmental Control Unit (ECU)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided refrigeration and environmental control support plan and established Course of Action (COA), equipment, and references.

STANDARD: To ensure safe operation of equipment in support of mission requirements and commanders' intent in accordance with TM 11080A-OI.

PERFORMANCE STEPS:

1. Review refrigeration and environmental control support plan and Course of Action (COA).
2. Review references.
3. Reassess operational risk.
4. Don PPE.
5. Prepare site.
6. Set up ECU and accessories, connecting power source.
7. Camouflage equipment and accessories.
8. Provide for security.
9. Perform before operation checks on ECU.
10. Start ECU.
11. Perform during operation checks on ECU.

PREREQUISITE EVENTS: 1161-ADMN-1001

REFERENCES:

1. TM 11080A-OI Operation and Maintenance Manual with Repair Parts List for Air Conditioner, 1.5-Ton, 7,000/14,000 BTU/HR

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Forklift (with capacity to lift ECU)
- Earthmoving equipment (if required to prepare site)
- Electric power generation and distribution equipment
- Environmental Control Unit (ECU), 1.5-Ton [B0003]

MATERIAL: Refrigeration and environmental control support plan with established Course of Action (COA).

UNITS/PERSONNEL:

- MOS 1345 (Engineer Equipment Operator) to prepare site and move ECU
- MOS 1141 (Electrician) to establish electrical power support

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Tactical situation, ORA and other changes encountered at a given site may ultimately determine final COA for equipment set up.

1161-XENG-1614: Set up a 5-Ton Environmental Control Unit (ECU)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided refrigeration and environmental control support plan and established Course of Action (COA), equipment, and references.

STANDARD: To ensure safe operation of equipment in support of mission requirements and commanders' intent in accordance with TM 11084A-OI.

PERFORMANCE STEPS:

1. Review refrigeration and environmental control support plan and Course of Action (COA).
2. Review references.
3. Reassess operational risk.
4. Don PPE.
5. Prepare site.
6. Set up ECU and accessories, connecting power source.
7. Camouflage equipment and accessories.

8. Provide for security.
9. Perform before operation checks on ECU.
10. Start ECU.
11. Perform during operation checks on ECU.

PREREQUISITE EVENTS: 1161-ADMN-1001

REFERENCES:

1. TM 11084A-OI Air Conditioner, 5 Ton, 60,000

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Forklift (with capacity to lift ECU)
- Earthmoving equipment (if required to prepare site)
- Electric power generation and distribution equipment
- Environmental Control Unit (ECU), 5-Ton [B0008]

MATERIAL: Refrigeration and environmental control support plan with established Course of Action (COA).

UNITS/PERSONNEL:

- MOS 1345 (Engineer Equipment Operator) to prepare site and move ECU
- MOS 1141 (Electrician) to establish electrical power support

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Tactical situation, ORA and other changes encountered at a given site may ultimately determine final COA for equipment set up.

1161-XENG-1615: Set up an 8-Ton Environmental Control Unit (ECU)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETTS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided refrigeration and environmental control support plan and established Course of Action (COA), equipment, and references.

STANDARD: To ensure safe operation of equipment in support of mission requirements and commanders' intent in accordance with TM 11079A-OI.

PERFORMANCE STEPS:

1. Review refrigeration and environmental control support plan and Course of Action (COA).
2. Review references.
3. Reassess operational risk.

4. Don PPE.
5. Prepare site.
6. Set up ECU and accessories, connecting power source.
7. Camouflage equipment and accessories.
8. Provide for security.
9. Perform before operation checks on ECU.
10. Start ECU.
11. Perform during operation checks on ECU.

PREREQUISITE EVENTS: 1161-ADMN-1001

REFERENCES:

1. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Forklift (with capacity to lift ECU)
- Earthmoving equipment (if required to prepare site)
- Electric power generation and distribution equipment
- Environmental Control Unit (ECU), 8-Ton [B0010]

MATERIAL: Refrigeration and environmental control support plan with established Course of Action (COA).

UNITS/PERSONNEL:

- MOS 1345 (Engineer Equipment Operator) to prepare site and move ECU
- MOS 1141 (Electrician) to establish electrical power support

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Tactical situation, ORA and other changes encountered at a given site may ultimately determine final COA for equipment set up.

1161-XENG-1616: Set up a 3-Ton Environmental Control Unit (ECU)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided refrigeration and environmental control support plan and established Course of Action (COA), equipment, and references.

STANDARD: To ensure safe operation of equipment in support of mission requirements and commanders' intent in accordance with TM 11082A-OI.

PERFORMANCE STEPS:

1. Review refrigeration and environmental control support plan and Course of Action (COA).
2. Review references.
3. Reassess operational risk.
4. Don PPE.
5. Prepare site.
6. Set up ECU and accessories, connecting power source.
7. Camouflage equipment and accessories.
8. Provide for security.
9. Perform before operation checks on ECU.
10. Start ECU.
11. Perform during operation checks on ECU.

PREREQUISITE EVENTS: 1161-ADMN-1001

REFERENCES:

1. TM 11082A-OI Air Conditioner, 3 Ton, 36,000

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Forklift (with capacity to lift ECU)
- Earthmoving equipment (if required to prepare site)
- Electric power generation and distribution equipment
- Environmental Control Unit (ECU), 3-Ton [B0014]

MATERIAL: Refrigeration and environmental control support plan with established Course of Action (COA).

UNITS/PERSONNEL:

- MOS 1345 (Engineer Equipment Operator) to prepare site and move ECU
- MOS 1141 (Electrician) to establish electrical power support

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Tactical situation, ORA and other changes encountered at a given site may ultimately determine final COA for equipment set up.

1161-XENG-1634: Install a 3/4-Ton Environmental Control Unit (ECU)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

MOS PERFORMING: 1161

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a mission, a structure requiring air conditioning work, an air conditioning plan, a Bill of Materials (BOM), tools, and references.

STANDARD: To ensure air conditioning system upgrades support life support requirements in accordance with commanders' concept of operations, per TM 11453A-OI/1.

PERFORMANCE STEPS:

1. Review references.
2. Don PPE.
3. Install ECU and accessories, connecting power source.
4. Perform before operation checks on ECU.
5. Start ECU.
6. Perform during operation checks on ECU.

PREREQUISITE EVENTS: 1161-ADMN-1001

REFERENCES:

1. TM 11453-OI/1 Operation/Maintenance Manual with Repair Parts List for Environmental Control Unit, 9,000 BTU/HR (9K ECU)

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Forklift (with capacity to lift ECU)
- Electric power generation and distribution equipment
- Environmental Control Unit (ECU), 3/4-Ton [B0074]

UNITS/PERSONNEL:

- MOS 1345 (Engineer Equipment Operator) to lift ECU
- MOS 1141 (Electrician) to establish electrical power support

1161-XENG-1675: Install a VM405 MAX EL 4,500 BTU/HR Enhanced Refrigeration Unit (ERU)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a mission, a structure requiring air conditioning work, an air conditioning plan, a Bill of Materials (BOM), tools, and references.

STANDARD: To ensure air conditioning system upgrades support life support requirements in accordance with commanders' concept of operations, per TM 11453A-OI/1.

PERFORMANCE STEPS:

1. Review references.

2. Don PPE.
3. Install ERU and accessories, connecting power source.
4. Perform before operation checks on ERU.
5. Start ERU.
6. Perform during operation checks on ERU.

PREREQUISITE EVENTS: 1161-ADMN-1001

REFERENCES:

1. TM 10673A-10/1 Enhanced Refrigeration Unit
2. TM 10673A-12/2 Enhanced Refrigeration Unit

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Cooling and Refrigeration Expeditionary Kit (CREK) [B0061]
- Forklift (with capacity to lift ERU)
- Electric power generation and distribution equipment
- VM405 MAX EL 4,500 BTU/HR Enhanced Refrigeration Unit (ERU) [B1645]

UNITS/PERSONNEL:

- MOS 1345 (Engineer Equipment Operator) to lift ERU
 - MOS 1141 (Electrician) to establish electrical power support
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7004. 2000-LEVEL EVENTS

1161-ADMN-2021: Apply safety programs

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided resources and references.

STANDARD: To ensure applicable safety measures are established per the references.

PERFORMANCE STEPS:

1. Review references.
2. Identify equipment safety requirements.
3. Identify personnel safety requirements.
4. Conduct Operational Risk Assessments.
5. Implement safety procedures.
6. Conduct safety awareness training.
7. Evaluate safety programs.
8. Enforce safety regulations.
9. Provide input for/submit required reports.

PREREQUISITE EVENTS:

1161-ADMN-1002 1161-ADMN-1001

RELATED EVENTS:

1141-ADMN-2021 1171-ADMN-2021 1142-ADMN-2021

REFERENCES:

1. MCO 3500.27B Operational Risk Management (ORM) (MAY 2004)
 2. MCO 5100.19E Marine Corps Traffic Safety Program (Drivesafe) (Dec 00)
 3. MCO 5100.29A Marine Corps Safety Program (Jul 04)
 4. MCO 5100.30A Marine Corps Off-Duty and Recreation Safety Program (Oct 01)
 5. MCO 5100.34 Deadline Safety of Use Message Instructions to Suspend Operations of Marine Corps Ground Equipment and Weapons Systems and Safety of Use Alerts (Jan 07)
 6. MCO 5100.8 Marine Corps Occupational Safety and Health (OSH) Policy Order (May 06)
 7. MCO P5102.1B Navy & Marine Corps Mishap and Safety Investigation, Reporting, and Record Keeping Manual (Jan 05)
 8. NAVMC DIR 5100.8 Marine Corps Occupational Safety and Health (OSH) Program Manual (May 06)
 9. UNIT SOP Unit's Standing Operating Procedures
 10. Appropriate Technical Manuals
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1161-ADMN-2022: Apply environmental regulations

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided environmental guidelines, and references.

STANDARD: To ensure adherence to policies in accordance to references.

PERFORMANCE STEPS:

1. Review references.
2. Verify section's compliance with applicable environmental regulations and restrictions.
3. Monitor platoon/section hazardous material disposal program.
4. Maintain hazardous materials storage areas.
5. Maintain Material Safety Data Sheets (MSDS).
6. Report any situations that require reporting.

PREREQUISITE EVENTS: 1161-ADMN-1004

RELATED EVENTS:

1141-ADMN-2022

1171-ADMN-2022

1142-ADMN-2022

REFERENCES:

1. MCO 4450.12A Storage and Handling of Hazardous Materials (Jan 99)
2. MCO P5090.2A Environmental Compliance and Protection Manual (Jul 98)
3. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)
4. OPNAVINST 5090.1C Environmental Readiness Program Manual (Oct 07)
5. UNIT SOP Unit's Standing Operating Procedures

1161-ADMN-2023: Conduct Military Occupational Specialty (MOS) training

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided training resources, records, and references.

STANDARD: To ensure MOS proficiency is maintained per the references.

PERFORMANCE STEPS:

1. Review references.
2. Identify individual training requirements (review T&R Manual and MOS Roadmaps).
3. Identify unit training requirements (review unit METL/Commander's intent).

4. Determine on the job and sustainment training requirements by grade and MOS.
5. Develop lesson plans.
6. Develop training methods/aids/materials (as required).
7. Conduct training.
8. Document training.
9. Encourage use of self-directed study and assist in providing resources.

RELATED EVENTS:

1142-ADMN-2023 1141-ADMN-2023 1171-ADMN-2023

REFERENCES:

1. MCO 1553.3A Unit Training Management (UTM) (Jan 04)
2. MCO 1553.4B Professional Military Education (PME) (Jan 08)
3. MCO 3500.26A Marine Corps Task List (MCTL-2.0)
4. MCRP 3-0A Unit Training Management Guide
5. MCRP 3-0B How to Conduct Training
6. NAVMC 3500.12 Marine Corps Engineer and Utilities Training and Readiness Manual
7. OPNAVINST 1560.10C Administration of the United Services Military Apprenticeship Program (USMAP) (Apr 07)
8. SAT MANUAL Systems Approach to Training (SAT) Manual (Jun 04)
9. UNIT SOP Unit's Standing Operating Procedures

SUPPORT REQUIREMENTS:

OTHER SUPPORT REQUIREMENTS: MOS Roadmaps are located at
<http://www.tecom.usmc.mil/g3/roadmap.htm>.

1161-ADMN-2041: Initiate a Product Quality Deficiency Report (PQDR) (SF 368)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given a defective item, blank forms, and references.

STANDARD: To ensure deficiency is identified to effect corrections per the references.

PERFORMANCE STEPS:

1. Review references.
2. Verify deficiency requires a PQDR.
3. Determine if deficiency is Category I or Category II.
4. Collect data.
5. Establish exhibit controls using DD Forms 1575 and 2332 (if required).
6. Complete PQDR.
7. Submit PQDR per Unit SOP.

RELATED EVENTS:

1141-ADMN-2041 1171-ADMN-2041 1142-ADMN-2041

REFERENCES:

1. MCO 4855.10B Product Quality Deficiency Report (PQDR) (Jan 93)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UNIT SOP Unit's Standing Operating Procedures
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL:

- DD Form 1575 (Suspended Tag - Materiel)
- DD Form 2332 (Product Quality Deficiency Report Exhibit)
- SF 368 (Product Quality Deficiency Report [PQDR])

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Additional information for this event can be found at www.logcom.usmc.mil/pqdr.

1161-ADMN-2051: Establish equipment preventive maintenance schedule

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided equipment records, forms and references.

STANDARD: To ensure preventive maintenance is scheduled per the references.

PERFORMANCE STEPS:

1. Review references.
2. Determine equipment Preventive Maintenance Checks and Services (PMCS) requirements.
3. Audit equipment records.
4. Complete NAVMC 10561.

PREREQUISITE EVENTS: 1161-ADMN-1011

RELATED EVENTS:

1141-ADMN-2051 1171-ADMN-2051 1142-ADMN-2051

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. MCWP 4-11.4 Maintenance Operations
3. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
4. UNIT SOP Unit's Standing Operating Procedures
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL: NAVMC 10561 (Preventive Maintenance Checks and Services (PMCS) Roster)

1161-ADMN-2061: Maintain Pre-Expended Bin (PEB)

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided commander's pre-expended bin, (PEB) authorization and references.

STANDARD: To ensure common, low-cost, high usage parts are continuously available for immediate maintenance/repair of equipment per the references.

PERFORMANCE STEPS:

1. Review references.
2. Identify criteria for items placed in PEB.
3. Validate authorized PEB listing, ensuring it is signed annually by the commander.
4. Identify accountability requirements.
5. Account for parts when issued, ensuring advice code PB is used in documentation for items over \$50 in value.
6. Requisition replacement parts, as required.
7. Roll back/dispose excess items.

RELATED EVENTS:

1141-ADMN-2061 1171-ADMN-2061 1161-ADMN-2061

REFERENCES:

1. MCO P4400.150E Consumer-Level Supply Policy Manual (Jun 99)
2. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
3. UNIT SOP Unit's Standing Operating Procedures
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL: Storage bins

1161-ADMN-2062: Maintain Equipment Repair Order (ERO) parts bins

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided forms, parts storage bins, and references.

STANDARD: To ensure repair parts are available to effect repairs on organic equipment per the references.

PERFORMANCE STEPS:

1. Review the references.
2. Receive repair parts, annotating EROSL, and placing repair parts in appropriate bin.
3. Take corrective action if repair parts do not match EROSL.
4. Maintain EROSL in appropriate bin, inventorying the bin every 2 weeks.
5. Issue repair parts, when all are received, annotating EROSL and ERO per unit's SOP.

RELATED EVENTS:

1161-ADMN-2061 1141-ADMN-2062 1171-ADMN-2062
1142-ADMN-2062

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UNIT SOP Unit's Standing Operating Procedures

SUPPORT REQUIREMENTS:

MATERIAL: Storage bins; Forms

1161-ADMN-2071: Monitor maintenance management reports

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided MIMMS (AIS) reports, supporting documentation, and references.

STANDARD: To ensure accuracy of essential reports per the references.

PERFORMANCE STEPS:

1. Monitor Daily Process Report (DPR).
2. Monitor Daily Transaction Listing (DTL).
3. Monitor Daily SASSY Transactions.
4. Monitor Daily LM2 Report.
5. Monitor Weekly TAM Report.
6. Monitor Weekly Maintenance Exceptions Report.
7. Monitor Weekly Material Report.
8. Monitor Weekly LM2 Report.

9. Monitor Weekly Shop Summary Report.
10. Monitor Class II Reports.

PREREQUISITE EVENTS: 1161-ADMN-1011

REFERENCES:

1. MCBUL 3000 Table of Marine Corps Ground Equipment Resources Reporting
2. MCO 3000.11 Marine Corps Ground Equipment Resources Reporting
3. MCO 4400.16G Uniform Materiel Movement and Issue Priority System (Jun 85)
4. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
5. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
6. UM 4400-124 FMF SASSY Using Unit Procedures
7. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
8. UNIT SOP Unit's Standing Operating Procedures

1161-ADMN-2072: Monitor maintenance related programs

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided equipment and references.

STANDARD: To ensure equipment readiness is maintained to support unit operations.

PERFORMANCE STEPS:

1. Review references.
2. Determine unit's maintenance program requirements.
3. Inspect equipment.
4. Monitor Modification Control program.
5. Monitor Calibration Control program.
6. Monitor New Equipment Warranty program.
7. Monitor Joint Oil Analysis Program (JOAP).
8. Monitor Replacement Evacuation (R&E) program.
9. Monitor Quality Deficiency (QDR) program.
10. Monitor Recoverable Items (WIR) program.
11. Monitor Quality Control (QC) program.
12. Monitor Corrosion Prevention and Control (CPAC) program.
13. Ensure program and equipment records are maintained.

RELATED EVENTS:

1141-ADMN-2072	1142-ADMN-2072	1169-ADMN-2072
1161-ADMN-2073	1161-ADMN-2041	1161-ADMN-2051
1161-ADMN-2071	1171-ADMN-2072	

REFERENCES:

1. MCO 4400.194 Class VII Stock Rotation Program
2. MCO 4731.1A Oil Analysis Program for Ground Equipment (Nov 90)
3. MCO 4733.1B Marine Corps Test, Measurement, and Diagnostic Equipment

- (TMDE) Calibration and Maintenance Program (CAMP) (Jun 99)
4. MCO 4790.18B Corrosion Prevention and Control (CPAC) Program (Jul 04)
 5. MCO P4400.150E Consumer-Level Supply Policy Manual (Jun 99)
 6. MCO P4400.82F Regulated/Controlled Item Management Manual (Feb 85)
 7. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
 8. TI 4733-15/1 Calibration Requirements Test, Measurement and Diagnostic Equipment (TMDE) Calibration and Maintenance Program
 9. TI-4731-14/1C MC Joint Oil Analysis Program
 10. TM 4700-15/1H Ground Equipment Record Procedures
 11. TM 750-245-4 Direct Support, General Support Quality Control Inspector's Inspection Criteria
 12. UNIT SOP Unit's Standing Operating Procedures
 13. Appropriate Technical Manuals

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Some programs listed above may not be required at all units.

1161-ADMN-2073: Inspect maintenance actions (quality control)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided repaired equipment, maintenance forms and references.

STANDARD: To ensure equipment repairs have been completed in accordance with references.

PERFORMANCE STEPS:

1. Review references.
2. Review Equipment Repair Order (ERO).
3. Verify equipment's operational condition.
4. Reject faulty equipment.
5. Verify equipment closeout.
6. Verify completion of maintenance actions.

PREREQUISITE EVENTS: 1161-ADMN-1008

RELATED EVENTS:

1141-ADMN-2073

1142-ADMN-2073

1171-ADMN-2073

1161-ADMN-1011

1161-ADMN-1009

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. TM 750-245-4 Direct Support, General Support Quality Control Inspector's Inspection Criteria

4. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
5. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Repaired equipment

MATERIAL: NAVMC 696D (Motor Vehicle and Engineer Equipment Record Folder)

1161-ADMN-2081: Prepare equipment for embarkation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a mission, equipment, and references.

STANDARD: To ensure the unit's ability to rapidly deploy in accordance with references.

PERFORMANCE STEPS:

1. Review the MDSS II, MAFTG II LOGAIS, and/or JOPES reports.
2. Inspect assigned equipment.
3. Identify Remain Behind Equipment (RBE).
4. Identify Leave Behind Equipment (LBE).
5. Determine safety/environmental considerations.
6. Mark equipment for transportation/embarkation to include LOGMARS labels.
7. Disassemble, stow, pack, and/or prepare equipment for transportation/embarkation.
8. Coordinate with unit embark personnel to ensure that discrepancies with MDSS II, MAGTF II LOGAIS, and or JOPES reports are corrected.

REFERENCES:

1. DODD 4500.9 Transportation and Traffic Management
 2. FM 101-10-1 Organizational, Technical and Logistical Data
 3. JOINT PUB 3-02 Joint Doctrine for Amphibious Operations
 4. MCO P4030.19 Preparing Hazardous Materials for Military Air Shipments
 5. MCO P4600.7 USMC Transportation Manual
 6. MCWP 3-31.5 Ship-to-Shore Movement
 7. MCWP 4-11.3 Transportation Operations
-

1161-MANT-2212: Perform Preventive Maintenance Checks and Services (PMCS) on a 18,000 BTU 400Hz Vertical Air Conditioner

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided equipment, tools, parts for scheduled services, forms and references.

STANDARD: To ensure air conditioning equipment is maintained in an operational condition per the references.

PERFORMANCE STEPS:

1. Review the references.
2. Perform the Preventative Maintenance Checks.
3. Perform the Preventative Maintenance Services.
4. Document maintenance performed.

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Environmental Control Unit, proper tools.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have required EPA Certification.

1161-MANT-2213: Perform Preventive Maintenance Checks and Services (PMCS) on a 36,000 BTU 400Hz Vertical Air Conditioner

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided equipment, tools, parts for scheduled services, forms and references.

STANDARD: To ensure air conditioning equipment is maintained in an operational condition per the references.

PERFORMANCE STEPS:

1. Review the references.
2. Perform the Preventative Maintenance Checks.
3. Perform the Preventative Maintenance Services.
4. Document maintenance performed.

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Environmental Control Unit, proper tools.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have required EPA Certification.

1161-MANT-2218: Perform Preventive Maintenance Checks and Services (PMCS) on an Integrated Trailer/ECU/Generator (ITEG)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided equipment, tools, parts for scheduled services, forms and references.

STANDARD: To ensure equipment is maintained in an operational condition per TM 11490A-OR.

PERFORMANCE STEPS:

1. Identify ELECTROCUTION HAZARD(S).
2. Identify FIRE/EXPLOSION HAZARD(S).
3. Identify CARBON MONOXIDE HAZARD(S).
4. Review equipment technical manuals.
5. Review ERO.
6. Don PPE.
7. Contain (Lockout/Tagout) hazardous energy.
8. Inspect equipment.
9. Service equipment.
10. Document maintenance performed and deficiencies/discrepancies noted.

PREREQUISITE EVENTS:

1161-ADMN-1006 1161-ADMN-1002

RELATED EVENTS:

1161-ADMN-1007 1161-ADMN-1011 1161-ADMN-1010
1161-ADMN-1008

REFERENCES:

1. FP 11490A Integrated Trailer Environmental Control Unit & Generator (ITEG)
2. SI 11490A-OI Warranty Procedures for the Integrated Trailer-ECU-Generator
3. SL-3-11490A Components List for Integrated Trailer, Environmental Control Unit, Generator (ITEG)
4. TM 11490A-OR Operation Manual with Repair Parts List, Integrated Trailer-ECU-Generator (ITEG)
5. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)

SUPPORT REQUIREMENTS:

EQUIPMENT:

- Personal Protective Equipment (PPE)
- Tool Kit, Multi-Capable Maintainer [C7036]
- Integrated Trailer, Environmental Control Unit, Generator (ITEG) [B0018]

MATERIAL:

- NAVMC 10245 (Equipment Repair Order [ERO])
- NAVMC 10925 (Equipment Repair Order Shopping/Transaction List [EROSL])
- NAVMC 10560 (Worksheet for Preventive Maintenance and Technical Inspection for Engineer Equipment [LTI])
- Parts for scheduled services

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Assistance from an Electrician (MOS 1141) is required for PMCS on the generator portion of the ITEG.

1161-MANT-2276: Perform Preventive Maintenance Checks and Services (PMCS) on a 350CUFT Rigid Box Refrigerator

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided equipment, tools, parts for scheduled services, forms and references.

STANDARD: To ensure equipment is maintained in an operational condition per the references.

PERFORMANCE STEPS:

1. Review the references.
2. Perform the Preventative Maintenance Checks.
3. Perform the Preventative Maintenance Services.
4. Document maintenance performed.

PREREQUISITE EVENTS:

1161-ADMN-1011

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
 2. Appropriate Technical Manuals
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1161-MANT-2287: Perform Preventive Maintenance Checks and Services (PMCS) on a Small Remote Air Conditioner Skid Mounting Assembly

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided equipment, tools, parts for scheduled services, forms and references.

STANDARD: To ensure equipment is maintained in an operational condition per the references.

PERFORMANCE STEPS:

1. Review the references.
2. Perform the Preventative Maintenance Checks.
3. Perform the Preventative Maintenance Services.
4. Document maintenance performed.

PREREQUISITE EVENTS: 1161-ADMN-1011

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
 2. Appropriate Technical Manuals
-

1161-MANT-2288: Perform Preventive Maintenance Checks and Services (PMCS) on a Large Remote Air Conditioner Skid Mounting Assembly

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided equipment, tools, parts for scheduled services, forms and references.

STANDARD: To ensure equipment is maintained in an operational condition per the references.

PERFORMANCE STEPS:

1. Review the references.
2. Perform the Preventative Maintenance Checks.
3. Perform the Preventative Maintenance Services.
4. Document maintenance performed.

PREREQUISITE EVENTS:

1161-ADMN-1011

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
 2. Appropriate Technical Manuals
-

1161-MANT-2312: Diagnose an 18,000 BTU 400Hz Vertical Air Conditioner malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an environmental control unit, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Review the references.
2. Determine if the malfunction is electrical or mechanical.
3. Identify the faulty component.
4. Determine if component fault was not caused by a defect elsewhere.
5. Repeat steps 2-4 as required.
6. Record finding and order parts if necessary.

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Electrical power source, PPE, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA certification.

1161-MANT-2313: Diagnose a 36,000 BTU 400Hz Vertical Air Conditioner malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an environmental control unit, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Review the references.
2. Determine if the malfunction is electrical or mechanical.
3. Identify the faulty component.
4. Determine if component fault was not caused by a defect elsewhere.
5. Repeat steps 2-4 as required.
6. Record finding and order parts if necessary.

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
2. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Electrical power source, PPE, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA certification.

1161-MANT-2318: Diagnose an Integrated Trailer/ECU/Generator (ITEG) environmental control unit malfunction

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an environmental control unit, electrical power source, PPE, tools, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references.

STANDARD: To ensure equipment faults are identified in order to initiate corrective action(s).

PERFORMANCE STEPS:

1. Review the references.
2. Determine if the malfunction is electrical or mechanical.
3. Identify the faulty component.
4. Determine if component fault was not caused by a defect elsewhere.
5. Repeat steps 2-4 as required.
6. Record finding and order parts if necessary.

REFERENCES:

1. TM 11490A-OR Operation Manual with Repair Parts List, Integrated Trailer-ECU-Generator (ITEG)

2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UM-4790-5 MIMMS-AIS Field Maintenance Procedures

SUPPORT REQUIREMENTS:

EQUIPMENT: Electrical power source, PPE, test measurement and diagnostic equipment (TMDE), equipment records, forms, and references

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have EPA certification.

1161-MANT-2476: Repair a 350CUFT Rigid Box Refrigerator

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with references.

PERFORMANCE STEPS:

1. Review the references.
2. Review the diagnosis of the fault.
3. Replace/ adjust/ connect/ service faulty parts (as required).
4. Test the repairs.
5. Document repairs.

PREREQUISITE EVENTS:

1161-ADMN-1011

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
 2. Appropriate Technical Manuals
-

1161-MANT-2487: Repair a Small Remote Air Conditioner Skid Mounting Assembly

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with references.

PERFORMANCE STEPS:

1. Review the references.
2. Review the diagnosis of the fault.
3. Replace/ adjust/ connect/ service faulty parts (as required).
4. Test the repairs.
5. Document repairs.

PREREQUISITE EVENTS: 1161-ADMN-1011

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
 2. Appropriate Technical Manuals
-

1161-MANT-2488: Repair a Large Remote Air Conditioner Skid Mounting Assembly

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an Equipment Repair Order (ERO) on degraded/deadlined equipment, the degraded/deadlined equipment, repair parts from ERO layette, tools, forms and references.

STANDARD: To ensure equipment is returned to a functional state to support unit operations in accordance with references.

PERFORMANCE STEPS:

1. Review the references.
2. Review the diagnosis of the fault.
3. Replace/ adjust/ connect/ service faulty parts (as required).
4. Test the repairs.
5. Document repairs.

PREREQUISITE EVENTS: 1161-ADMN-1011

REFERENCES:

1. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
 2. Appropriate Technical Manuals
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1161-XENG-2571: Design an interior heating, ventilation and air conditioning (HVAC) system for a permanent structure

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided construction plans for a building, a list of air conditioning fixtures to be installed, local code requirements, and references.

STANDARD: To ensure life support plan adequately meets mission requirements according to commanders' intent and references.

PERFORMANCE STEPS:

1. Review the construction plans and references.
2. Determine total space of structure.
3. Determine BTU/tons of air to be conditioned/moved.
4. Size HVAC units required.
5. Plot the placement of HVAC units on construction plans.
6. Ensure the HVAC system conforms to the building's requirements.
7. Plot ducts and vents on construction plans.
8. Determine number of personnel required to safely install system.
9. Establish a Bill of Materials (BOM), including safety items.
10. Establish a Course of Action (COA).

REFERENCES:

1. Appropriate Technical Manuals

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: An Advanced Refrigeration and Air Conditioner Technician course is currently not available at a Formal School. Until one is established, this event is MOJT for initial training.

1161-XENG-2612: Set up an 18,000 BTU 400Hz Vertical Air Conditioner

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an air conditioning support plan and established Course of Action (COA), equipment, tools and references.

STANDARD: To ensure safe operation of equipment in support of mission requirements and commanders' intent in accordance with references.

PERFORMANCE STEPS:

1. Review the references.

2. Connect the ECU to a power source.
3. Perform pre-operation checks.
4. Start the ECU.
5. Perform operation checks.
6. Turn off ECU.

REFERENCES:

1. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Environmental Control Unit, power source.

1161-XENG-2613: Set up a 36,000 BTU 400Hz Vertical Air Conditioner

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an air conditioning support plan and established Course of Action (COA), equipment, tools and references.

STANDARD: To ensure safe operation of equipment in support of mission requirements and commanders' intent in accordance with references.

PERFORMANCE STEPS:

1. Review the references.
2. Connect the ECU to a power source.
3. Perform pre-operation checks.
4. Start the ECU.
5. Perform operation checks.
6. Turn off ECU.

REFERENCES:

1. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

EQUIPMENT: Environmental Control Unit, power source.

1161-XENG-2618: Set up an Integrated Trailer/ECU/Generator (ITEG)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: PVT, PFC, LCPL, CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an air conditioning support plan and established Course of Action (COA), equipment, tools and references.

STANDARD: To ensure safe operation of equipment in support of mission requirements and commanders' intent in accordance with references.

PERFORMANCE STEPS:

1. Review the references.
2. Connect the ECU to a power source.
3. Perform pre-operation checks.
4. Start the ECU.
5. Perform operation checks.
6. Turn off ECU.

REFERENCES:

1. TM 11490A-OR Operation Manual with Repair Parts List, Integrated Trailer-ECU-Generator (ITEG)
-

1161-XENG-2641: Direct air conditioning equipment installation/set up

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given a mission, a camp layout, air conditioning equipment, installation crew with tools, and references.

STANDARD: To ensure proper installation of essential life support system(s) per mission requirements and references.

PERFORMANCE STEPS:

1. Review the mission, camp layout, and the technical manuals for the air conditioning equipment being installed.
2. Brief installation crew, answer questions, make assignments, and discuss safety precautions.
3. Observe the installation process, correct deficiencies, and provide guidance in proper procedures.
4. Ensure that safety rules are observed, correct violations, and identify and correct unsafe situations.
5. Ensure that air conditioning equipment is installed on time.

REFERENCES:

1. Appropriate Technical Manuals
-

1161-XENG-2642: Direct refrigeration equipment installation

EVALUATION-CODED: NO **SUSTAINMENT INTERVAL:** 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given a mission, a camp layout, refrigeration equipment, installation crew with tools, and reference.

STANDARD: To ensure proper installation of essential life support system(s) per mission requirements and references.

PERFORMANCE STEPS:

1. Review the mission, camp layout, and the technical manuals for the refrigeration equipment being installed.
2. Brief installation crew, answer questions, make assignments, and discuss safety precautions.
3. Observe the installation process, correct deficiencies, and provide guidance in proper procedures.
4. Ensure that safety rules are observed, correct violations, and identify and correct unsafe situations.
5. Ensure that refrigeration equipment is installed on time.

REFERENCES:

1. TM 10673A-10/1 Enhanced Refrigeration Unit
 2. TM 10673A-12-2 ERU TM Manual
-

1161-XENG-2971: Install interior heating, ventilation and air conditioning (HVAC) system in a permanent structure

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a structure, construction blueprints, tools, a bill of materials (BOM), all materials listed on the BOM, and references.

STANDARD: To ensure proper installation of essential life support system(s) per mission requirements and references.

PERFORMANCE STEPS:

1. Review the blueprints.
2. Review applicable section(s) of the references.
3. Run ducts.
4. Install HVAC equipment.
5. Run electrical wiring.
6. Charge the system with refrigerant.
7. Test the system.

REFERENCES:

1. Appropriate Technical Manuals

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have required EPA certification. An Advanced Refrigeration and Air Conditioner Technician course is currently not available at a Formal School. Until one is established, this event is MOJT for initial training.

1161-XENG-2972: Install commercial split unit air conditioning system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a structure, construction blueprints, tools, a bill of materials (BOM), all materials listed on the BOM, and references.

STANDARD: To ensure proper installation of essential life support system(s) per mission requirements and references.

PERFORMANCE STEPS:

1. Review blueprints.
2. Review applicable section(s) of references.
3. Run copper tubing.
4. Install external unit.
5. Install internal unit.
6. Run electrical wiring.
7. Charge system with refrigerant.
8. Test system.

RELATED EVENTS: 1161-XENG-2971

REFERENCES:

1. Appropriate Technical Manuals

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have required EPA certification. An Advanced Refrigeration and Air Conditioner Technician course is currently not available at a Formal School. Until one is established, this event is MOJT for initial training.

1161-XENG-2973: Repair interior heating, ventilation and air conditioning (HVAC) system of a permanent structure

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a structure, tools, repair parts, and the references.

STANDARD: To ensure life support system is returned to a functional state to support unit operations in accordance with mission specifications.

PERFORMANCE STEPS:

1. Review the equipment manuals/specifications.
2. Determine if the malfunction is electrical or mechanical.
3. Identify the faulty component.
4. Determine if component fault was not caused by a defect elsewhere.
5. Repeat steps 2-4 as required.
6. Replace/adjust/connect/service faulty parts (as required).
7. Test the repairs.

REFERENCES:

1. Appropriate Technical Manuals

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have required EPA certification. An Advanced Refrigeration and Air Conditioner Technician course is currently not available at a Formal School. Until one is established, this event is MOJT for initial training.

1161-XENG-2976: Direct interior heating, ventilation and air conditioning (HVAC) system installation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a structure, construction blueprints, tools, a bill of materials (BOM), all materials listed on the BOM, and the references.

STANDARD: To ensure proper installation of essential life support system(s) per mission requirements and references.

PERFORMANCE STEPS:

1. Review the blueprints.
2. Inventory the BOM.
3. Brief installation crew.
4. Direct installation crew.
5. Conduct final inspection of installed HVAC system.

REFERENCES:

1. Appropriate Technical Manuals
-

1161-XENG-2977: Direct interior heating, ventilation and air conditioning (HVAC) system repairs

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a structure requiring HVAC system repairs, personnel, tools, materials, and the references.

STANDARD: To ensure life support system is returned to a functional state to support unit operations in accordance with mission specifications.

PERFORMANCE STEPS:

1. Examine the HVAC system needing repairs.
2. Determine safety/code requirements.
3. Determine material requirements.
4. Brief repair crew.
5. Direct repairs.
6. Conduct inspection of repaired HVAC system.

REFERENCES:

1. Appropriate Technical Manuals
-

1161-XENG-2978: Inspect interior heating, ventilation and air conditioning (HVAC) system of a permanent structure

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Refrigeration and Air Conditioning Technician

GRADES: CPL, SGT, SSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided an operational plan, a structure containing a HVAC system, tools, and the references.

STANDARD: To ensure existing life support system(s) adequately sustains mission requirements in accordance with commander's intent and references.

PERFORMANCE STEPS:

1. Review operational plan and references.
2. Find and determine capabilities/serviceability of ducts and vents, recording findings.
3. Find and determine capabilities/serviceability of HVAC system electrical wiring, recording findings.
4. Determine size of structure and BTU/Tons required to condition the air, recording findings.

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5. Identify any part of the HVAC system that fails to comply with mission requirements.
6. Analyze findings.
7. List all discrepancies identified, specifying any corrective action(s) required.

REFERENCES:

1. Appropriate Technical Manuals

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Must have required EPA certifications. An Advanced Refrigeration and Air Conditioner Technician course is currently not available at a Formal School. Until one is established, this event is MOJT for initial training.

ENG & UTIL T&R MANUAL

CHAPTER 8

MOS 1169 INDIVIDUAL EVENTS

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ENG & UTIL T&R MANUAL

CHAPTER 8

MOS 1169 INDIVIDUAL EVENTS

8000. PURPOSE. This chapter includes all individual training events for the Utilities Chief. An individual event is an event that a trained Utilities Chief would accomplish in the execution of Mission Essential Tasks (METs). These events are linked to a Service-Level Mission Essential Task. This linkage tailor's individual and collective training for the selected MET. Each event is composed of an individual event title, condition, standard, performance steps, support requirements, and references. Accomplishment and proficiency level required is determined by the event standard.

8001. ADMINISTRATIVE NOTES

1. Individual T&R events are coded for ease of reference. Each event has a 4-4-4 character identifier. The first four digits represent the occupational field or military occupational field (Utilities Chief, or 1169).
2. The second four characters represent the functional or duty area. For example:

ADMN - Administration
XENG - General Engineering

See Appendix A for a complete list of functional areas.

3. The first of the last four characters represent the level (1000 or 2000) and the last three characters the sequence (1001, 2001) of the event. The Utilities Chief individual training events are separated into two levels:

2000 - Core Plus Skills

8002. INDEX OF INDIVIDUAL EVENTS

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1169-XENG-2753	Supervise field water purification/storage/distribution system operation	8-45
1169-XENG-2755	Supervise field hygiene equipment operation	8-46
1169-XENG-2758	Supervise camp sanitation system operation	8-46
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1169-XENG-2853	Supervise field water purification/storage/distribution system recovery	8-48
1169-XENG-2855	Supervise field hygiene equipment recovery	8-49
1169-XENG-2858	Supervise camp sanitation system recovery/closure	8-50
1169-XENG-2961	Supervise interior electrical wiring system installation	8-50
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8003. 2000-LEVEL EVENTS

1169-ADMN-2001: Supervise Operational Risk Management (ORM)

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 6 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a task/mission, a Risk Management Worksheet, and references.

STANDARD: To ensure safety mishaps are mitigated through the use of risk management controls per the references.

PERFORMANCE STEPS:

1. Review task/mission.
2. Review references.
3. Identify hazards, recording them on Risk Management Worksheet.
4. Assess severity and probability of hazards to determine risk levels.
5. Develop risk control measures.
6. Make risk decisions.
7. Supervise implementation of controls.
8. Periodically review task/mission, hazards and controls.

RELATED EVENTS:

1141-ADMN-1001	1142-ADMN-1001	1120-ADMN-2001
1171-ADMN-1001	1161-ADMN-1001	

REFERENCES:

1. DODI 6055.1 DoD Safety and Occupational Health (SOH) Program (Aug 98)
2. MCO 3500.27B Operational Risk Management (ORM) (MAY 2004)
3. MCRP 5-12.1C Risk Management (Feb 01)

SUPPORT REQUIREMENTS:

MATERIAL: Risk Management Worksheet.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Risk assessment is taught at all basic MOS producing courses in the Occupational Field.

1169-ADMN-2002: Administer a Lockout/Tagout program

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 6 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a safety requirement, personnel, equipment, equipment manuals, Lockout/Tagout devices, forms, and references.

STANDARD: To ensure safety procedures are performed to prevent electrical mishaps per the references.

PERFORMANCE STEPS:

1. Review references.
2. Evaluate Lockout/Tagout Program using NAVMC 11402 (annual requirement).
3. Ensure availability of an ample supply of locks and tags.
4. Review/approve Lockout/Tagout Checklists, NAVMC 11403.
5. Maintain Lockout/Tagout Log, NAVMC 11404.
6. Control the issue of Lockout/Tagout devices to authorized workers.
7. Ensure the timely return of Lockout/Tagout devices.

RELATED EVENTS:

1141-ADMN-1002 1171-ADMN-1002 1161-ADMN-1002
1142-ADMN-1002

REFERENCES:

1. 29 CFR 1910.147 Chapter 29, Code of Federal Regulations, Part Number 1910 (Occupational Safety and Health Standards), Standard Number 147 - Control of Hazardous Energy (Lockout/Tagout)
2. NAVMC DIR 5100.8 Marine Corps Occupational Safety and Health (OSH) Program Manual (May 06)
3. UNIT SOP Unit's Standing Operating Procedures
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL:

- Lockout/Tagout devices
- NAVMC 11402 (Lockout/Tagout Program Evaluation)
- NAVMC 11403 (Lockout/Tagout Checklist)
- NAVMC 11404 (Lockout/Tagout Log)

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: NAVMC Dir 5100.8, Chapter 12, provides detailed instructions for this event. Control of hazardous energy (Lockout/Tagout) is taught at all basic MOS producing courses in the Occupational Field.

1169-ADMN-2003: Recover an electric shock victim

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given an electrical mishap involving a potential casualty.

STANDARD: To ensure the performance of proper safety procedures to prevent further injury to personnel.

PERFORMANCE STEPS:

1. Evaluate situation.
2. Send for help.
3. Provide for personal protection.
4. Isolate victim from electrical source.
5. Evaluate victim.
6. Start artificial resuscitation (if necessary).
7. Remain with victim until medical help arrives.
8. Report incident.

RELATED EVENTS:

1141-ADMN-1003	1142-ADMN-1003	1171-ADMN-1003
1120-ADMN-2003	1161-ADMN-1003	

REFERENCES:

1. FM 5-424 Theater of Operations Electrical Systems (Jun 97)
2. MCRP 3-02G First Aid (Dec 02)
3. TM 2000-15/4 Power System Reference Manual (Jul 68)
4. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Recovery of an electric shock victim is taught at all basic MOS producing courses in the Occupational Field.

1169-ADMN-2004: Respond to a hazardous materials spill

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a hazardous material mishap involving potential environmental damage.

STANDARD: To ensure the performance of proper containment procedures to prevent further environmental damage.

PERFORMANCE STEPS:

1. Evacuate immediate area (if necessary).
2. Contain spill.
3. Report spill.
4. Remove uncontaminated material.
5. Dispose of hazardous material.

RELATED EVENTS:

1120-ADMN-2004	1141-ADMN-1004	1171-ADMN-1004
1161-ADMN-1004	1142-ADMN-1004	

REFERENCES:

1. MCO 4450.12A Storage and Handling of Hazardous Materials (Jan 99)
2. MCO P5090.2A Environmental Compliance and Protection Manual (Jul 98)
3. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)
4. UNIT SOP Unit's Standing Operating Procedures

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Responding to a hazardous materials spill is taught at all basic MOS producing courses in the Occupational Field.

1169-ADMN-2005: Administer first aid for chemical ingestion/contact

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a chemical mishap involving a potential casualty, Material Safety Data Sheets (MSDS).

STANDARD: To ensure the performance of proper safety procedures to prevent further injury to personnel.

PERFORMANCE STEPS:

1. Protect yourself and other personnel.
2. Send for help.
3. Review Material Safety Data Sheet (MSDS).
4. Provide for personal protection (PPE) (if required).
5. Give first aid.
6. Remain with victim until medical help arrives.
7. Report the incident.

RELATED EVENTS:

1120-ADMN-2005	1141-ADMN-1005	1171-ADMN-1005
1161-ADMN-1005	1142-ADMN-1005	

REFERENCES:

1. MCRP 3-02G First Aid (Dec 02)

SUPPORT REQUIREMENTS:

EQUIPMENT: Personal Protective Equipment (PPE).

MATERIAL: Material Safety Data Sheet (MSDS) file.

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: First aid for chemical ingestion/contact is taught at all basic MOS producing courses in the Occupational Field.

1169-ADMN-2006: Control publications

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 3 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a unit's Publications Listing (PL) and Table of Organization and Equipment (T/O&E), access to publications websites and management systems, and references.

STANDARD: To ensure required publications are available to maintain section's operational capabilities and readiness per the references.

PERFORMANCE STEPS:

1. Review references.
2. Identify publication requirements based on mission and T/O&E.
3. Audit section's PL.
4. Validate on-hand publications inventory.
5. Inspect section's library for missing or outdated publications.
6. Verify published changes are made to publications.
7. Evaluate control procedures.
8. Evaluate NAVMC 10772 procedures.
9. Correct deficiencies.

RELATED EVENTS:

1141-ADMN-1006	1142-ADMN-1006	1169-ADMN-2012
1171-ADMN-1006	1120-ADMN-2006	1161-ADMN-1006

REFERENCES:

1. MCO 4400.120A Joint Regulation Governing the Use and Application of Uniform Source Maintenance and Recoverability Codes (Mar 03)
2. MCO 5215.1K Marine Corps Directives Management Program
3. MCO 5600.20P Marine Corps Doctrinal Publications System (Nov 06)
4. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
5. MCO P5215.17C The Marine Corps Technical Publications System (Jun 96)
6. MCO P5600.31G Marine Corps Publications and Printing Regulations (Sep 93)
7. SECNAV M-5210.2 Standard Subject Identification Code (SSIC) Manual
8. UNIT SOP Unit's Standing Operating Procedures

SUPPORT REQUIREMENTS:

OTHER SUPPORT REQUIREMENTS: Internet access, with a CAC card, is required in order to complete this event.

1169-ADMN-2007: Supervise equipment SL-3/BII inventories

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided personnel, equipment, and references.

STANDARD: To ensure accountability of all equipment components per the SL-3/BII list and the references.

PERFORMANCE STEPS:

1. Review references.
2. Review item inventory requirements (SL-3 Components List or TM listing Basic Issue Items [BII]).
3. Schedule inventories.
4. Monitor inventories.
5. Ensure inventories are documented (sign inventory sheets).
6. Ensure deficiencies are requisitioned/acquired.

RELATED EVENTS:

1141-ADMN-1007

1142-ADMN-1007

1120-ADMN-2007

1171-ADMN-1007

1161-ADMN-1007

REFERENCES:

1. MCO P4400.150E Consumer-Level Supply Policy Manual (Jun 99)
2. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
3. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
4. UM 4400-124 FMF SASSY Using Unit Procedures
5. UNIT SOP Unit's Standing Operating Procedures

1169-ADMN-2012: Validate a Recommended Change to Technical Publications/Logistics-Maintenance Data Coding (NAVMC 10772)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a completed NAVMC 10772 and the references.

STANDARD: To ensure corrections/improvements to technical publication(s) is submitted per the references.

PERFORMANCE STEPS:

1. Review references.
2. Audit NAVMC 10772.

3. Review affected technical manual to verify recommended change will correct the error/deficiency.
4. If applicable, approve Part II with signature and date.
5. Forward NAVMC 10772 per unit's SOP (on line if applicable).

RELATED EVENTS:

1169-ADMN-2006	1171-ADMN-1012	1161-ADMN-1012
1142-ADMN-1012	1141-ADMN-1012	

REFERENCES:

1. MCO P5215.17C The Marine Corps Technical Publications System (Jun 96)
2. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
3. UNIT SOP Unit's Standing Operating Procedures
4. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

OTHER SUPPORT REQUIREMENTS: Internet access, with a CAC card, may be required in order to complete this event per the Unit SOP. The website used will be <https://pubs.logcom.usmc.mil>.

1169-ADMN-2021: Enforce safety programs

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided resources and references.

STANDARD: To ensure applicable safety measures and procedures are in place per the references.

PERFORMANCE STEPS:

1. Review references.
2. Identify equipment safety requirements.
3. Identify personnel safety requirements.
4. Conduct Operational Risk Assessments.
5. Implement safety procedures.
6. Conduct safety awareness training.
7. Evaluate safety programs.
8. Enforce safety regulations.
9. Provide input for/submit required reports.

PREREQUISITE EVENTS:

1169-ADMN-2002	1169-ADMN-2001
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RELATED EVENTS:

1141-ADMN-2021	1171-ADMN-2021	1161-ADMN-2021
1142-ADMN-2021		

REFERENCES:

1. DOD 6055.1 DOD Occupational Safety and Health (OSH) Program
 2. MCO 3500.27B Operational Risk Management (ORM) (MAY 2004)
 3. MCO 5100.19 W/CH 1-3 Marine Corps Traffic Safety Program (DRIVESAFE)
 4. MCO 5100.29A Marine Corps Safety Program (Jul 04)
 5. MCO 5100.30A Marine Corps Off-Duty and Recreation Safety Program (Oct 01)
 6. MCO 5100.34 Deadline Safety of Use Message Instructions to Suspend Operations of Marine Corps Ground Equipment and Weapons Systems and Safety of Use Alerts (Jan 07)
 7. MCO 5100.8 Marine Corps Occupational Safety and Health (OSH) Policy Order (May 06)
 8. MCO 5104.2 Marine Corps Radiofrequency Electromagnetic Field Personnel Protection Program (Apr 95)
 9. MCO 5104.3A Marine Corps Radiation Safety Program (Jun 03)
 10. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
 11. MCO P5102.1B Navy & Marine Corps Mishap and Safety Investigation, Reporting, and Record Keeping Manual (Jan 05)
 12. NAVMC DIR 5100.8 Marine Corps Occupational Safety and Health (OSH) Program Manual (May 06)
 13. OPNAVINST 5100.23G Navy Safety and Occupational Health (SOH) Program Manual (Dec 05)
 14. UNIT SOP Unit's Standing Operating Procedures
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1169-ADMN-2022: Enforce environmental regulations

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided resources and references.

STANDARD: To ensure environmental policies and procedures are adhered to per the references.

PERFORMANCE STEPS:

1. Review references.
2. Verify section's compliance with applicable environmental regulations and restrictions.
3. Supervise platoon/section hazardous waste/material disposal program.
4. Monitor hazardous materials storage areas.
5. Inventory Material Safety Data Sheets (MSDS).
6. Report any situations that require reporting.
7. Conduct environmental regulations compliance planning for unit field operations.
8. Provide input for unit SOPs and environmental impact statements.

PREREQUISITE EVENTS: 1169-ADMN-2004

RELATED EVENTS:

1141-ADMN-2022 1171-ADMN-2022 1161-ADMN-2022
1142-ADMN-2022

REFERENCES:

1. MCO 4450.12A Storage and Handling of Hazardous Materials (Jan 99)
2. MCO P5090.2A Environmental Compliance and Protection Manual (Jul 98)
3. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)
4. OPNAVINST 5090.1C Environmental Readiness Program Manual (Oct 07)
5. UNIT SOP Unit's Standing Operating Procedures

1169-ADMN-2023: Direct Military Occupational Specialty (MOS) training program

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided training resources, records, and references.

STANDARD: To ensure MOS proficiency is maintained per the references.

PERFORMANCE STEPS:

1. Review references.
2. Identify individual training requirements (review T&R Manual and MOS Roadmaps).
3. Identify unit training requirements (review unit METL/Commander's intent).
4. Develop training program policies and procedures.
5. Verify on the job and sustainment training requirements by grade and MOS.
6. Plan MOS training program (considering apprenticeship programs).
7. Review lesson plans.
8. Review training methods/aids/materials.
9. Schedule MOS sustainment training.
10. Develop Letter of Instruction (LOI).
11. Ensure training is conducted.
12. Maintain lesson plans.
13. Document training, maintaining individual training records.
14. Evaluate training.
15. Encourage use of self-directed study and assist in providing resources.

RELATED EVENTS:

1141-ADMN-2023 1142-ADMN-2023 1120-ADMN-2023
1171-ADMN-2023 1161-ADMN-2023

REFERENCES:

1. DODD 1322.18 Military Training (Sep 04)
2. MCO 1553.1B The Marine Corps Training and Education System (May 91)
3. MCO 1553.2A Management of Marine Corps Formal Schools and Training Detachments (Nov 03)
4. MCO 1553.3A Unit Training Management (UTM) (Jan 04)

5. MCO 3500.26A Marine Corps Task List (MCTL-2.0)
6. MCO P1553.4 Professional Military Education (PME)
7. MCO P1560.25C Marine Corps Lifelong Learning Program (Dec 99)
8. MCO P3500.72A Marine Corps Ground Training and Readiness (T&R) Program (Apr 05)
9. MCRP 3-0A Unit Training Management Guide
10. MCRP 3-0B How to Conduct Training
11. NAVMC 3500.12 Marine Corps Engineer and Utilities Training and Readiness Manual
12. OPNAVINST 1560.10C Administration of the United Services Military Apprenticeship Program (USMAP) (Apr 07)
13. SAT MANUAL Systems Approach to Training (SAT) Manual (Jun 04)
14. UNIT SOP Unit's Standing Operating Procedures

SUPPORT REQUIREMENTS:

OTHER SUPPORT REQUIREMENTS: MOS Roadmaps are located at
<http://www.tecom.usmc.mil/g3/roadmap.htm>.

1169-ADMN-2031: Brief electrical safety to end users

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a field electrical power generation and distribution system plan, sample warning signs, and references.

STANDARD: To ensure the compliance with established safety directives to prevent injury to personnel per the references.

PERFORMANCE STEPS:

1. Review electrical system plan and references.
2. Identify prohibited electrical equipment.
3. Identify prohibited practices.
4. Identify unsafe conditions.
5. Identify "Off Limit" areas.
6. Identify emergency procedures.
7. Assemble briefing notes and materials.
8. Deliver brief.
9. Supervise electrical safety compliance.

PREREQUISITE EVENTS: 1169-ADMN-2001

RELATED EVENTS:

1120-ADMN-2031

1141-ADMN-2031

1169-ADMN-2021

1169-ADMN-2003

1169-ADMN-2002

REFERENCES:

1. 29 CFR 1910.269 Chapter 29, Code of Federal Regulations, Part Number 1910

- (Occupational Safety and Health Standards), Standard Number 269 -
Electrical Power Generation, Transmission, and Distribution
2. 29 CFR 1910.301-399 Chapter 29, Code of Federal Regulations, Part Number 1910 (Occupational Safety and Health Standards), Subpart S, (Standard Numbers 301-399) - Electrical
 3. DODI 6055.1 DoD Safety and Occupational Health (SOH) Program (Aug 98)
 4. FM 5-424 Theater of Operations Electrical Systems (Jun 97)
 5. MCO 3500.27B Operational Risk Management (ORM) (MAY 2004)
 6. MCO 5100.29A Marine Corps Safety Program (Jul 04)
 7. MCRP 5-12.1C Risk Management (Feb 01)
 8. NAVMC DIR 5100.8 Marine Corps Occupational Safety and Health (OSH) Program Manual (May 06)
 9. NFPA 70 - NEC 2008 National Fire Protection Association (NFPA) National Electrical Code (NEC) - 2008 Edition
 10. TM 11275-15/3D Principal Technical Characteristics of U.S. Marine Corps Engineer Equipment (May 02)
 11. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL: Sample warning signs.

1169-ADMN-2041: Validate a Product Quality Deficiency Report (PQDR) (SF 368)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a completed Product Quality Deficiency Report (PQDR), access to the defective item and references.

STANDARD: To ensure identified deficiency has been correctly annotated on the proper forms per the references.

PERFORMANCE STEPS:

1. Review references.
2. Ensure deficiency requires a PQDR.
3. Determine if deficiency is Category I or Category II.
4. Verify exhibit is controlled (if required).
5. Audit DD Forms 1575 and 2332 (if required).
6. Audit PQDR (SF 368).
7. Ensure PQDR is submitted to the Marine Corps PQDR Screening Point.

RELATED EVENTS:

1141-ADMN-2041

1171-ADMN-2041

1161-ADMN-2041

1142-ADMN-2041

REFERENCES:

1. MCO 4400.120A Joint Regulation Governing the Use and Application of Uniform Source Maintenance and Recoverability Codes (Mar 03)

2. MCO 4400.16G Uniform Materiel Movement and Issue Priority System (Jun 85)
3. MCO 4855.10B Product Quality Deficiency Report (PQDR) (Jan 93)
4. MCO P4400.150E Consumer-Level Supply Policy Manual (Jun 99)
5. MCO P4400.82F Regulated/Controlled Item Management Manual (Feb 85)
6. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
7. UM 4400-124 FMF SASSY Using Unit Procedures
8. UNIT SOP Unit's Standing Operating Procedures
9. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL:

- DD Form 1575 (Suspended Tag - Materiel)
- DD Form 2332 (Product Quality Deficiency Report Exhibit)
- SF 368 (Product Quality Deficiency Report [PQDR])

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Additional information for this event can be found at www.logcom.usmc.mil/pqdr.

1169-ADMN-2051: Supervise preventive maintenance

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment records, maintenance management reports, forms and references.

STANDARD: To ensure maintenance activity processes are properly performed to maintain equipment in an operational status per the reference.

PERFORMANCE STEPS:

1. Review references.
2. Audit NAVMC 10561.
3. Audit maintenance management reports.
4. Determine maintenance priorities.
5. Validate support and test equipment assets and requirements.
6. Assign tasks, briefing personnel on PMCS requirements.
7. Ensure PMCS schedule is followed.
8. Ensure PMCS actions are documented.

RELATED EVENTS:

1141-ADMN-2051	1142-ADMN-2051	1120-ADMN-2051
1171-ADMN-2051	1161-ADMN-2051	

REFERENCES:

1. MCO 4733.1B Marine Corps Test, Measurement, and Diagnostic Equipment (TMDE) Calibration and Maintenance Program (CAMP) (Jun 99)

2. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
3. MCWP 4-11.4 Maintenance Operations
4. TI 4733-15/1 Calibration Requirements Test, Measurement and Diagnostic Equipment (TMDE) Calibration and Maintenance Program
5. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
6. UNIT SOP Unit's Standing Operating Procedures
7. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL: NAVMC 10561 (Preventive Maintenance Checks and Services (PMCS) Roster)

1169-ADMN-2052: Supervise corrective maintenance

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided updated equipment records and maintenance management reports, and references.

STANDARD: To ensure maintenance activity processes are properly performed to restore equipment to an operational status per the reference.

PERFORMANCE STEPS:

1. Review references.
2. Audit the Daily Process Report (DPR) and other maintenance management reports.
3. Identify support and test equipment assets and requirements.
4. Determine maintenance priorities.
5. Assign maintenance tasks.
6. Ensure repairs are made.
7. Ensure repair actions are documented.

RELATED EVENTS: 1120-ADMN-2052

REFERENCES:

1. MCO 4733.1B Marine Corps Test, Measurement, and Diagnostic Equipment (TMDE) Calibration and Maintenance Program (CAMP) (Jun 99)
 2. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
 3. MCWP 4-11.4 Maintenance Operations
 4. TI 4733-15/1 Calibration Requirements Test, Measurement and Diagnostic Equipment (TMDE) Calibration and Maintenance Program
 5. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
 6. UNIT SOP Unit's Standing Operating Procedures
 7. Appropriate Technical Manuals
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1169-ADMN-2061: Supervise section's supply support

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided maintenance-related reports (MIMMS-AIS), appropriate equipment-related publications, and references.

STANDARD: To ensure section readiness in maintained.

PERFORMANCE STEPS:

1. Review references.
2. Coordinate supply support requirements with unit's supply section.
3. Validate equipment SL-3 Using Unit Responsibility Items (UURI) requirements.
4. Provide input for field budget requirements.
5. Supervise execution of allocated funding.
6. Determine maintenance requirements.
7. Determine supply requirements.
8. Determine fuel requirements.
9. Supervise shop/section PEB and repair order layette procedures.
10. Ensure parts, supplies, and fuel are obtained.
11. Supervise shop/section validation/reconciliation procedures.
12. Ensure required documentation is maintained.

RELATED EVENTS: 1120-ADMN-2061

REFERENCES:

1. MCO 4105.2 Marine Corps Warranty Program (Nov 87)
2. MCO 4340.1 Reporting of Missing, Lost, Stolen, or Recovered (MLSR) Government Property (Aug 94)
3. MCO 4400.120A Joint Regulation Governing the Use and Application of Uniform Source Maintenance and Recoverability Codes (Mar 03)
4. MCO 4400.16G Uniform Materiel Movement and Issue Priority System (Jun 85)
5. MCO 4410.9G Assignment of Local Stock Numbers and Criteria for Determining Assignment of National Stock Numbers (Aug 93)
6. MCO 4450.12A Storage and Handling of Hazardous Materials (Jan 99)
7. MCO 4733.1B Marine Corps Test, Measurement, and Diagnostic Equipment (TMDE) Calibration and Maintenance Program (CAMP) (Jun 99)
8. MCO 4790.18B Corrosion Prevention and Control (CPAC) Program (Jul 04)
9. MCO 7510.5A Marine Corps Fraud, Waste, and Abuse (FWA) Oversight, Awareness, Prevention, and Remedies (Aug 86)
10. MCO P4050.38C Personal Effects and Baggage Manual (Apr 01)
11. MCO P4400.150E Consumer-Level Supply Policy Manual (Jun 99)
12. MCO P4400.82F Regulated/Controlled Item Management Manual (Feb 85)
13. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
14. MCO P7100.8K Field Budget Guidance Manual
15. MCO P7300.21 Marine Corps Financial Execution Standard Operating Procedure Manual
16. NAVMC 2664 Financial Guidebook for Commanders

17. SECNAVINST 4355.18A Reporting of Supply Discrepancies (Jan 99)
 18. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
 19. TM 4795-12/1 Organizational Corrosion Prevention and Control Procedures
 20. UM 4400-124 FMF SASSY Using Unit Procedures
 21. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
 22. UNIT SOP Unit's Standing Operating Procedures
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1169-ADMN-2062: Place new equipment in service

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided new equipment, Users Logistics Support Summary (ULSS) or Fielding Plan (FP), and references.

STANDARD: So equipment is supported by maintainers and operators per the references.

PERFORMANCE STEPS:

1. Review the equipment's Users Logistics Support Summary (ULSS) or Fielding Plan (FP).
2. Establish a training plan for the new equipment.
3. Determine licensing requirements.

REFERENCES:

1. MCO P4400.150E Consumer-Level Supply Policy Manual (Jun 99)
 2. UNIT SOP Unit's Standing Operating Procedures
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1169-ADMN-2065: Supervise equipment availability

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided updated equipment records, reports, and references.

STANDARD: To ensure equipment is operational in order to support mission requirements per commanders' intent.

PERFORMANCE STEPS:

1. Identify shortages/excesses.
2. Review readiness.
3. Review priority designator assignments.

4. Review maintenance cycle time.
5. Develop a plan to increase equipment availability.

REFERENCES:

1. MCBUL 3000 Table of Marine Corps Ground Equipment Resources Reporting
2. MCO 3000.11D Marine Corps Automated Readiness Evaluation System (MARES) (Feb 04)
3. MCO 4400.16G Uniform Materiel Movement and Issue Priority System (Jun 85)
4. MCO P4400.150E Consumer-Level Supply Policy Manual (Jun 99)
5. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
6. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
7. UNIT SOP Unit's Standing Operating Procedures

1169-ADMN-2071: Validate maintenance management reports

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided updated MIMMS (AIS) reports, supporting documentation, and references.

STANDARD: To ensure accurate knowledge of the maintenance situation per the references.

PERFORMANCE STEPS:

1. Monitor Daily Process Report (DPR).
2. Monitor Daily Transaction Listing (DTL).
3. Monitor Daily SASSY Transactions.
4. Monitor Daily LM2 Report.
5. Monitor Weekly TAM Report.
6. Monitor Weekly Maintenance Exceptions Report.
7. Monitor Weekly Material Report.
8. Monitor Weekly LM2 Report.
9. Monitor Weekly Shop Summary Report.
10. Monitor Class II Reports.

REFERENCES:

1. MCBUL 3000 Table of Marine Corps Ground Equipment Resources Reporting
 2. MCO 3000.11_ Marine Corps Ground Equipment Resources Reporting
 3. MCO 4400.16G Uniform Materiel Movement and Issue Priority System (Jun 85)
 4. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
 5. TM 4700-15/1H Ground Equipment Record Procedures
 6. UM 4400-124 FMF SASSY Using Unit Procedures
 7. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
 8. UNIT SOP Unit's Standing Operating Procedures
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1169-ADMN-2072: Monitor maintenance related programs

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment and references.

STANDARD: To ensure equipment readiness is maintained to support unit operations.

PERFORMANCE STEPS:

1. Review references.
2. Determine unit's maintenance program requirements.
3. Inspect equipment.
4. Monitor Modification Control program.
5. Monitor Calibration Control program.
6. Monitor New Equipment Warranty program.
7. Monitor Joint Oil Analysis Program (JOAP).
8. Monitor Replacement Evacuation (R&E) program.
9. Monitor Quality Deficiency (QDR) program.
10. Monitor Recoverable Items (WIR) program.
11. Monitor Quality Control (QC) program.
12. Monitor Corrosion Prevention and Control (CPAC) program.
13. Ensure program and equipment records are maintained.

RELATED EVENTS:

1169-ADMN-2041	1169-ADMN-2051	1169-ADMN-2052
1169-ADMN-2065	1171-ADMN-2072	1120-ADMN-2072
1141-ADMN-2072	1142-ADMN-2072	1161-ADMN-2072
1169-ADMN-2071		

REFERENCES:

1. MCO 4400.194 Class VII Stock Rotation Program
2. MCO 4731.1A Oil Analysis Program for Ground Equipment (Nov 90)
3. MCO 4733.1B Marine Corps Test, Measurement, and Diagnostic Equipment (TMDE) Calibration and Maintenance Program (CAMP) (Jun 99)
4. MCO 4790.18B Corrosion Prevention and Control (CPAC) Program (Jul 04)
5. MCO P4400.150E Consumer-Level Supply Policy Manual (Jun 99)
6. MCO P4400.82F Regulated/Controlled Item Management Manual (Feb 85)
7. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
8. TI 4733-15/1 Calibration Requirements Test, Measurement and Diagnostic Equipment (TMDE) Calibration and Maintenance Program
9. TI-4731-14/1C MC Joint Oil Analysis Program
10. TM 4700-15/1H Ground Equipment Record Procedures
11. TM 750-245-4 Direct Support, General Support Quality Control Inspector's Inspection Criteria
12. UNIT SOP Unit's Standing Operating Procedures
13. Appropriate Technical Manuals

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: Some programs listed above may not be required at all units.

1169-ADMN-2073: Manage equipment records

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided equipment, updated records, forms, and references.

STANDARD: To ensure section readiness can be determined per the references.

PERFORMANCE STEPS:

1. Identify records requirements.
2. Manage records.

REFERENCES:

1. MCBUL 3000 Table of Marine Corps Ground Equipment Resources Reporting
 2. MCO 3000.11 Marine Corps Ground Equipment Resources Reporting
 3. MCO 4733.1B Marine Corps Test, Measurement, and Diagnostic Equipment (TMDE) Calibration and Maintenance Program (CAMP) (Jun 99)
 4. MCO 5210.11E Marine Corps Records Management Program (Apr 06)
 5. MCO 5213.7C Marine Corps Forms Management Program (May 90)
 6. MCO P3000.13 Marine Corps Status of Resources and Training System (SORTS)
 7. MCO P4790.1B Marine Corps Integrated Maintenance Management System (MIMMS) Introduction Manual (Mar 89)
 8. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
 9. MCO P4790_1B MIMMS INTRO MANUAL
 10. TI 4733-15/1 Calibration Requirements Test, Measurement and Diagnostic Equipment (TMDE) Calibration and Maintenance Program
 11. TM 4700-15/1H Ground Equipment Record Procedures
 12. UM 4400-120 Asset Tracking for Logistics Supply System Manual
 13. UM 4400-123 FMF SASSY Management Unit Procedures
 14. UM 4400-124 FMF SASSY Using Unit Procedures
 15. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
 16. UNIT SOP Unit's Standing Operating Procedures
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1169-ADMN-2074: Validate Maintenance Shop procedures

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided blank maintenance management checklists and references.

STANDARD: To ensure all functional areas are certified mission capable.

PERFORMANCE STEPS:

1. Review checklists.
2. Gather/review the required checklist references.
3. Inspect shop functional areas.
4. Administer corrective actions, as necessary.

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
2. UNIT SOP Unit's Standing Operating Procedures

MISCELLANEOUS:

ADMINISTRATIVE INSTRUCTIONS: There are numerous Marine Corps websites that have downloadable checklists. However; it is recommend that the checklists used for this event be obtained from local inspectors.

1169-ADMN-2075: Supervise field maintenance

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, environmental impact report, camp layout, equipment, resources, and references.

STANDARD: To ensure maintenance activities are established in an expeditionary environment in accordance with references.

PERFORMANCE STEPS:

1. Review the Operation Order, environmental impact report, camp layout, and references.
2. Plan field maintenance.
3. Determine safety/environmental considerations.
4. Establish field maintenance facility.
5. Establish guidelines for field maintenance facility operation.
6. Supervise equipment maintenance.
7. Supervise records maintenance.
8. Recover field maintenance facility.

REFERENCES:

1. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
 2. TM 4700-15/1H Ground Equipment Record Procedures
 3. UM-4790-5 MIMMS-AIS Field Maintenance Procedures
 4. UNIT SOP Unit's Standing Operating Procedures
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1169-ADMN-2081: Monitor equipment embarkation requirements

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a mission, equipment, and references.

STANDARD: To ensure the unit's ability to rapidly deploy in accordance with references.

PERFORMANCE STEPS:

1. Review the MDSS II, MAFTG II LOGAIS, and/or JOPES reports.
2. Inspect assigned equipment.
3. Identify Remain Behind Equipment (RBE).
4. Identify Leave Behind Equipment (LBE).
5. Determine safety/environmental considerations.
6. Brief personnel.
7. Ensure equipment is marked for transportation/embarkation to include LOGMARS labels.
8. Ensure equipment is disassembled, stowed, packed, and/or prepared for transportation/embarkation.
9. Coordinate with unit embark chief to ensure that discrepancies with MDSS II, MAGTF II LOGAIS, and or JOPES reports are corrected.

REFERENCES:

1. DODD 4500.9 Transportation and Traffic Management
 2. FM 101-10-1 Organizational, Technical and Logistical Data
 3. FM 55-15 Transportation Reference Data
 4. FM 55-9 Unit Air Movement Planning
 5. FMFM 3-1 Command and Staff Action
 6. FMFM 4-6 Movement of Units in Air Force Aircraft
 7. JOINT PUB 3-02 Joint Doctrine for Amphibious Operations
 8. MCO 4610.35 USMC Equipment Characteristics File
 9. MCO P4030.19 Preparing Hazardous Materials for Military Air Shipments
 10. MCO P4600.7 USMC Transportation Manual
 11. MCWP 3-31.5 Ship-to-Shore Movement
 12. MCWP 4-11.3 Transportation Operations
 13. NAVMC/MCO 3000.18 Marine Corps Planner's Manual
 14. TM 4700-15/1H Ground Equipment Record Procedures
 15. TM 4750-15/2 Painting and Registration Marking for Marine Corps Combat and
 16. TM 55-2200-001-12 Application of Blocking, Bracing, and Tie Down Material
-

1169-ADMN-2082: Administer equipment operator licensing program

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided personnel, supporting documentation, and references.

STANDARD: To ensure operators meet the necessary criteria to maintain a current licensing qualification to operate the unit's equipment per the references.

PERFORMANCE STEPS:

1. Determine licensing requirements.
2. Establish a unit licensing program.
3. Monitor licensing program.

REFERENCES:

1. MCO 11240.66_ Standard Licensing Policy for Operators of Military Motor Vehicles
 2. MCO P4790.2C MIMMS Field Procedures Manual (JUL 94)
 3. TM 11275-15/4 Tactical Engineer Equipment Licensing Examiner's Manual (Jun 83)
 4. UNIT SOP Unit's Standing Operating Procedures
-

1169-ADMN-2091: Brief utilities support plan

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given an Operation Order, completed site survey, camp layout, and references.

STANDARD: To ensure current engineer operational picture is updated to assist mission planning, in accordance with references.

PERFORMANCE STEPS:

1. Determine briefing requirements.
2. Gather briefing materials.
3. Present the information.
4. Answer questions (as required).

REFERENCES:

1. FM 101-5 Staff Organization and Operations
 2. MCWP 5-1 Marine Corps Planning Process
-

1169-XENG-2501: Plan a utilities site survey

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given a mission, commander's intent, map, and references.

STANDARD: To ensure Commanders' Critical Information Requirements (CCIR) are answered, in order to plan utilities support in compliance with the mission, commander's intent, and references.

PERFORMANCE STEPS:

1. Review mission, enemy, terrain and weather, troops and fire support available - time available, space, and logistics (METT-TSL).
2. Review commander's intent.
3. Review map.
4. Research CCIRs on available host nation/local vendor support.
5. Research CCIRs on water sources.
6. Research CCIRs for water storage sites.
7. Research CCIRs for hygiene sites.
8. Research CCIRs on waste water disposal.
9. Research CCIRs for refrigeration sites.
10. Research CCIRs for generator sites.
11. Research CCIRs on electrical power distribution requirements.
12. Prioritize CCIRs.

REFERENCES:

1. FM 10-52 Water Supply in Theaters of Operation
 2. FM 10-52-1 Water Supply Point Equipment and Operations
 3. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
 4. FM 5-424 Theater of Operations Electrical Systems (Jun 97)
 5. MCO 3500.27B Operational Risk Management (ORM) (MAY 2004)
 6. MCO P5090.2A Environmental Compliance and Protection Manual (Jul 98)
 7. MCRP 4-11.1D Field Hygiene and Sanitation
 8. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)
 9. MCRP 5-12.1C Risk Management (Feb 01)
 10. MCRP 5-2A Operational Terms and Graphics
 11. MCWP 3-17 Engineer Operations
 12. MCWP 4-11.4 Maintenance Operations
 13. MCWP 4-11.6 Petroleum and Water Logistics Operations
 14. MCWP 5-1 Marine Corps Planning Process
 15. NAVMC DIR 3000.18 Marine Corps Force Deployment Planning and Execution Process Manual
 16. NAVMC DIR 5100.8 Marine Corps Occupational Safety and Health (OSH) Program Manual (May 06)
 17. NAVMED P-5010-5 Manual of Preventive Medicine, Chapter 5, Water Supply Ashore (Nov 90)
 18. NAVMED P-5010-9 PMA Ground Forces, 1991
 19. TB MED 577 Occupational and Environmental Health Sanitary Control and Surveillance of Field Water Supplies
 20. TM 11275-15/3D Principal Technical Characteristics of U.S. Marine Corps Engineer Equipment (May 02)
 21. UNIT T/O&E Unit's Table of Organization and Equipment
-

1169-XENG-2502: Conduct a utilities site survey

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a mission, map, warning order, grid coordinates, compass, personnel, blank Water Reconnaissance Reports (DA 1712R), and references.

STANDARD: To ensure essential elements of information is obtained that supports mission planning, commander's intent, and references.

PERFORMANCE STEPS:

1. Review map, warning order, and references.
2. Brief personnel.
3. Conduct survey.
4. Evaluate site for safety concerns.
5. Evaluate site for environmental concerns.
6. Ensure conditions are evaluated and recorded on Water Reconnaissance Reports (DA 1712R).
7. Evaluate alternate water sources.
8. Evaluate site for camouflage, concealment, and decoys.
9. Evaluate site for Rear Area Security concerns.
10. Develop Site Survey Report.
11. Brief Site Survey to those concerned.
12. Provide input for camp layout.
13. Provide input for engineer portions of operation orders.

REFERENCES:

1. FM 10-52 Water Supply in Theaters of Operation
 2. FM 10-52-1 Water Supply Point Equipment and Operations
 3. FM 20-3 Camouflage
 4. Joint Pub 4-03 Joint Bulk Petroleum and Water Doctrine
 5. MCRP 3-17B Engineer Forms and Reports
 6. MCRP 4-11.1D Field Hygiene and Sanitation
 7. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)
 8. MCRP 5-12.1C Risk Management (Feb 01)
 9. MCWP 3-17 Engineer Operations
 10. MCWP 3-17.4 Engineer Reconnaissance
 11. MCWP 4-11.6 Petroleum and Water Logistics Operations
 12. MCWP 5-1 Marine Corps Planning Process
 13. NAVMC DIR 3000.18 Marine Corps Force Deployment Planning and Execution Process Manual
 14. NAVMED P-5010-5 Manual of Preventive Medicine, Chapter 5, Water Supply Ashore (Nov 90)
 15. TB MED 577 Occupational and Environmental Health Sanitary Control and Surveillance of Field Water Supplies
 16. TB MED 593 Guidelines for Field Waste Management
 17. TC 3-34.489 The Soldier and the Environment
 18. TM 12359A-OD/B Principal Technical Characteristics of Expeditionary Power Systems Equipment (Aug 2008)
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1169-XENG-2503: Conduct a Disaster Relief/Humanitarian Assistance (DR/HA) assessment

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given commander's intent, available intelligence reports/surveys and references.

STANDARD: To ensure essential elements of information is obtained that supports mission planning, commander's intent, and references.

PERFORMANCE STEPS:

1. Review demographics (people, infrastructure, security).
2. Develop Pre-Deployment Site Survey (PDSS) checklist.
3. Assess potable water requirements.
4. Identify water sources.
5. Assess hygiene requirements.
6. Determine electrical power requirements.

RELATED EVENTS:

1169-XENG-2502 1169-XENG-2501

REFERENCES:

1. DODD 2205.2 Humanitarian and Civic Assistance (HCA) Provided in Conjunction with Military Operations (Oct 94)
2. DODD 5100.46 Foreign Disaster Relief (Dec 75)
3. DODI 2205.3 Implementing Procedures for the Humanitarian and Civic Assistance (HCA) Program (Jan 95)
4. FM 10-52 Water Supply in Theaters of Operation
5. FM 10-52-1 Water Supply Point Equipment and Operations
6. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
7. FM 5-424 Theater of Operations Electrical Systems (Jun 97)
8. MCO 3500.27B Operational Risk Management (ORM) (MAY 2004)
9. MCO P5090.2A Environmental Compliance and Protection Manual (Jul 98)
10. MCRP 4-11.1D Field Hygiene and Sanitation
11. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)
12. MCRP 5-12.1C Risk Management (Feb 01)
13. MCWP 3-33.1 MAGTF Civil Military Operations
14. MCWP 3-33.4 Domestic Support Operations
15. MCWP 4-11.6 Petroleum and Water Logistics Operations
16. MCWP 5-1 Marine Corps Planning Process
17. NAVMC DIR 3000.18 Marine Corps Force Deployment Planning and Execution Process Manual
18. NAVMC DIR 5100.8 Marine Corps Occupational Safety and Health (OSH) Program Manual (May 06)
19. NAVMED P-5010-5 Manual of Preventive Medicine, Chapter 5, Water Supply Ashore (Nov 90)
20. NAVMED P-5010-9 PMA Ground Forces, 1991
21. TB MED 577 Occupational and Environmental Health Sanitary Control and

- Surveillance of Field Water Supplies
22. TB MED 593 Guidelines for Field Waste Management
 23. TM 11275-15/3D Principal Technical Characteristics of U.S. Marine Corps Engineer Equipment (May 02)
 24. UNIT T/O&E Unit's Table of Organization and Equipment
 25. USAID FOG U.S. Agency for International Development (USAID) Field Operations Guide (FOG) for Disaster Assessment and Response - Version 4.0 (Sep 05)
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1169-XENG-2521: Plan a field electrical power generation/distribution system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

DESCRIPTION: The Utilities Chief is responsible for developing a support plan that encompasses supplying electrical power generation. A distribution plan is graphically depicted on a drawn schematic over camp layout(s) as a potential Course of Action (COA). The utilities Chief also provides input into Annex D of the Operation Order.

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a warning order requiring a base camp(s), area map(s), area reconnaissance report(s), any environmental impact report(s), camp layout(s) and references.

STANDARD: To ensure proper utilities planning factors support the commander's intent and mission requirements, per the references.

PERFORMANCE STEPS:

1. Review warning order, map(s), reconnaissance report(s), camp layout(s), and references.
2. Identify equipment/personnel requiring electrical support.
3. Determine electrical power generation/distribution equipment requirements, selecting equipment sites.
4. Determine environmental impacts.
5. Plot generation sites on camp layout(s), making provision for traffic.
6. Identify potential impact of weather/climate on electrical power generation/distribution operations.
7. Determine risks, conducting operational risk assessments.
8. Identify "Off Limit" areas (i.e., generator sites, hazardous material sites, etc.).
9. Determine number and type of warning signs required.
10. Schedule Preventive Maintenance Checks and Services (PMCS).
11. Determine POL requirements.
12. Determine camouflage, concealment, and decoy requirements.
13. Determine security requirements.
14. Estimate man-hour requirements, determining number of electricians required to support the mission.
15. Establish operator schedules.
16. Estimate logistical support (truck, forklift, etc.) required.

17. Establish Bill of Materials (BOM) including security, camouflage, environmental, and safety items.
18. Generate work request(s) for any required construction.
19. Establish a Course of Action (COA).
20. Record requirements for input into Annex D of the Operation Order.
21. Brief electrical support plan (if required).

PREREQUISITE EVENTS:

1169-XENG-2502 1169-ADMN-2001

RELATED EVENTS: 1141-XENG-2521

REFERENCES:

1. FM 20-3 Camouflage
2. FM 5-424 Theater of Operations Electrical Systems (Jun 97)
3. MCRP 3-17B Engineer Forms and Reports
4. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)
5. MCWP 3-17 Engineer Operations
6. MCWP 3-17.4 Engineer Reconnaissance
7. MCWP 3-35.6 Desert Operations
8. MCWP 3-41.1 Rear Area Operations
9. MCWP 4-11 Tactical Level Logistics
10. MCWP 4-11.5 SeaBee Operations in the MAGTF
11. MCWP 5-1 Marine Corps Planning Process
12. TC 3-34.489 The Soldier and the Environment
13. TM 12359A-OD/B Principal Technical Characteristics of Expeditionary Power Systems Equipment (Aug 2008)
14. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL:

- Area topographical map(s)
- Electric Smartcards (Figure C-4 of MCWP 3-17.4)
- Area reconnaissance report(s)
- Environmental impact report(s) (if any)
- Camp layout(s)

1169-XENG-2522: Design an electrical distribution panel (Bussbar)

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a known requirement for uninterrupted electrical power and the references.

STANDARD: To ensure fabricated structure safely achieves the desired effect in support of the commander's intent and mission requirements, per the references.

PERFORMANCE STEPS:

1. Determine maximum amperage of electrical distribution grid.
2. Determine size of conductors.
3. Determine size of over current protection.
4. Determine bonding and grounding requirements.
5. Determine remaining construction and electrical materials required.
6. Draw Bussbar design.
7. Establish a Bill of Materials (BOM).

REFERENCES:

1. FM 5-424 Theater of Operations Electrical Systems (Jun 97)

1169-XENG-2541: Plan field refrigeration/air conditioning equipment support

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

DESCRIPTION: The Utilities Chief is responsible for developing a support plan that encompasses supplying refrigeration and air conditioning support. A distribution plan is graphically depicted on a drawn schematic over camp layout(s) as a potential Course of Action (COA).

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given an Operation Order, site survey, camp layout, and references.

STANDARD: To ensure proper utilities planning factors support the commander's intent and mission requirements, per the references.

PERFORMANCE STEPS:

1. Review Operation Order, site survey, and camp layout.
2. Determine safety requirements.
3. Determine environmental requirements.
4. Develop camp layout of refrigeration/air conditioning equipment.
5. Design a plan for installation and operation of field refrigeration/air conditioning equipment.
6. Determine logistical/materiel requirements.
7. Analyze plan for changes.
8. Draw plan over camp layout.
9. Brief plan to those concerned.

REFERENCES:

1. EM 0148 Heaters, Air Conditioners, and Support Equipment
2. MCO 10110.34E USMC Food Service and Subsistence Program
3. NAVMED P-5010 Navy Sanitation
4. NAVSUP P-421 Navy Food Service SOP
5. TM 4120-15/1D Principal Technical Characteristics of US Marine Corps Military Standard Air Conditioners (Environmental Control Units (ECU)) with Supplemental Logistics Data (Jul 97)

6. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)

1169-XENG-2553: Plan field water support

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

DESCRIPTION: The Utilities Chief is responsible for developing a support plan that encompasses supplying potable water. A distribution plan is graphically depicted on a drawn schematic over camp layout(s) as a potential Course of Action (COA). The Utilities Chief also provides input into Appendix 2 to Annex D of the Operation Order.

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a warning order requiring a base camp(s), area map(s), area reconnaissance report(s), water reconnaissance report(s), any environmental impact report(s), camp layout(s) and references.

STANDARD: To ensure proper utilities planning factors support the commander's intent and mission requirements, per the references.

PERFORMANCE STEPS:

1. Review warning order, map(s), reconnaissance report(s), camp layout(s), and references.
2. Identify equipment/personnel requiring water support.
3. Determine water purification/storage/distribution equipment requirements, selecting equipment sites.
4. Determine environmental impacts.
5. Plot equipment sites on camp layout(s).
6. Select water point location(s) making provision for traffic and drainage.
7. Plot water point(s) on camp layout(s).
8. Plot distribution methods on camp layout(s).
9. Identify potential impact of weather/climate on water purification, storage, and distribution operations.
10. Determine risks, conducting operational risk assessments.
11. Identify off limit areas (i.e., generator sites, hazardous material sites, etc.).
12. Determine number and type of warning signs required.
13. Schedule Preventive Maintenance Checks and Services (PMCS).
14. Determine POL requirements.
15. Determine chemical requirements for purification/storage operations.
16. Determine camouflage, concealment, and decoy requirements.
17. Determine security requirements.
18. Estimate man-hour requirements, determining number of water support personnel required to support the mission.
19. Establish operator schedules.
20. Estimate logistical support (truck, forklift, etc.) required.
21. Establish Bill of Materials (BOM) including security, camouflage, environmental, and safety items.

22. Generate work request(s) for any required construction.
23. Establish a Course of Action (COA).
24. Record requirements for input into Appendix 2 to Annex D of the Operation Order (see Joint Pub 4-03).
25. Brief water support plan (if required).

PREREQUISITE EVENTS:

1169-XENG-2502 1169-ADMN-2001

RELATED EVENTS: 1171-XENG-2553

REFERENCES:

1. FM 10-52 Water Supply in Theaters of Operation
2. FM 10-52-1 Water Supply Point Equipment and Operations
3. FM 20-3 Camouflage
4. Joint Pub 4-03 Joint Bulk Petroleum and Water Doctrine
5. MCRP 3-17B Engineer Forms and Reports
6. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)
7. MCWP 3-17 Engineer Operations
8. MCWP 3-17.4 Engineer Reconnaissance
9. MCWP 3-35.6 Desert Operations
10. MCWP 3-41.1 Rear Area Operations
11. MCWP 4-11 Tactical Level Logistics
12. MCWP 4-11.5 SeaBee Operations in the MAGTF
13. MCWP 4-11.6 Petroleum and Water Logistics Operations
14. MCWP 5-1 Marine Corps Planning Process
15. NAVMED P-5010-5 Manual of Preventive Medicine, Chapter 5, Water Supply Ashore (Nov 90)
16. TB MED 577 Occupational and Environmental Health Sanitary Control and Surveillance of Field Water Supplies
17. TC 3-34.489 The Soldier and the Environment
18. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL:

- Area topographical map(s)
- DA Form 1712-Rs (Water Reconnaissance Reports)
- Water Smartcards (Figure C-3 of MCWP 3-17.4)
- Area reconnaissance report(s)
- Environmental impact report(s) (if any)
- Camp layout(s)

1169-XENG-2555: Plan field hygiene equipment support

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

DESCRIPTION: The Utilities Chief is responsible for developing a support plan that encompasses providing hygiene support. A distribution plan is graphically depicted on a drawn schematic over camp layout(s) as a potential Course of Action (COA). The Utilities Chief also provides input into Appendix 6 to Annex Q of the Operation Order.

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a warning order requiring a base camp(s), map(s), reconnaissance report(s), camp layout(s) with water source and distribution points indicated, any environmental impact report(s), known soil type(s) and references.

STANDARD: To ensure proper utilities planning factors support the commander's intent and mission requirements, per the references.

PERFORMANCE STEPS:

1. Review warning order, map(s), reconnaissance report(s), camp layout(s), and references.
2. Identify personnel requiring hygiene support.
3. Determine hygiene equipment requirements, selecting equipment sites and making provisions for traffic and drainage.
4. Determine environmental impacts.
5. Plot equipment sites on camp layout(s).
6. Identify potential impact of weather/climate on hygiene equipment operations.
7. Determine risks, conducting operational risk assessments.
8. Identify "Off Limit" areas (i.e., generator sites, hazardous material sites, etc.).
9. Determine number and type of warning sign(s) required.
10. Schedule Preventive Maintenance Checks and Services (PMCS).
11. Determine POL requirements.
12. Determine chemical requirements for hygiene operations.
13. Determine camouflage, concealment, and decoy requirements.
14. Determine security requirements.
15. Determine laundry/shower schedules for supported units.
16. Estimate man-hour requirements, determining number of water support personnel required to support hygiene mission.
17. Establish operator schedules.
18. Estimate logistical support (truck, forklift, etc.) required.
19. Establish a Bill of Materials (BOM) including security, camouflage, environmental, and safety items.
20. Generate work request(s) for any required construction.
21. Establish a Course of Action (COA).
22. Record requirements for input into Annex D and Appendix 6 to Annex Q of the Operation Order.
23. Brief hygiene equipment support plan (if required).

PREREQUISITE EVENTS:

1169-XENG-2553 1169-ADMN-2001

RELATED EVENTS: 1171-XENG-2555

REFERENCES:

1. FM 20-3 Camouflage
2. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
3. MCRP 3-17B Engineer Forms and Reports
4. MCRP 4-11.1D Field Hygiene and Sanitation
5. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)

6. MCWP 3-17 Engineer Operations
7. MCWP 5-1 Marine Corps Planning Process
8. NAVMED P-5010-9 PMA Ground Forces, 1991
9. TB MED 577 Occupational and Environmental Health Sanitary Control and Surveillance of Field Water Supplies
10. TC 3-34.489 The Soldier and the Environment
11. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL:

- Area topographical map(s)
- Reconnaissance report(s)

- Environmental impact report(s) (if any)
- Camp layout(s) with water source and distribution points indicated

1169-XENG-2558: Plan a field sanitation system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

DESCRIPTION: The Utilities Chief is responsible for developing a support plan that encompasses supplying potable water. A distribution plan is graphically depicted on a drawn schematic over camp layout(s) as a potential Course of Action (COA). The utilities Chief also provides input into Appendix 6 to Annex Q and Annex D of the Operation Order.

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Given a warning order requiring a base camp(s), map(s), reconnaissance report(s), camp layout(s), any environmental impact report(s), known soil type(s) and references.

STANDARD: To ensure proper utilities planning factors support the commander's intent and mission requirements, per the references.

PERFORMANCE STEPS:

1. Review warning order, map(s), reconnaissance report(s), camp layout(s), and references.
2. Identify locations of equipment, devices and facilities to be supported/impacted by sanitation requirements.
3. Determine soil absorption rates.
4. Identify potential impact of weather/climate on sanitation devices.
5. Determine amount of waste water that will be generated.
6. Determine numbers of sanitation devices/facilities (grease traps, head/latrines, garbage pits, and soakage pits) required.
7. Determine environmental impacts.
8. Plot sanitation devices/facilities on camp layout(s), making provisions for traffic.
9. Determine risks, conducting operational risk assessments.

10. Determine number and type of warning signs required.
11. Determine camouflage, concealment, and decoy requirements.
12. Estimate man-hour requirements, determining number of water support personnel required to support sanitation mission.
13. Determine cleaning/inspection/maintenance schedule.
14. Estimate logistical support (truck, forklift, etc.) required.
15. Establish a Bill of Materials (BOM) including camouflage, environmental, and safety items.
16. Generate work request(s) for any required construction.
17. Establish a Course of Action (COA).
18. Record requirements for input into Annex D and Appendix 6 to Annex Q of the Operation Order.
19. Brief sanitation plan (if required).

PREREQUISITE EVENTS:

1169-ADMN-2001 1169-XENG-2555 1169-XENG-2553

RELATED EVENTS: 1171-XENG-2558

REFERENCES:

1. FM 20-3 Camouflage
2. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
3. FM 4-25.12 Unit Field Sanitation Team
4. MCRP 3-17B Engineer Forms and Reports
5. MCRP 4-11.1D Field Hygiene and Sanitation
6. MCRP 4-11B Environmental Considerations in Military Operations (Jun 00)
7. MCWP 3-17 Engineer Operations
8. MCWP 5-1 Marine Corps Planning Process
9. NAVMED P-5010-9 PMA Ground Forces, 1991
10. TB MED 593 Guidelines for Field Waste Management
11. TC 3-34.489 The Soldier and the Environment
12. Appropriate Technical Manuals

SUPPORT REQUIREMENTS:

MATERIAL:

- Area topographical map(s)
- Reconnaissance report(s)
- Environmental impact report(s) (if any)
- Camp layout(s) with equipment, devices and facilities indicated

1169-XENG-2561: Plan an interior electrical wiring system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided construction plans for a building, a list of electrical fixtures/appliances to be installed, local code requirements, and references.

STANDARD: To ensure proper utilities planning factors support mission requirements, per the references.

PERFORMANCE STEPS:

1. Review construction plans, local code, and references.
2. Review list of electrical fixtures/appliances to be installed.
3. Calculate general lighting load.
4. Identify power requirements.
5. Determine code requirements.
6. Size branch circuits.
7. Size over current protection devices.
8. Plot electrical symbols on construction plans.
9. Ensure interior electrical wiring system plan conforms to references and the building's requirements.
10. Establish a Bill of Materials (BOM), including safety items.
11. Establish a Course of Action (COA).

PREREQUISITE EVENTS: 1169-ADMN-2001

RELATED EVENTS:

1169-XENG-2961 1141-XENG-2561 1169-XENG-2962

REFERENCES:

1. FM 5-424 Theater of Operations Electrical Systems (Jun 97)
2. FM 5-553 General Drafting
3. NEC (NFPA 70) National Electrical Code - by National Fire Protection Association
4. TM 5-704 Construction Print Reading in the Field

SUPPORT REQUIREMENTS:

MATERIAL: Construction plans.

1169-XENG-2571: Plan an interior heating, ventilation and air conditioning (HVAC) system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

MOS PERFORMING: 1169

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided construction plans for a building, a list of heating, ventilation and air conditioning criteria for the building, local code requirements, and references.

STANDARD: To ensure proper utilities planning factors support mission requirements, per the references.

PERFORMANCE STEPS:

1. Review construction plans, local code, and the references.
2. Review HVAC criteria.
3. Calculate volume of air to be conditioned.
4. Determine insulation characteristics.
5. Identify tons of air to be conditioned per hour.
6. Determine code requirements.
7. Determine vent and ducting requirements.
8. Plot HVAC system on construction plans.
9. Ensure HVAC system plan conforms to the references and the building's requirements.
10. Determine number of personnel required to install system.
11. Establish a Bill of Materials (BOM), including safety items.
12. Establish a Course of Action (COA).

REFERENCES:

1. FM 5-553 General Drafting
 2. TM 5-704 Construction Print Reading in the Field
 3. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
 4. National Electrical Code
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1169-XENG-2581: Plan an interior plumbing system

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided construction plans for a building, a list of plumbing fixtures to be installed, local code requirements, and references.

STANDARD: To ensure proper utilities planning factors support mission requirements, per the references.

PERFORMANCE STEPS:

1. Review construction plans, local code, and references.
2. Review list of plumbing fixtures/appliances to be installed.
3. Identify plumbing symbols.
4. Determine code requirements.
5. Identify water supply requirements.
6. Identify sanitary drainage requirements.
7. Identify vent requirements.
8. Plot plumbing system/fixtures on construction plans.
9. Estimate man-hour requirements.
10. Determine risks, conducting operational risk assessments.
11. Establish a Bill of Materials (BOM), including safety items.
12. Establish a Course of Action (COA).

PREREQUISITE EVENTS: 1169-ADMN-2001

RELATED EVENTS:

1169-XENG-2987

1171-XENG-2581

1169-XENG-2988

REFERENCES:

1. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
2. FM 5-553 General Drafting
3. TM 5-704 Construction Print Reading in the Field
4. UPC (IAPMO/ANSI) Uniform Plumbing Code - by International Association of Plumbing and Mechanical Officials/American National Standard Institute

SUPPORT REQUIREMENTS:

MATERIAL: Construction plans.

1169-XENG-2621: Supervise field electrical power generation/distribution system installation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, camp layout, equipment, personnel, and references.

STANDARD: To ensure required utilities services are established, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order and camp layout.
2. Review safety requirements.
3. Review environmental requirements.
4. Brief installation crew.
5. Manage electrical power generation/distribution system installation.
6. Inspect installed field electrical power generation/distribution system.

REFERENCES:

1. EM 0086 Generator Sets and Power Units (CD-ROM)
 2. EM 0158 Power Supplies, Light Sets, and Battery Chargers
 3. FM 11-61 Communications-Electronics Fundamentals: Basic Principles, Alternating Current
 4. FM 5-422 Engineer Prime Power Operations
 5. FM 5-424 Theater of Operations Electrical Systems (Jun 97)
 6. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
-

1169-XENG-2622: Monitor ground test set measurements

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided a ground test set and references.

STANDARD: To ensure safety of equipment and personnel per the references.

PERFORMANCE STEPS:

1. Review references.
2. Test ground.
3. Take necessary actions to improve ground.

REFERENCES:

1. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
-

1169-XENG-2641: Supervise field refrigeration/air conditioning equipment installation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, camp layout, equipment, personnel, and references.

STANDARD: To ensure required utilities services are established, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order and camp layout.
2. Review safety requirements.
3. Review environmental requirements.
4. Brief installation crew.
5. Manage field refrigeration/air conditioning equipment installation.
6. Inspect installed field refrigeration/air conditioning equipment.
7. Ensure inspection of installed equipment by preventive medicine personnel.

REFERENCES:

1. EM 0148 Heaters, Air Conditioners, and Support Equipment
2. MCO 10110.34E USMC Food Service and Subsistence Program
3. NAVMED P-5010 Navy Sanitation
4. NAVSUP P-421 Navy Food Service SOP
5. TM 4120-15/1D Principal Technical Characteristics of US Marine Corps Military Standard Air Conditioners (Environmental Control Units (ECU)) with Supplemental Logistics Data (Jul 97)

6. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
-

1169-XENG-2652: Monitor water test equipment measurements

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: FORMAL

CONDITION: Provided water test equipment and references.

STANDARD: To ensure potable water quality is maintained for unit life support requirements per the references.

PERFORMANCE STEPS:

1. Review references.
2. Test water.
3. Take necessary actions to improve product water quality.

REFERENCES:

1. FM 10-52-1 Water Supply Point Equipment and Operations
 2. MCWP 4-11.6 Petroleum and Water Logistics Operations
 3. TB MED 577 Occupational and Environmental Health Sanitary Control and Surveillance of Field Water Supplies
 4. TM 10-6630-222-12&P Water Quality Analysis Set-Purification
-

1169-XENG-2653: Supervise field water purification/storage/distribution system installation

EVALUATION-CODED: NO SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, completed Water Reconnaissance Reports (DA-1712R), camp layout, equipment, personnel, and references.

STANDARD: To ensure required utilities services are established, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order, Water Reconnaissance Report, and camp layout.
2. Review safety requirements.
3. Review environmental requirements.
4. Brief installation crew.
5. Manage field water purification/storage/distribution system installation.

6. Inspect installed field water purification/storage/distribution system.
7. Ensure inspection of installed system by preventive medicine personnel.

REFERENCES:

1. FM 10-52 Water Supply in Theaters of Operation
 2. FM 10-52-1 Water Supply Point Equipment and Operations
 3. MCWP 4-11.6 Petroleum and Water Logistics Operations
 4. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
-

1169-XENG-2655: Supervise field hygiene equipment installation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, camp layout, equipment, personnel, and references.

STANDARD: To ensure required utilities services are established, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order and camp layout.
2. Review safety requirements.
3. Review environmental requirements.
4. Brief installation crew.
5. Manage field hygiene equipment installation.
6. Inspect installed field hygiene equipment.
7. Ensure inspection of installed equipment by preventive medicine personnel.

REFERENCES:

1. EM 0127 Laundry, Bath, and Hygiene Equipment
 2. FM 21-10 Field Hygiene and Sanitation
 3. FM 21-10-1 Unit Field Sanitation
 4. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
 5. FM 5-163 Sewerage
 6. NAVMED P-5010 Navy Sanitation
 7. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
-

1169-XENG-2658: Supervise camp sanitation system installation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, environmental impact report, area map, camp layout, equipment, personnel, and references.

STANDARD: To ensure required utilities services are established, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order, environmental impact report, and camp layout.
2. Review safety requirements.
3. Review environmental requirements.
4. Brief installation crew.
5. Manage installation of sanitation system components.
6. Inspect installed sanitation system.
7. Ensure inspection of installed system by preventive medicine personnel.

REFERENCES:

1. EM 0127 Laundry, Bath, and Hygiene Equipment
 2. FM 21-10 Field Hygiene and Sanitation
 3. FM 21-10-1 Unit Field Sanitation
 4. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
 5. FM 5-163 Sewerage
 6. NAVMED P-5010 Navy Sanitation
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1169-XENG-2721: Supervise field electrical power generation/distribution system operation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation order, camp layout, electrical power generation/distribution system, operators, and references.

STANDARD: To ensure required utilities services are maintained, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation order and camp layout.
2. Inspect installed electrical power generation/distribution system.
3. Review safety concerns.
4. Review environmental concerns.
5. Establish operator schedule.
6. Brief personnel.
7. Monitor operation of generator sets.
8. Monitor operation of floodlight sets.
9. Monitor operation of dummy loads.
10. Monitor electrical distribution system.
11. Ensure electrical loads are balanced.

12. Manage electrical power generation/distribution system operator maintenance.
13. Ensure records/reports are updated/completed.

REFERENCES:

1. EM 0086 Generator Sets and Power Units (CD-ROM)
2. EM 0158 Power Supplies, Light Sets, and Battery Chargers
3. FM 11-61 Communications-Electronics Fundamentals: Basic Principles, Alternating Current
4. FM 5-422 Engineer Prime Power Operations
5. FM 5-424 Theater of Operations Electrical Systems (Jun 97)
6. TM 4700-15/1H Ground Equipment Record Procedures
7. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
8. UNIT SOP Unit's Standing Operating Procedures

1169-XENG-2741: Supervise field refrigeration/air conditioning equipment operation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, camp layout, refrigeration/air conditioning equipment, operators, and references.

STANDARD: To ensure required utilities services are maintained, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order and camp layout.
2. Inspect installed refrigeration/air conditioning equipment.
3. Review safety concerns.
4. Review environmental concerns.
5. Establish operator schedule.
6. Brief personnel.
7. Monitor operation of air conditioning equipment.
8. Monitor operation of ice cream plants.
9. Monitor operation of ice making machines.
10. Monitor operation of refrigeration units.
11. Manage refrigeration/air conditioning equipment operator maintenance.
12. Ensure records/reports are updated/completed.

REFERENCES:

1. EM 0148 Heaters, Air Conditioners, and Support Equipment
2. MCO 10110.34E USMC Food Service and Subsistence Program
3. NAVMED P-5010 Navy Sanitation
4. NAVSUP P-421 Navy Food Service SOP
5. TM 4120-15/1D Principal Technical Characteristics of US Marine Corps Military Standard Air Conditioners (Environmental Control Units (ECU))

- with Supplemental Logistics Data (Jul 97)
6. TM 4700-15/1H Ground Equipment Record Procedures
 7. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
 8. UNIT SOP Unit's Standing Operating Procedures
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1169-XENG-2753: Supervise field water purification/storage/distribution system operation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, completed Water Reconnaissance Reports (DA-1712R), camp layout, water purification/storage/distribution system, operators, and references.

STANDARD: To ensure required utilities services are maintained, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order, Water Reconnaissance Reports, and camp layout.
2. Inspect installed water purification/storage/distribution system.
3. Review safety concerns.
4. Review environmental concerns.
5. Establish operator schedule.
6. Brief personnel.
7. Monitor operation of water purification/storage/distribution system.
8. Monitor operation of water purification equipment.
9. Monitor operation of forward area water point supply systems.
10. Monitor operation of SIXCON module systems.
11. Monitor operation of water pump assemblies.
12. Monitor operation of mobile water chillers.
13. Monitor use of collapsible tanks and bladders.
14. Ensure water quantity and quality meet requirements.
15. Ensure all water production reports and logs are completed and submitted.
16. Manage water purification/storage/distribution equipment operator maintenance.
17. Ensure records/reports are updated/completed.

REFERENCES:

1. FM 10-52 Water Supply in Theaters of Operation
 2. FM 10-52-1 Water Supply Point Equipment and Operations
 3. MCWP 4-11.4 Maintenance Operations
 4. MCWP 4-11.6 Petroleum and Water Logistics Operations
 5. TM 4700-15/1H Ground Equipment Record Procedures (Jul 95)
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1169-XENG-2755: Supervise field hygiene equipment operation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, camp layout, hygiene equipment, operators, and references.

STANDARD: To ensure required utilities services are maintained, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order and camp layout.
2. Inspect installed hygiene equipment.
3. Review safety concerns.
4. Review environmental concerns.
5. Establish operator schedule.
6. Brief personnel.
7. Monitor operation of bare base laundry facilities.
8. Monitor operation of bare base shower facilities.
9. Monitor operation of water heaters.
10. Ensure drainage system is functioning properly.
11. Ensure daily sanitation standards are met.
12. Manage hygiene equipment operator maintenance.
13. Ensure records/reports are updated/completed.

REFERENCES:

1. EM 0127 Laundry, Bath, and Hygiene Equipment
2. FM 21-10 Field Hygiene and Sanitation
3. FM 21-10-1 Unit Field Sanitation
4. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
5. FM 5-163 Sewerage
6. NAVMED P-5010 Navy Sanitation
7. TM 4700-15/1H Ground Equipment Record Procedures
8. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
9. UNIT SOP Unit's Standing Operating Procedures

1169-XENG-2758: Supervise camp sanitation system operation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

25 Nov 09

CONDITION: Given an Operation Order, camp layout, camp sanitation system, personnel, and references.

STANDARD: To ensure required utilities services are maintained, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order and camp layout.
2. Inspect components of the camp sanitation system.
3. Review safety concerns.
4. Review environmental concerns.
5. Coordinate with Preventive Medicine.
6. Monitor operation of camp sanitation system.
7. Identify components needing cleaning/repair/closure.
8. Brief personnel.
9. Monitor system maintenance.

REFERENCES:

1. EM 0127 Laundry, Bath, and Hygiene Equipment
 2. FM 21-10 Field Hygiene and Sanitation
 3. FM 21-10-1 Unit Field Sanitation
 4. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
 5. FM 5-163 Sewerage
 6. NAVMED P-5010 Navy Sanitation
 7. UNIT SOP Unit's Standing Operating Procedures
-

1169-XENG-2821: Supervise field electrical power generation/distribution system recovery

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, camp layout, equipment, personnel, and references.

STANDARD: To ensure required utilities services are retrograded, resulting in effective completion of service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order and camp layout.
2. Review safety requirements.
3. Review environmental requirements.
4. Inspect installed field electrical power generation/distribution system.
5. Brief recovery crew.
6. Ensure electrical power generation/distribution system recovery.

REFERENCES:

1. EM 0086 Generator Sets and Power Units (CD-ROM)
2. EM 0158 Power Supplies, Light Sets, and Battery Chargers

3. FM 11-61 Communications-Electronics Fundamentals: Basic Principles, Alternating Current
 4. FM 5-422 Engineer Prime Power Operations
 5. FM 5-424 Theater of Operations Electrical Systems (Jun 97)
 6. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
-

1169-XENG-2841: Supervise field refrigeration/air conditioning equipment recovery

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, camp layout, equipment, personnel, and references.

STANDARD: To ensure required utilities services are retrograded, resulting in effective completion of service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order and camp layout.
2. Review safety requirements.
3. Review environmental requirements.
4. Inspect installed field refrigeration/air conditioning equipment.
5. Brief recovery crew.
6. Ensure field refrigeration/air conditioning equipment recovery.

REFERENCES:

1. EM 0148 Heaters, Air Conditioners, and Support Equipment
 2. MCO 10110.34E USMC Food Service and Subsistence Program
 3. NAVMED P-5010 Navy Sanitation
 4. NAVSUP P-421 Navy Food Service SOP
 5. TM 4120-15/1D Principal Technical Characteristics of US Marine Corps Military Standard Air Conditioners (Environmental Control Units (ECU)) with Supplemental Logistics Data (Jul 97)
 6. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
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1169-XENG-2853: Supervise field water purification/storage/distribution system recovery

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, completed Water Reconnaissance Reports (DA-1712R), camp layout, equipment, personnel, and references.

STANDARD: To ensure required utilities services are retrograded, resulting in effective completion of service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order, Water Reconnaissance Report, and camp layout.
2. Review safety requirements.
3. Review environmental requirements.
4. Inspect installed field water purification/storage/distribution system.
5. Brief recovery crew.
6. Ensure field water purification/storage/distribution system recovery.

REFERENCES:

1. FM 10-52 Water Supply in Theaters of Operation
 2. FM 10-52-1 Water Supply Point Equipment and Operations
 3. MCWP 4-11.6 Petroleum and Water Logistics Operations
-

1169-XENG-2855: Supervise field hygiene equipment recovery

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, camp layout, equipment, personnel, and references.

STANDARD: To ensure required utilities services are retrograded, resulting in effective completion of service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order and camp layout.
2. Review safety requirements.
3. Review environmental requirements.
4. Inspect installed field hygiene equipment.
5. Brief recovery crew.
6. Ensure field hygiene equipment recovery.

REFERENCES:

1. EM 0127 Laundry, Bath, and Hygiene Equipment
 2. FM 21-10 Field Hygiene and Sanitation
 3. FM 21-10-1 Unit Field Sanitation
 4. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
 5. FM 5-163 Sewerage
 6. NAVMED P-5010 Navy Sanitation
 7. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
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1169-XENG-2858: Supervise camp sanitation system recovery/closure

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given an Operation Order, environmental impact report, area map, camp layout, equipment, personnel, and references.

STANDARD: To ensure required utilities services are established, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review Operation Order, environmental impact report, and camp layout.
2. Review safety requirements.
3. Review environmental requirements.
4. Inspect sanitation system.
5. Brief recovery/closure crew.
6. Ensure sanitation system recovery/closure.
7. Ensure marking of closed sanitation system.
8. Inspect closed/marked sanitation system.
9. Ensure inspection of closed/marked system by preventive medicine personnel.
10. Ensure closed latrine sites are recorded on area map.
11. Forward marked map to those concerned.

REFERENCES:

1. EM 0127 Laundry, Bath, and Hygiene Equipment
 2. FM 21-10 Field Hygiene and Sanitation
 3. FM 21-10-1 Unit Field Sanitation
 4. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
 5. FM 5-163 Sewerage
 6. NAVMED P-5010 Navy Sanitation
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1169-XENG-2961: Supervise interior electrical wiring system installation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

MOS PERFORMING: 1169

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Given a structure, blueprints, electrical plan, personnel, tools, bill of material, materials, and references.

STANDARD: To ensure required utilities services are established, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review blueprints, electrical plan, and bill of material.
2. Determine safety/code requirements.
3. Inventory bill of material.
4. Brief installation crew.
5. Manage installation crew.
6. Conduct final inspection of installed wiring system.

REFERENCES:

1. FM 5-553 General Drafting
 2. TM 5-704 Construction Print Reading in the Field
 3. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
 4. National Electrical Code
-

1169-XENG-2962: Supervise interior electrical wiring system repairs

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

MOS PERFORMING: 1169

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a structure requiring interior electrical wiring system repairs, personnel, tools, materials, and references.

STANDARD: To ensure required utilities services are established, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Examine interior electrical wiring system needing repairs.
2. Determine safety/code requirements.
3. Determine material requirements.
4. Brief repair crew.
5. Manage repairs.
6. Conduct inspection of repaired wiring system.

REFERENCES:

1. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
 2. National Electrical Code
-

1169-XENG-2971: Supervise interior heating, ventilation and air conditioning (HVAC) system installation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

MOS PERFORMING: 1169

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a structure, blueprints, HVAC plan, personnel, tools, bill of material, materials, and references.

STANDARD: To ensure required utilities services are established, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review blueprints, HVAC plan, and bill of material.
2. Determine safety/code requirements.
3. Inventory bill of material.
4. Brief installation crew.
5. Manage installation crew.
6. Conduct final inspection of installed HVAC system.

REFERENCES:

1. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
 2. FM 5-553 General Drafting
 3. TM 5-704 Construction Print Reading in the Field
 4. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
-

1169-XENG-2972: Supervise interior heating, ventilation and air conditioning (HVAC) system repairs

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

MOS PERFORMING: 1169

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a structure requiring HVAC system repairs, personnel, tools, materials, and the references.

STANDARD: To ensure required utilities services are established, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Examine HVAC system needing repairs.
2. Determine safety/code requirements.
3. Determine material requirements.
4. Brief repair crew.

5. Manage repairs.
6. Conduct inspection of repaired HVAC system.

REFERENCES:

1. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
 2. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
-

1169-XENG-2987: Supervise interior plumbing system installation

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

MOS PERFORMING: 1169

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a structure, blueprints, plumbing plan, personnel, tools, bill of material, materials, and references.

STANDARD: To ensure required utilities services are established, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Review blueprints, plumbing plan, and bill of material.
2. Determine safety/code requirements.
3. Inventory bill of material.
4. Brief installation crew.
5. Manage installation crew.
6. Conduct final inspection of installed plumbing system.

REFERENCES:

1. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
 2. FM 5-163 Sewerage
 3. FM 5-553 General Drafting
 4. TM 5-704 Construction Print Reading in the Field
 5. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
 6. National Plumbing Code
-

1169-XENG-2988: Supervise interior plumbing system repairs

EVALUATION-CODED: NO

SUSTAINMENT INTERVAL: 12 months

MOS PERFORMING: 1169

BILLETS: Utilities Chief

GRADES: GYSGT, MSGT, MGYSGT

INITIAL TRAINING SETTING: MOJT

CONDITION: Provided a structure requiring interior plumbing system repairs, personnel, tools, materials, and the references.

STANDARD: To ensure required utilities services are established, resulting in effective service support to the unit, per the references.

PERFORMANCE STEPS:

1. Examine plumbing system needing repairs.
2. Determine safety/code requirements.
3. Determine material requirements.
4. Brief repair crew.
5. Manage repairs.
6. Conduct inspection of repaired plumbing system.

REFERENCES:

1. FM 3-34.471 Plumbing, Pipefitting, and Sewerage
 2. FM 5-163 Sewerage
 3. TM 9406-15 Grounding Procedures for Electromagnetic Interference Control and Safety (Aug 91)
 4. National Plumbing Code
-