

CHAPTER 4



AVIATION ELECTRICIAN'S MATE (AE)

NAVPERS 18068-4F
CH-76

TABLE OF CONTENTS
AVIATION ELECTRICIAN'S MATE (AE)

SCOPE OF RATING	AE-3
GENERAL INFORMATION	AE-4
AVIATION ELECTRICIAN'S MATE INTERMEDIATE LEVEL TECHNICIAN	AE-5
AIRCRAFT ELECTRICAL SYSTEMS	AE-5
AIRCRAFT INSTRUMENTS	AE-6
AIRCRAFT POWER PLANT ELECTRICAL SYSTEMS	AE-6
AUTOMATIC FLIGHT CONTROL SYSTEMS	AE-6
COMPASS AND INERTIAL NAVIGATION SYSTEMS	AE-6
CORROSION CONTROL	AE-6
ELECTRICAL MAINTENANCE	AE-6
MAINTENANCE ADMINISTRATION	AE-7
POWER GENERATION AND DISTRIBUTION SYSTEMS	AE-7
QUALITY ASSURANCE	AE-7
AVIATION ELECTRICIAN'S MATE ORGANIZATIONAL LEVEL TECHNICIAN	AE-9
AIRCRAFT ELECTRICAL SYSTEMS	AE-9
AIRCRAFT INSTRUMENTS	AE-10
AIRCRAFT POWER PLANT ELECTRICAL SYSTEMS	AE-10
AUTOMATIC FLIGHT CONTROL SYSTEMS	AE-10
COMPASS AND INERTIAL NAVIGATION SYSTEMS	AE-10
CORROSION CONTROL	AE-10
ELECTRICAL MAINTENANCE	AE-10
MAINTENANCE ADMINISTRATION	AE-11
POWER GENERATION AND DISTRIBUTION SYSTEMS	AE-11
QUALITY ASSURANCE	AE-11

NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

AVIATION ELECTRICIAN'S MATE (AE)



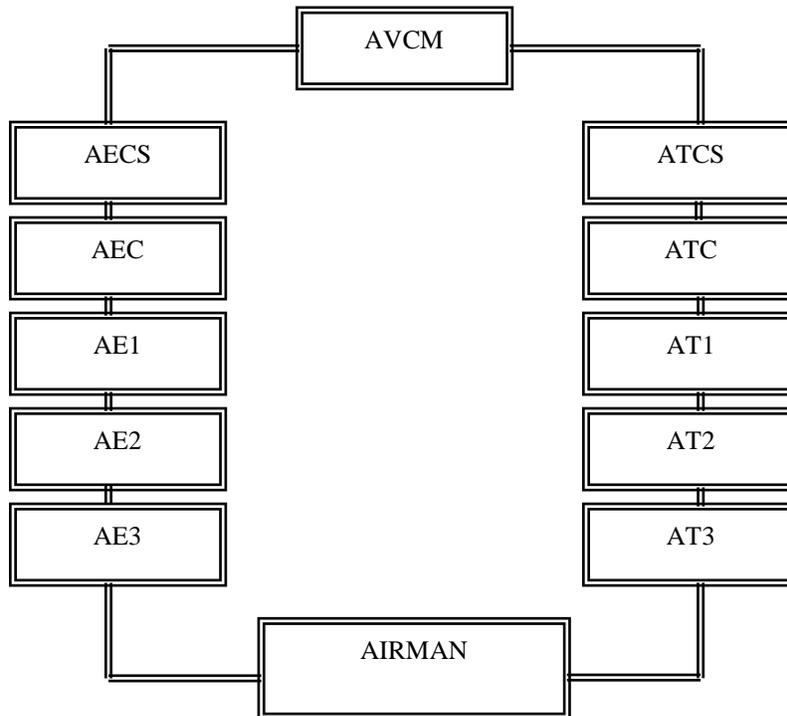
SCOPE OF RATING

Aviation Electrician's Mates (AE) maintain electrical and instrument systems, including power generation, conversion, and distribution systems, aircraft batteries, and interior and exterior lighting; and maintain electrical control of aircraft systems, including hydraulic, landing gear, flight control, utility, and power plant engine, flight and non-instrument-type indicating and warning systems, automatic flight control and stabilization systems, aircraft compass systems, attitude reference systems, inertial navigation systems, and environmental control systems.

This Occupational Standard is to be incorporated in Volume I, Part B, of the Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards (NAVPERS 18068F) as Chapter 4.

GENERAL INFORMATION

CAREER PATTERN



Normal path of advancement to Chief Warrant Officer and Limited Duty Officer categories can be found in OPNAVINST 1420.1.

For rating entry requirements, refer to MILPERSMAN 1306-618.

SAFETY

The observance of Operational Risk Management (ORM) and proper safety precautions in all areas is an integral part of each billet and the responsibility of every Sailor; therefore, it is a universal requirement for all ratings.

Job Title**Aviation Electrician's Mate Intermediate Level Technician****Job Code****001472****Job Family**

Installation, Maintenance, and Repair

NOC

TBD

Short Title (30 Characters)

AVIA I-LEVEL ELECTRICIAN

Short Title (14 Characters)

AVELX TEC I-LV

Pay Plan

Enlisted

Career Field

AE

Other Relationships and Rules

NEC 1591, 4133, 4135, 4805, 6422, 71XX series (exception 7182), 8300, 8362, 8363, 8364, 8391, 84XX series, 8800, and 95XX series

Job Description

Aviation Electrician's Mate Intermediate Level Technicians communicate with Production Control and Quality Assurance work centers and operate according to the Naval Aviation Maintenance Program (NAMP); maintain and inspect a wide array of equipment including: electrical and electronic components, batteries, inertial navigation units, test sets and electronic module test consoles, aircraft instruments, generators and generator power distribution equipment, and night vision goggles; and conduct system troubleshooting procedures using critical thinking skills and deductive reasoning to interpret schematics for electrical and electronic circuits.

DoD Relationship**Group Title**

Aircraft Accessories

DoD Code

160200

O*NET Relationship**Occupation Title**

Avionics Technicians

SOC Code

49-2091.00

Job Family

Installation, Maintenance, and Repair

Skills*Systems Evaluation**Equipment Maintenance**Quality Control Analysis**Installation**Reading Comprehension**Science**Coordination**Judgment and Decision Making**Management of Material Resources**Management of Personnel Resources***Abilities***Written Comprehension**Manual Dexterity**Problem Sensitivity**Deductive Reasoning**Category Flexibility**Visualization**Control Precision**Information Ordering**Reaction Time**Sound Localization***AIRCRAFT ELECTRICAL SYSTEMS****Paygrade****Task Type****Task Statements**

E4	CORE	Assemble aircraft wiring devices (e.g. cannon plugs, ground points, splice points, etc.)
E4	CORE	Assemble aircraft wiring harness system components
E4	CORE	Assemble aircraft wiring harnesses
E4	CORE	Maintain aircraft electrical and electronic emergency systems
E4	CORE	Maintain aircraft electronic system components
E4	CORE	Maintain aircraft wiring harness system components
E4	CORE	Maintain airframe electrical and electronic systems
E4	CORE	Maintain airframe subsystems electrical and electronic components
E4	NON-CORE	Maintain bladefold system components
E4	CORE	Maintain landing gear electrical and electronic components
E4	CORE	Maintain lighting system components
E4	CORE	Maintain liquid quantity system indicators (e.g. fuel, hydraulics, liquid oxygen, etc.)
E4	CORE	Maintain master caution advisory system components

AIRCRAFT INSTRUMENTS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain Flight Director Indicators (FDI) (e.g. Attitude Direction Indicator (ADI), Bearing Distance Heading Indicator (BDHI), etc.)
E4	CORE	Maintain flight instrument (e.g. fuel quantity, hydraulic pressure, exhaust gas temperature, etc.) components
E4	CORE	Maintain liquid quantity system (e.g. fuel, hydraulics, liquid oxygen, etc.) components
E4	CORE	Maintain pitot static system components

AIRCRAFT POWER PLANT ELECTRICAL SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain aircraft power plant electrical and electronic components
E4	CORE	Maintain fuel system components
E4	CORE	Maintain propeller electrical and electronic system components

AUTOMATIC FLIGHT CONTROL SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain flight control system components
E4	CORE	Maintain flight control system wiring
E4	CORE	Maintain flight surface indicating components

COMPASS AND INERTIAL NAVIGATION SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain aircraft Inertial Navigation System (INS) components
E4	CORE	Maintain aircraft Inertial Navigation Systems (INS)
E4	CORE	Maintain aircraft navigation system electrical and electronic components
E4	CORE	Maintain compass system components
E4	CORE	Stow aircraft Inertial Navigation System (INS)
E4	CORE	Stow aircraft Inertial Navigation System (INS) components

CORROSION CONTROL

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Prevent corrosion on aircraft components
E4	CORE	Prevent corrosion on aircraft electrical and electronic components
E4	CORE	Treat corrosion on aircraft components
E4	CORE	Treat corrosion on aircraft electrical and electronic components

ELECTRICAL MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Build aircraft wiring harnesses
E5	NON-CORE	Incorporate Technical Directives (TD)
E4	CORE	Maintain aircraft electrical and electronic emergency system components
E4	CORE	Maintain aircraft wiring
E4	CORE	Maintain aircraft wiring devices (e.g. cannon plugs, ground points, splice points, etc.)

ELECTRICAL MAINTENANCE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain circuit cards
E4	CORE	Maintain Environmental Control System (ECS) components (e.g. control panels, switches, control boxes, etc.)
E4	CORE	Maintain aircraft electrical and electronic system (e.g. aircraft clock, night vision, etc.) components
E4	CORE	Maintain retrograde wiring harnesses
E5	CORE	Perform acceptance inspections
E5	CORE	Perform conditional inspections
E5	CORE	Perform special inspections
E5	CORE	Perform transfer inspections
E5	CORE	Perform zonal inspections

MAINTENANCE ADMINISTRATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Conduct maintenance operations briefs (e.g. aircraft moves, low power turns, production control, workcenter, etc.)
E5	CORE	Document aircraft system maintenance actions
E7	CORE	Manage Production Control (PC) operations
E6	CORE	Update Monthly Maintenance Plans (MMP)

POWER GENERATION AND DISTRIBUTION SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain aircraft batteries
E4	CORE	Maintain aircraft circuit protection devices
E4	CORE	Maintain aircraft electrical and electronic power distribution components
E4	CORE	Maintain aircraft generators
E4	CORE	Maintain aircraft supervisory panels and voltage regulators
E4	CORE	Maintain aircraft transformer rectifiers, converters and inverters
E4	CORE	Maintain Bus Power Control Units (BPCU)
E4	CORE	Maintain Generator Control Units (GCU)
E4	CORE	Maintain generator system (e.g. generator control panel, contactors, bus tie contactors, relay panels, etc.) components
E4	CORE	Stow aircraft batteries
E4	CORE	Transport aircraft batteries

QUALITY ASSURANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E6	CORE	Audit Naval Aviation Maintenance Programs (NAMP)
E5	CORE	Conduct Collateral Duty Inspector (CDI) inspections

QUALITY ASSURANCE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E6	CORE	Conduct Quality Assurance (QA) aircraft inspections
E5	CORE	Supervise Fleet Readiness Center (FRC) electrical and electronic maintenance operations
E6	CORE	Verify Naval Aviation Maintenance Programs (NAMP)

Job Title**Aviation Electrician's Mate Organizational Level Technician****Job Code****001527****Job Family**

Installation, Maintenance, and Repair

NOC

TBD

Short Title (30 Characters)

AVIA O-LEVEL ELECTRICIAN

Short Title (14 Characters)

AVELX TEC O-LV

Pay Plan

Enlisted

Career Field

AE

Other Relationships and Rules

NEC 41XX series, 4805., 7182, 83XX series, 88XX series, and 9549, and 9550

Job Description

Aviation Electrician's Mate Organizational Level Technicians communicate with Maintenance Control and Quality Assurance work centers and operate according to the Naval Aviation Maintenance Program (NAMP); maintain, troubleshoot, repair, and inspect a wide array of electrical and electronic equipment including: aircraft electrical systems, aircraft instrumentation equipment, aircraft power plants related equipment, aircraft airframe related, and aircraft lighting equipment; and conduct system troubleshooting procedures using critical thinking skills and deductive reasoning to interpret schematics for electrical and electronic circuits, and environmental systems.

DoD Relationship**Group Title**

Aircraft Accessories

DoD Code

160200

O*NET Relationship**Occupation Title**

Avionics Technicians

SOC Code

49-2091.00

Job Family

Installation, Maintenance, and Repair

Skills*Systems Evaluation**Equipment Maintenance**Quality Control Analysis**Management of Personnel Resources**Reading Comprehension**Coordination**Judgment and Decision Making**Management of Material Resources**Monitoring**Science***Abilities***Written Comprehension**Deductive Reasoning**Problem Sensitivity**Manual Dexterity**Category Flexibility**Selective Attention**Finger Dexterity**Inductive Reasoning**Oral Expression**Reaction Time***AIRCRAFT ELECTRICAL SYSTEMS****Paygrade**

E4

Task Type

CORE

Task Statements

Maintain aircraft electrical and electronic emergency systems

E4

CORE

Maintain airframe electrical and electronic systems

E4

CORE

Maintain airframe subsystems electrical and electronic components

E4

NON-CORE

Maintain bladefold systems

E4

CORE

Maintain Environmental Control Systems (ECS)

E4

CORE

Maintain flight data recorders

E4

CORE

Maintain landing gear electrical and electronic systems

E4

CORE

Maintain lighting systems

E4

CORE

Maintain liquid quantity systems (e.g. fuel, hydraulics, liquid oxygen, etc.)

E4

CORE

Maintain master caution advisory systems

AIRCRAFT INSTRUMENTS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain Flight Director Indicators (FDI) (e.g. Attitude Direction Indicator (ADI), Bearing Distance Heading Indicator (BDHI), etc.)
E4	CORE	Maintain flight instruments (e.g. fuel quantity, hydraulic pressure, exhaust gas temperature, etc.)
E4	CORE	Maintain pitot static systems

AIRCRAFT POWER PLANT ELECTRICAL SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain aircraft power plant electrical and electronic systems
E4	CORE	Maintain fuel systems
E4	CORE	Maintain propeller electrical and electronic systems

AUTOMATIC FLIGHT CONTROL SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain flight control systems
E4	CORE	Maintain flight surface indicating systems

COMPASS AND INERTIAL NAVIGATION SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain aircraft Inertial Navigation Systems (INS)
E4	CORE	Maintain aircraft navigation electrical and electronic systems
E4	CORE	Maintain compass systems

CORROSION CONTROL

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Prevent corrosion on aircraft electrical and electronic systems
E4	CORE	Prevent corrosion on aircraft systems
E4	CORE	Treat corrosion on aircraft components
E4	CORE	Treat corrosion on aircraft electrical and electronic components
E4	CORE	Treat corrosion on aircraft electrical and electronic systems

ELECTRICAL MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Build aircraft wiring harnesses
E5	NON-CORE	Incorporate Technical Directives (TD)
E4	CORE	Maintain aircraft wiring
E4	CORE	Maintain aircraft wiring devices (e.g. cannon plugs, ground points, splice points, etc.)
E4	CORE	Maintain aircraft wiring harness systems
E4	NON-CORE	Maintain Joint Helmet Mount Cueing Systems (JHMCS)
E4	CORE	Maintain miscellaneous electrical and electronic systems (e.g. aircraft clock, night vision, etc.)

ELECTRICAL MAINTENANCE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain retrograde wiring harnesses
E4	CORE	Perform acceptance inspections
E4	CORE	Perform conditional inspections
E4	CORE	Perform daily inspections
E4	CORE	Perform phase inspections
E4	CORE	Perform special inspections
E4	CORE	Perform transfer inspections
E4	CORE	Perform turnaround inspections
E4	CORE	Perform zonal inspections

MAINTENANCE ADMINISTRATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E7	CORE	Certify aircraft Safe for Flight (SFF)
E5	CORE	Check status of aircraft maintenance actions
E5	CORE	Conduct maintenance operations briefs (e.g. aircraft moves, low power turns, production control, workcenter, etc.)
E5	CORE	Document aircraft system maintenance actions
E7	CORE	Manage Maintenance Control (MC) operations
E6	CORE	Update Monthly Maintenance Plans (MMP)
E5	CORE	Verify Maintenance Data Reports (MDR)

POWER GENERATION AND DISTRIBUTION SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain aircraft batteries
E4	CORE	Maintain aircraft circuit protection devices
E4	CORE	Maintain aircraft electrical and electronic power distribution systems
E4	CORE	Maintain aircraft generators
E4	CORE	Maintain aircraft supervisory panels and voltage regulators
E4	CORE	Maintain aircraft transformer rectifiers, converters and inverters
E4	CORE	Maintain Bus Power Control Units (BPCU)
E4	CORE	Maintain Generator Control Units (GCU)
E4	CORE	Maintain generator systems (e.g. generator control panel, contactors, bus tie contactors, relay panels, etc.)
E4	CORE	Stow aircraft batteries
E4	CORE	Transport aircraft batteries

QUALITY ASSURANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E6	CORE	Audit Naval Aviation Maintenance Programs (NAMP)
E5	CORE	Conduct Collateral Duty Inspector (CDI) inspections

QUALITY ASSURANCE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E6	CORE	Conduct Quality Assurance (QA) aircraft inspections
E6	NON-CORE	Coordinate flight deck and flight line operations
E7	NON-CORE	Manage flight deck and flight line operations
E7	CORE	Manage Functional Check Flight (FCF) inspections
E5	CORE	Supervise aircraft electrical and electronic maintenance operations
E6	CORE	Verify Naval Aviation Maintenance Programs (NAMP)