

CHAPTER 4



AVIATION ELECTRICIAN'S MATE (AE)

NAVPERS 18068F-4G

Change 90

Updated: April 2022

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-7
MAINTENANCE ADMINISTRATION	AE-7
POWER GENERATION AND DISTRIBUTION SYSTEMS	AE-7
QUALITY ASSURANCE	AE-8
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-11
MAINTENANCE ADMINISTRATION	AE-11
POWER GENERATION AND DISTRIBUTION SYSTEMS	AE-11
QUALITY ASSURANCE	AE-12

NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

AVIATION ELECTRICIAN'S MATE (AE)



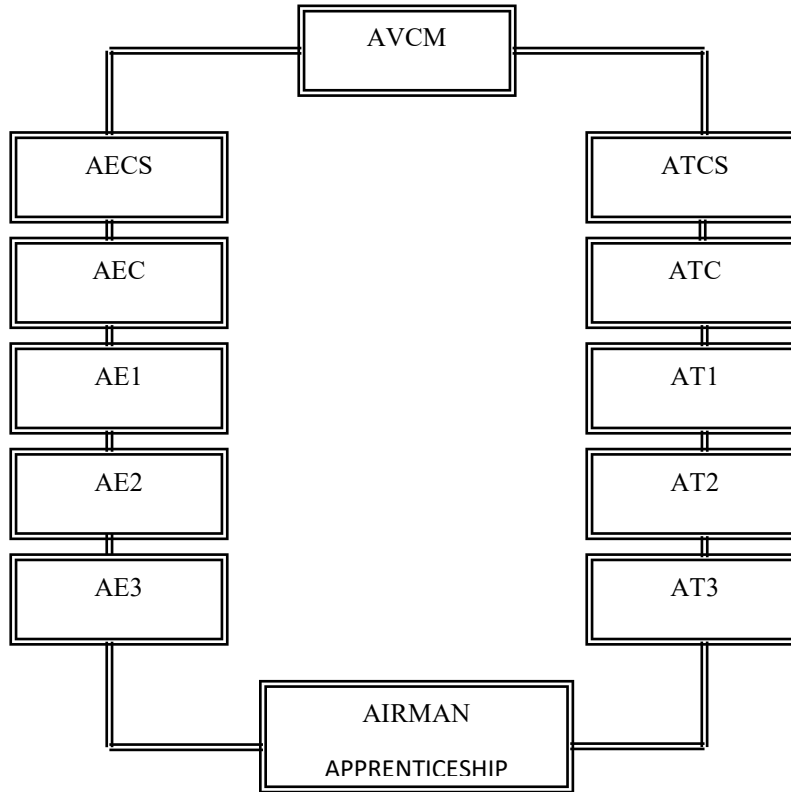
SCOPE OF RATING

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 Electricians 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 EXXX series or other NECs as assigned

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**Reading Comprehension**Management of Material Resources**Monitoring**Judgment and Decision Making**Management of Personnel Resources**Coordination**Critical Thinking***Abilities***Written Comprehension**Manual Dexterity**Deductive Reasoning**Problem Sensitivity**Category Flexibility**Finger Dexterity**Information Ordering**Near Vision**Selective Attention**Written Expression***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	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 Environmental Control System (ECS) components (e.g., control panels, switches, control boxes, etc.)
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 components (e.g., oil pressure, hydraulic pressure, etc.)
E4	CORE	Maintain liquid quantity system components (e.g., fuel, hydraulics, liquid oxygen, etc.)
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 Exhaust Gas Temperature (EGT) and Turbine Inlet Temperature (TIT) system components
E4	CORE	Maintain fire warning indicating system components
E4	CORE	Maintain fuel system electrical components
E4	NON-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 Automatic Flight Control System (AFCS) components
E4	CORE	Maintain Automatic Throttle Control system (ATC) components
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 compass system components
E4	CORE	Maintain aircraft Inertial Navigation System (INS) components
E4	CORE	Maintain aircraft navigation system electrical and electronic components

CORROSION CONTROL

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Perform corrosion prevention on aircraft components
E4	CORE	Perform corrosion prevention on aircraft electrical and electronic components
E4	CORE	Perform corrosion treatment on aircraft components
E4	CORE	Perform corrosion treatment 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	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.)
E4	CORE	Maintain circuit cards
E4	CORE	Maintain miscellaneous electrical and electronic system components (e.g., aircraft clock, night vision, etc.)
E4	CORE	Maintain retrograde wiring harnesses
E4	CORE	Perform conditional inspections
E4	CORE	Perform preoperational inspections
E4	CORE	Perform special inspections
E4	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.)
E4	CORE	Document maintenance actions
E7	CORE	Manage Production Control (PC) operations
E6	CORE	Update Monthly Maintenance Plans (MMP)
E5	CORE	Verify Maintenance Data Reports (MDR)
E5	CORE	Verify status of maintenance workload

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 components (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
E6	CORE	Conduct Quality Assurance (QA) inspections
E6	CORE	Manage compass calibration program
E6	CORE	Manage Naval Aviation Maintenance Programs (NAMP)
E6	CORE	Monitor Naval Aviation Maintenance Programs (NAMP)
E4	CORE	Perform acceptance inspections
E4	CORE	Perform transfer inspections
E5	CORE	Supervise Intermediate Maintenance Activity (IMA) electrical and electronic maintenance operations

Job Title**Aviation Electricians 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 EXXX series or other NECs as assigned

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**Critical Thinking***Abilities***Written Comprehension**Deductive Reasoning**Problem Sensitivity**Manual Dexterity**Category Flexibility**Finger Dexterity**Near Vision**Selective Attention**Written Expression**Inductive Reasoning***AIRCRAFT ELECTRICAL SYSTEMS****Paygrade****Task Type****Task Statements**

E4

CORE

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 blade/door systems

E4

CORE

Maintain Environmental Control Systems (ECS)

E4

CORE

Maintain flight data recording systems

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., hydraulic pressure, oil pressure, 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 electrical fuel distribution systems
E4	CORE	Maintain Exhaust Gas Temperature (EGT) and Turbine Inlet Temperature (TIT) systems
E4	CORE	Maintain fire warning indicating system
E4	NON-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 Automatic Flight Control Systems (AFCS)
E4	CORE	Maintain Automatic Throttle Control (ATC) 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 compass systems
E4	CORE	Maintain aircraft Inertial Navigation Systems (INS)
E4	CORE	Maintain aircraft navigation electrical and electronic systems

CORROSION CONTROL

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Perform corrosion prevention on aircraft electrical and electronic components
E4	CORE	Perform corrosion prevention on aircraft electrical and electronic systems
E4	CORE	Perform corrosion prevention on aircraft systems
E4	CORE	Perform corrosion treatment on aircraft components
E4	CORE	Perform corrosion treatment on aircraft electrical and electronic components
E4	CORE	Perform corrosion treatment on aircraft electrical and electronic systems
E4	CORE	Perform corrosion treatment on aircraft systems

ELECTRICAL MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Build aircraft wiring harnesses
E5	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 Mounted Cueing Systems (JHMCS)
E4	CORE	Maintain miscellaneous electrical and electronic systems (e.g. aircraft clock, night vision, etc.)
E4	CORE	Maintain retrograde wiring harnesses
E4	CORE	Perform conditional inspections
E4	CORE	Perform daily inspections
E4	CORE	Perform phase inspections
E4	CORE	Perform preoperational inspections
E4	CORE	Perform special 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	Conduct maintenance operations briefs (e.g., aircraft moves, low power turns, production control, workcenter, etc.)
E4	CORE	Document maintenance actions
E7	CORE	Manage flight deck and flight line operations
E7	CORE	Manage Maintenance Control (MC) operations
E6	CORE	Update Monthly Maintenance Plans (MMP)
E5	CORE	Verify Maintenance Data Reports (MDR)
E5	CORE	Verify status of maintenance workload

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 transformer rectifiers, converters, and inverters
E4	CORE	Maintain Bus Power Control Units (BPCU)
E4	CORE	Maintain Generator Control Units (GCU)

POWER GENERATION AND DISTRIBUTION SYSTEMS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
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
E6	CORE	Conduct Quality Assurance (QA) inspections
E6	CORE	Coordinate flight deck and flight line operations
E6	CORE	Manage compass calibration program
E7	CORE	Manage Functional Check Flight (FCF) inspections
E6	CORE	Manage Naval Aviation Maintenance Programs (NAMP)
E6	CORE	Monitor Naval Aviation Maintenance Programs (NAMP)
E4	CORE	Perform acceptance inspections
E4	CORE	Perform transfer inspections
E5	CORE	Supervise aircraft electrical and electronic maintenance operations