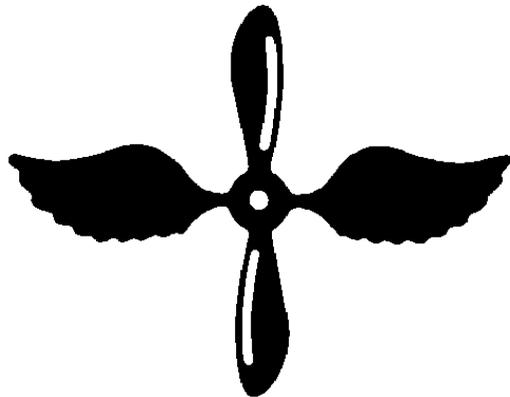


CHAPTER 3



AVIATION MACHINIST'S MATE (AD)

NAVPERS 18068-3F
CH-62

Updated: April 2015

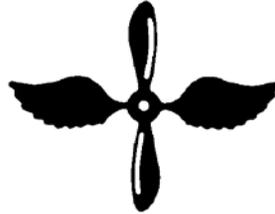
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NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

AVIATION MACHINIST'S MATE (AD)



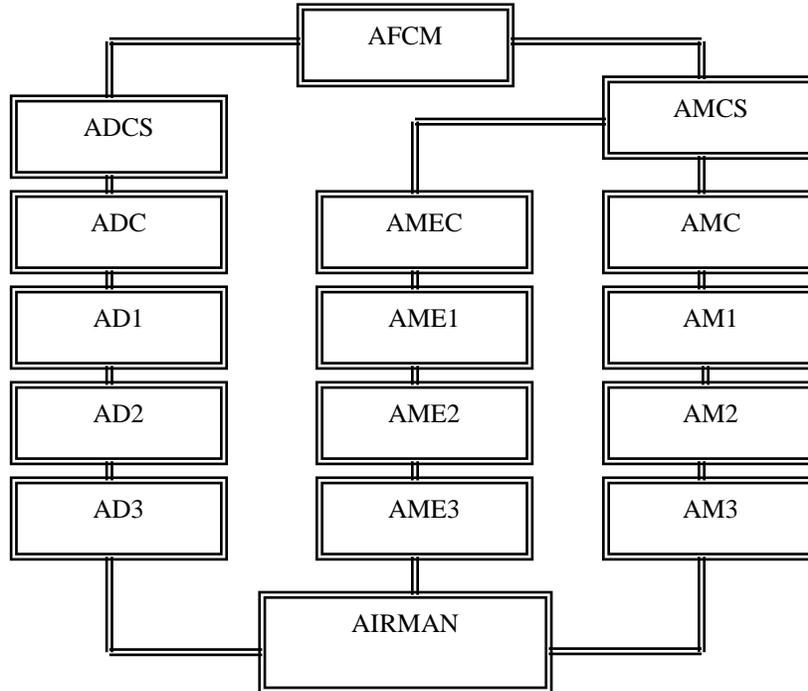
SCOPE OF RATING

Aviation Machinist's Mates (AD) maintain, inspect, troubleshoot, preserve, and de-preserve aircraft engines and their related systems, including fuel, lubrication, compression, combustion, exhaust, accessory gearbox, aircraft mounted accessory drive, propeller, anti-ice, bleed air systems, etc.; conduct special and conditional inspections and oil analysis; perform functional checks and required adjustments on engines and related systems; and supervise and provide training to power plant work centers.

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 3.

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 Machinist's Mate Organizational Level****Job Code****001362****Job Family**

Installation, Maintenance, and Repair

NOC

TBD

Short Title (30 Characters)

AVIA MACHINIST MATE O-LEVEL

Short Title (14 Characters)

AVENG SYS O-LV

Pay Plan

Enlisted

Career Field

AD

Other Relationships and Rules

NEC 64XX, 83XX, and 88XX series

Job Description

Aviation Machinist's Mates Organization Level conduct scheduled and unscheduled maintenance and troubleshoot aircraft engines, fuel, and lubrication systems to facilitate daily flight operations; perform complete aircraft turboshaft, turbofan, turbojet, and turboprop engine and component removal and replacements; and evaluate engine performance using advanced calibration equipment.

DoD Relationship**O*NET Relationship****Group Title**

Aircraft Engines

DoD Code

160100

Occupation Title

Aircraft Mechanics and Service Technicians

SOC Code

49-3011.00

Job Family

Installation, Maintenance, and Repair

Skills*Equipment Maintenance**Repairing**Installation**Operation Monitoring**Quality Control Analysis**Systems Analysis**Reading Comprehension**Troubleshooting**Equipment Selection**Coordination***Abilities***Selective Attention**Manual Dexterity**Deductive Reasoning**Static Strength**Perceptual Speed**Extent Flexibility**Wrist-Finger Speed**Control Precision**Written Comprehension**Category Flexibility***AUXILIARY POWER****Paygrade****Task Type****Task Statements**

E5

CORE

Inspect Auxiliary Power Units (APU)

E4

CORE

Maintain Auxiliary Power Unit (APU) systems

E4

CORE

Remove Auxiliary Power Units (APU)

E4

CORE

Replace Auxiliary Power Units (APU)

E5

CORE

Troubleshoot Auxiliary Power Units (APU)

ENGINE COMPONENT INSPECTION AND MAINTENANCE**Paygrade****Task Type****Task Statements**

E5

CORE

Inspect engine fuel system components

E5

CORE

Inspect internal hot and cold sections

E4

CORE

Maintain engine exhaust systems

E4

CORE

Remove engine anti-ice system components

E4

CORE

Remove engine bleed air system components

E4

CORE

Remove engine exhaust system components

E4

CORE

Remove engine ignition system components

E4

CORE

Remove engine oil system components

E4

CORE

Remove engine starting system components

E4

CORE

Remove turbine assemblies

E4

CORE

Replace engine anti-ice system components

E4

CORE

Replace engine bleed air system components

E4	CORE	Replace engine exhaust system components
E4	CORE	Replace engine ignition system components
E4	CORE	Replace engine oil system components
E4	CORE	Replace engine starting system components
E4	CORE	Replace turbine assemblies
E5	CORE	Troubleshoot engine components

FUEL SYSTEMS MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Collect aircraft fuel samples
E5	CORE	Conduct gas free inspections on fuel cells
E4	CORE	Maintain aircraft fuel systems
E4	NON-CORE	Remove Aerial Refueling Stores (ARS)
E4	CORE	Remove aircraft fuel cell and components
E4	CORE	Remove auxiliary fuel tanks
E4	CORE	Remove engine fuel system components
E4	CORE	Remove fuel stores
E4	NON-CORE	Repair Aerial Refueling Stores (ARS)
E4	CORE	Repair external fuel tanks
E4	NON-CORE	Replace Aerial Refueling Stores (ARS)
E4	CORE	Replace aircraft fuel cell and components
E4	CORE	Replace auxiliary fuel tanks
E4	CORE	Replace engine fuel system components
E4	NON-CORE	Replace fuel stores
E5	NON-CORE	Troubleshoot Aerial Refueling Stores (ARS)
E5	CORE	Troubleshoot aircraft fuel systems
E5	CORE	Troubleshoot external fuel tanks

GENERAL MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Conduct aircraft maintenance turns
E5	CORE	Conduct aircraft transfer and acceptance inspections
E5	CORE	Conduct conditional inspections
E5	CORE	Conduct corrosion inspections
E6	CORE	Conduct Quality Assurance (QA) inspections
E5	CORE	Conduct scheduled maintenance inspections
E4	CORE	Conduct support equipment inspections
E5	CORE	Incorporate Technical Directives (TD)
E4	NON-CORE	Maintain Aircraft Mounted Accessory Drive (AMAD) assemblies
E7	CORE	Manage Naval Aviation Maintenance Programs (NAMP)
E6	CORE	Monitor Naval Aviation Maintenance Programs (NAMP)
E4	CORE	Perform corrosion prevention procedures
E4	CORE	Treat power plant and related systems corrosion

HELICOPTER MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect aircraft drive transmission systems
E5	CORE	Inspect aircraft rotor system components
E4	CORE	Maintain aircraft drive transmission systems
E4	CORE	Maintain aircraft rotor systems
E4	CORE	Maintain engine fire bottles
E5	CORE	Perform helicopter vibration analysis
E4	CORE	Remove aircraft rotor system components
E4	CORE	Remove blade fold systems
E4	CORE	Remove main rotor blades
E4	CORE	Remove tail rotor paddles
E4	CORE	Replace aircraft rotor system components
E4	CORE	Replace blade fold systems
E4	CORE	Replace main rotor blades
E4	CORE	Replace tail rotor paddles
E5	CORE	Troubleshoot aircraft drive transmission systems
E5	CORE	Troubleshoot aircraft rotor system components

MAINTENANCE ADMINISTRATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E7	CORE	Assign aircraft to missions
E7	CORE	Conduct flight crew briefs and debriefs
E7	CORE	Conduct maintenance and production briefs
E4	CORE	Document aircraft maintenance
E7	CORE	Manage aircraft component cannibalization
E6	CORE	Manage power plant administrations
E7	NON-CORE	Prepare Broad Arrow reports
E7	CORE	Prepare engine status reports
E7	CORE	Release aircraft safe for flight
E7	CORE	Report aircraft status
E7	CORE	Schedule aircraft inspections
E7	CORE	Schedule aircraft maintenance
E7	CORE	Verify Aircraft Discrepancy Books (ADB)

POWER PLANT MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Collect oil samples for analysis
E4	CORE	Conduct engine preservations and de-preservations
E5	CORE	Conduct special engine inspections
E5	CORE	Inspect accessory gearbox assemblies
E5	CORE	Inspect engine control systems
E5	CORE	Inspect Gas Turbine Compressor (GTC) assemblies

E5	CORE	Inspect Quick Engine Change (QEC) assemblies
E4	CORE	Maintain accessory gearbox assemblies
E4	CORE	Maintain engine anti-ice systems
E4	CORE	Maintain engine bleed air systems
E4	CORE	Maintain engine control systems
E4	CORE	Maintain engine ignition systems
E4	CORE	Maintain engine starting systems
E4	CORE	Maintain oil systems
E5	CORE	Perform engine control rigging
E4	CORE	Perform engine wash
E4	CORE	Remove engines
E4	NON-CORE	Remove Generator Converter Units (GCU)
E4	CORE	Replace engines
E4	NON-CORE	Replace Generator Converter Units (GCU)
E6	CORE	Supervise power plant and related systems maintenance operations
E5	CORE	Troubleshoot power plants and related systems

PROPELLER SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect aircraft propellers and components
E4	CORE	Maintain aircraft propeller systems
E4	CORE	Maintain reduction gearbox systems
E4	CORE	Maintain torque meter assemblies
E4	CORE	Perform propeller vibration analysis
E4	CORE	Remove propeller and associated components
E4	CORE	Remove propeller blades
E4	CORE	Remove reduction gearbox systems and components
E4	CORE	Remove valve and pump housing assemblies
E4	CORE	Repair aircraft propellers
E4	CORE	Replace propeller and associated components
E4	CORE	Replace propeller blades
E4	CORE	Replace reduction gearbox systems and components
E4	CORE	Replace valve and pump housing assemblies
E5	CORE	Troubleshoot propeller systems
E5	CORE	Troubleshoot reduction gear box
E5	CORE	Troubleshoot valve housing assemblies

Job Title**Aviation Machinist's Mate Intermediate Level****Job Code****001417****Job Family**

Installation, Maintenance, and Repair

NOC

TBD

Short Title (30 Characters)

AVIA MACHINIST MATE I-LEVEL

Short Title (14 Characters)

AVENG SYS I-LV

Pay Plan

Enlisted

Career Field

AD

Other Relationships and Rules

NEC 8300 and 8800

Job Description

Aviation Machinist's Mates Intermediate Level perform complete in depth repair of engines and associated components on turboshaft, turbofan, turbojet, and turboprop engines including complete engine teardown, propellers, rotors, gearboxes, and drive accessories; and evaluate turbine engines performance using engine test cells and advanced calibration equipment.

DoD Relationship**O*NET Relationship****Group Title**

Aircraft Engines

DoD Code

160100

Occupation Title

Aircraft Mechanics and Service Technicians

SOC Code

49-3011.00

Job Family

Installation, Maintenance, and Repair

Skills

Equipment Maintenance
 Repairing
 Operation Monitoring
 Quality Control Analysis
 Installation
 Systems Analysis
 Troubleshooting
 Equipment Selection
 Operation and Control
 Reading Comprehension

Abilities

Selective Attention
 Manual Dexterity
 Deductive Reasoning
 Perceptual Speed
 Wrist-Finger Speed
 Control Precision
 Static Strength
 Category Flexibility
 Oral Expression
 Stamina

AUXILIARY POWER**Paygrade****Task Type****Task Statements**

E5	CORE	Inspect Auxiliary Power Units (APU)
E4	CORE	Maintain Auxiliary Power Unit (APU) systems
E5	CORE	Troubleshoot Auxiliary Power Units (APU)

ENGINE COMPONENT INSPECTION AND MAINTENANCE**Paygrade****Task Type****Task Statements**

E5	CORE	Inspect engine fuel system components
E5	CORE	Inspect internal hot and cold sections
E4	CORE	Maintain compressor systems
E4	CORE	Maintain engine drive shafts
E4	CORE	Maintain engine exhaust systems
E4	CORE	Remove engine anti-ice system components
E4	CORE	Remove engine bleed air system components
E4	CORE	Remove engine exhaust system components
E4	CORE	Remove engine ignition system components
E4	CORE	Remove engine oil system components
E4	CORE	Remove engine starting system components
E4	CORE	Remove turbine assemblies
E4	NON-CORE	Repair combustion systems
E4	CORE	Repair engine compressor assemblies

E4	CORE	Replace engine anti-ice system components
E4	CORE	Replace engine bleed air system components
E4	CORE	Replace engine drive shafts
E4	CORE	Replace engine exhaust system components
E4	CORE	Replace engine ignition system components
E4	CORE	Replace engine oil system components
E4	CORE	Replace engine starting system components
E4	CORE	Replace turbine assemblies
E5	CORE	Troubleshoot engine components

FUEL SYSTEMS MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Conduct gas free inspections on fuel cells
E4	CORE	Remove engine fuel system components
E4	NON-CORE	Repair Aerial Refueling Stores (ARS)
E4	CORE	Repair external fuel tanks
E4	CORE	Replace engine fuel system components
E5	NON-CORE	Troubleshoot Aerial Refueling Stores (ARS)
E5	CORE	Troubleshoot external fuel tanks

GENERAL MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Conduct corrosion inspections
E6	CORE	Conduct Quality Assurance (QA) inspections
E5	CORE	Conduct scheduled maintenance inspections
E4	CORE	Conduct support equipment inspections
E5	CORE	Incorporate Technical Directives (TD)
E5	CORE	Maintain engine test cell equipment
E5	CORE	Maintain oil analysis equipment
E7	CORE	Manage Naval Aviation Maintenance Programs (NAMP)
E6	CORE	Monitor Naval Aviation Maintenance Programs (NAMP)
E4	CORE	Perform corrosion prevention procedures
E5	CORE	Perform engine test cell operations
E4	CORE	Treat power plant and related systems corrosion

HELICOPTER MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect aircraft drive transmission systems
E5	CORE	Inspect aircraft rotor system components
E4	CORE	Maintain aircraft rotor systems
E5	CORE	Perform helicopter vibration analysis
E4	CORE	Remove aircraft rotor system components
E4	CORE	Replace aircraft rotor system components
E5	CORE	Troubleshoot aircraft rotor system components

MAINTENANCE ADMINISTRATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E7	CORE	Conduct maintenance and production briefs
E4	CORE	Document aircraft maintenance
E6	CORE	Manage power plant administrations
E7	NON-CORE	Prepare Broad Arrow reports
E7	CORE	Prepare engine status reports

POWER PLANT MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Collect oil samples for analysis
E4	CORE	Conduct engine preservations and de-preservations
E5	CORE	Conduct special engine inspections
E5	CORE	Inspect accessory gearbox assemblies
E5	CORE	Inspect engine control systems
E5	CORE	Inspect Gas Turbine Compressor (GTC) assemblies
E4	CORE	Maintain accessory gearbox assemblies
E4	CORE	Maintain engine bleed air systems
E4	CORE	Maintain engine control systems
E4	CORE	Maintain engine ignition systems
E4	CORE	Maintain engine modules
E4	CORE	Maintain engine starting systems
E4	CORE	Maintain oil systems
E4	CORE	Perform engine wash
E4	CORE	Repair Gas Turbine Compressor (GTC) assemblies
E6	CORE	Supervise power plant and related systems maintenance operations
E5	CORE	Troubleshoot power plants and related systems

PROPELLER SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect aircraft propellers and components
E4	CORE	Maintain aircraft propeller systems
E4	CORE	Maintain reduction gearbox systems
E4	CORE	Maintain torque meter assemblies
E4	CORE	Perform propeller vibration analysis
E4	CORE	Remove propeller blades
E4	CORE	Remove reduction gearbox systems and components
E4	CORE	Remove valve and pump housing assemblies
E4	CORE	Repair aircraft propellers
E4	CORE	Replace propeller blades

E4	CORE	Replace reduction gearbox systems and components
E4	CORE	Replace valve and pump housing assemblies
E5	CORE	Troubleshoot propeller systems
E5	CORE	Troubleshoot reduction gear box
E5	CORE	Troubleshoot valve housing assemblies