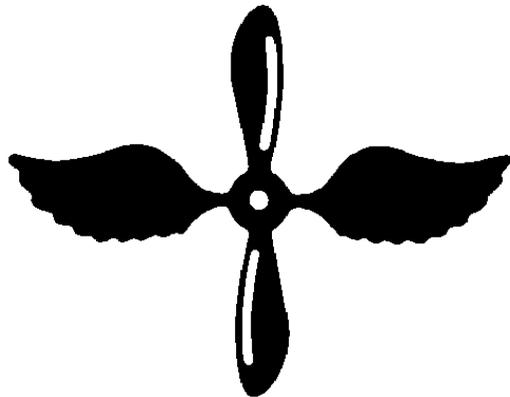


# CHAPTER 3



## AVIATION MACHINIST'S MATE (AD)

NAVPERS 18068-3G  
CH-76

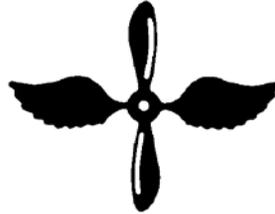
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NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

AVIATION MACHINIST'S MATE (AD)



SCOPE OF RATING

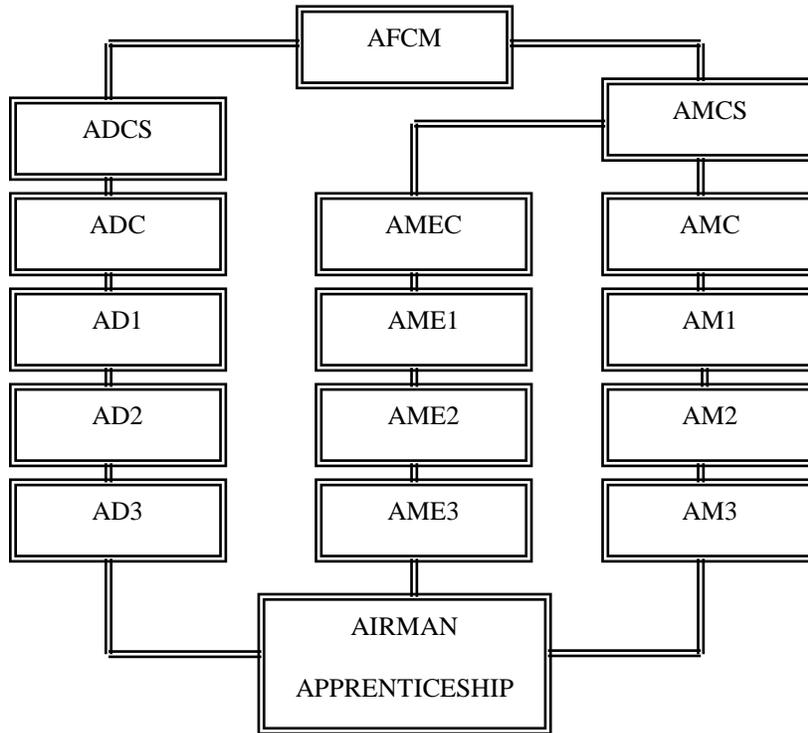
Aviation Machinist's Mates (AD) maintain, inspect, troubleshoot, preserve, and de-preserve aircraft transmission systems, rotor systems, propeller systems, and engines, including fuel, lubrication, intake, compressor, combustion, turbine, exhaust, accessory gearbox, anti-ice, bleed air systems, etc.; 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.

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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 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 EXXX series and other NECs as assigned

**Job Description**

Aviation Machinist's Mate Organization Level conduct scheduled and unscheduled maintenance including inspections, removal, installation, configuring, and troubleshooting aircraft engines, transmission, rotor, propeller, fuel, and lubrication systems to facilitate daily flight operations.

**DoD Relationship**Group Title

Aircraft Engines

DoD Code

160100

**O\*NET Relationship**Occupation Title

Aircraft Mechanics and Service Technicians

SOC Code

49-3011.00

Job Family

Installation, Maintenance, and Repair

**Skills***Quality Control Analysis**Operation Monitoring**Equipment Selection**Repairing**Systems Evaluation**Systems Analysis**Troubleshooting**Equipment Maintenance**Operation and Monitoring**Judgment and Decision Making***Abilities***Selective Attention**Manual Dexterity**Near Vision**Flexibility of Closure**Inductive Reasoning**Perceptual Speed**Problem Sensitivity**Rate Control**Visualization**Written Comprehension***AUXILIARY POWER****Paygrade****Task Type****Task Statements**

E5

CORE

Inspect Auxiliary Power Plant (APP)

E5

CORE

Inspect Auxiliary Power Units (APU)

E4

CORE

Maintain Auxiliary Power Plant (APP)

E4

CORE

Maintain Auxiliary Power Unit (APU) systems

E5

CORE

Troubleshoot Auxiliary Power Plant (APP)

E5

CORE

Troubleshoot Auxiliary Power Units (APU)

**CORROSION CONTROL****Paygrade****Task Type****Task Statements**

E4

CORE

Clean aircraft, support equipment, and aircraft related equipment

E4

CORE

Conduct corrosion inspections

E4

CORE

De-preserve aircraft, support equipment, and aircraft related equipment

E4

CORE

Inspect aircraft and aircraft components for corrosion

E4

CORE

Perform corrosion prevention procedures

E4

CORE

Perform emergency reclamations

E4

CORE

Preserve aircraft, support equipment, and aircraft related equipment

E4

NON-CORE

Treat Aerial Refueling Stores (ARS)

E4

CORE

Treat power plant and related systems corrosion

## ENGINE SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Calibrate engine drive shafts
E5	CORE	Inspect combustion systems
E5	CORE	Inspect compressor systems
E5	CORE	Inspect engine anti-ice systems
E5	CORE	Inspect engine bleed air systems
E5	CORE	Inspect engine drive shafts
E5	CORE	Inspect engine exhaust systems
E5	CORE	Inspect engine fuel systems
E5	CORE	Inspect engine ignition systems
E5	CORE	Inspect internal cold sections
E5	CORE	Inspect internal hot sections
E5	CORE	Inspect power plant air inlet system
E5	CORE	Inspect turbine modules
E4	CORE	Maintain combustion systems
E4	CORE	Maintain compressor systems
E4	CORE	Maintain engine anti-ice systems
E4	CORE	Maintain engine bleed air systems
E4	CORE	Maintain engine drive shafts
E4	CORE	Maintain engine exhaust systems
E4	CORE	Maintain engine ignition systems
E4	CORE	Maintain power plant air inlet system
E4	CORE	Maintain turbine modules
E4	CORE	Preserve combustion systems
E4	CORE	Preserve compressor systems
E4	CORE	Preserve engine drive shafts
E4	CORE	Preserve engine exhaust systems
E4	CORE	Preserve power plant air inlet system
E4	CORE	Preserve turbine modules
E4	CORE	Test engine anti-ice systems
E4	CORE	Test engine bleed air systems
E4	CORE	Test engine drive shafts
E4	CORE	Test engine exhaust systems
E4	CORE	Test engine ignition systems
E4	CORE	Test turbine modules
E5	CORE	Troubleshoot combustion systems
E5	CORE	Troubleshoot compressor systems
E5	CORE	Troubleshoot engine anti-ice systems
E5	CORE	Troubleshoot engine bleed air systems
E5	CORE	Troubleshoot engine drive shafts

### ENGINE SYSTEMS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Troubleshoot engine exhaust systems
E5	CORE	Troubleshoot engine ignition systems
E5	CORE	Troubleshoot power plant air inlet system
E5	CORE	Troubleshoot turbine modules

### FUEL SYSTEMS MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	NON-CORE	Inspect Aerial Refueling Stores (ARS)
E5	CORE	Inspect aircraft fuel systems
E4	CORE	Maintain aircraft fuel cell systems
E4	CORE	Maintain aircraft fuel systems
E4	CORE	Maintain engine fuel systems
E4	NON-CORE	Preserve Aerial Refueling Stores (ARS)
E4	CORE	Preserve aircraft fuel systems
E4	CORE	Preserve engine fuel systems
E4	NON-CORE	Repair Aerial Refueling Stores (ARS)
E4	NON-CORE	Test Aerial Refueling Stores (ARS)
E4	CORE	Test aircraft fuel systems
E4	CORE	Test engine fuel systems
E5	NON-CORE	Troubleshoot Aerial Refueling Stores (ARS)
E5	CORE	Troubleshoot aircraft fuel systems
E5	CORE	Troubleshoot engine fuel systems

### HELICOPTER MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Calibrate aircraft rotor systems
E5	CORE	Inspect aircraft drive transmission systems
E5	CORE	Inspect aircraft rotor systems
E5	CORE	Inspect engine fire bottles
E4	CORE	Maintain aircraft drive transmission systems
E4	CORE	Maintain aircraft rotor systems
E4	CORE	Maintain engine fire bottles
E6	CORE	Perform helicopter vibration analysis
E4	CORE	Preserve aircraft drive transmission systems
E4	CORE	Test aircraft rotor systems
E4	CORE	Test engine fire bottles
E5	CORE	Troubleshoot aircraft drive transmission systems
E5	CORE	Troubleshoot aircraft rotor system

### LINE MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Collect aircraft fuel samples
E4	CORE	Conduct daily inspections
E4	CORE	Conduct preoperational support equipment inspections
E4	CORE	Conduct turnaround inspections
E4	CORE	Review Aircraft Discrepancy Books (ADB)

### 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
E7	CORE	Conduct flight crew debriefs
E7	CORE	Conduct maintenance briefs
E4	CORE	Document aircraft maintenance
E7	NON-CORE	Manage aircraft component cannibalization
E6	CORE	Manage power plant administrations
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
E5	CORE	Supervise power plant and related systems maintenance operations

### POWER PLANT MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Collect oil samples for analysis
E5	CORE	Inspect accessory gearbox assemblies
E5	CORE	Inspect Aircraft Mounted Accessory Drive (AMAD) assemblies
E5	CORE	Inspect engine control systems
E5	CORE	Inspect engine starting systems
E5	CORE	Inspect Gas Turbine Compressor (GTC) assemblies
E5	CORE	Inspect Generator Converter Units (GCU)
E5	CORE	Inspect oil systems
E5	CORE	Inspect Quick Engine Change (QEC) assemblies
E4	CORE	Maintain accessory gearbox assemblies
E4	CORE	Maintain Aircraft Mounted Accessory Drive (AMAD) assemblies
E4	CORE	Maintain engine control systems
E4	CORE	Maintain engine starting systems
E4	CORE	Maintain Gas Turbine Compressor (GTC) assemblies
E4	CORE	Maintain Generator Converter Units (GCU)
E5	CORE	Maintain oil analysis equipment

## **POWER PLANT MAINTENANCE (CONT'D)**

<b><u>Paygrade</u></b>	<b><u>Task Type</u></b>	<b><u>Task Statements</u></b>
E4	CORE	Maintain oil systems
E4	CORE	Maintain Quick Engine Change (QEC) assemblies
E5	CORE	Perform engine control rigging
E4	CORE	Perform engine wash
E4	CORE	Preserve oil systems
E4	CORE	Preserve Quick Engine Change (QEC) assemblies
E4	CORE	Test engine control systems
E4	CORE	Test engine starting systems
E4	CORE	Test Quick Engine Change (QEC) assemblies
E5	CORE	Troubleshoot engine control systems
E5	CORE	Troubleshoot engine starting systems
E5	CORE	Troubleshoot Generator Converter Units (GCU)
E5	CORE	Troubleshoot oil systems
E5	CORE	Troubleshoot Quick Engine Change (QEC) assemblies

## **PROPELLER SYSTEMS**

<b><u>Paygrade</u></b>	<b><u>Task Type</u></b>	<b><u>Task Statements</u></b>
E5	CORE	Inspect aircraft propeller components
E5	CORE	Inspect aircraft propeller systems
E5	CORE	Inspect reduction gearbox systems
E5	CORE	Inspect torque meter assemblies
E4	CORE	Maintain aircraft propeller systems
E4	CORE	Maintain reduction gearbox systems
E4	CORE	Maintain torque meter assemblies
E6	CORE	Perform propeller vibration analysis
E5	CORE	Troubleshoot propeller systems
E5	CORE	Troubleshoot reduction gearbox systems
E5	CORE	Troubleshoot torque meter assemblies

## **QUALITY ASSURANCE**

<b><u>Paygrade</u></b>	<b><u>Task Type</u></b>	<b><u>Task Statements</u></b>
E6	CORE	Conduct aircraft acceptance inspections
E6	CORE	Conduct aircraft conditional inspections
E5	CORE	Conduct aircraft maintenance turns
E5	CORE	Conduct aircraft special inspections
E6	CORE	Conduct aircraft transfer inspections
E6	CORE	Conduct engine acceptance inspections
E6	CORE	Conduct engine conditional inspections
E6	CORE	Conduct gas free inspections on fuel cells
E6	CORE	Conduct phase inspections
E6	CORE	Conduct Quality Assurance (QA) inspections

**QUALITY ASSURANCE (CONT'D)**

<b><u>Paygrade</u></b>	<b><u>Task Type</u></b>	<b><u>Task Statements</u></b>
E5	CORE	Conduct special engine inspections
E5	CORE	Conduct support equipment inspections
E5	CORE	Incorporate Technical Directives (TD)
E6	CORE	Manage Naval Aviation Maintenance Programs (NAMP)
E6	CORE	Monitor Naval Aviation Maintenance Programs (NAMP)

**Job Title****Aviation Machinist 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 IXXX series and other NECs as assigned

**Job Description**

Aviation Machinist's Mate Intermediate Level performs complete in depth repair of engines and associated components on turboshaft, turbofan, 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****Group Title**

Aircraft Engines

**DoD Code**

160100

**O\*NET Relationship****Occupation Title**

Aircraft Mechanics and Service Technicians

**SOC Code**

49-3011.00

**Job Family**

Installation, Maintenance, and Repair

**Skills***Quality Control Analysis**Operation Monitoring**Equipment Selection**Repairing**Systems Evaluation**Systems Analysis**Troubleshooting**Operation and Monitoring**Equipment Maintenance**Judgment and Decision Making***Abilities***Selective Attention**Manual Dexterity**Near Vision**Flexibility of Closure**Inductive Reasoning**Perceptual Speed**Rate Control**Visualization**Problem Sensitivity**Dynamic Strength***AUXILIARY POWER****Paygrade****Task Type****Task Statements**

E5

CORE

Inspect Auxiliary Power Units (APU)

E4

CORE

Repair Auxiliary Power Units (APU)

E4

CORE

Test Auxiliary Power Unit (APU)

E5

CORE

Troubleshoot Auxiliary Power Units (APU)

**CORROSION CONTROL****Paygrade****Task Type****Task Statements**

E4

CORE

Clean aircraft, support equipment, and aircraft related equipment

E4

CORE

Conduct corrosion inspections

E4

CORE

De-preserve aircraft, support equipment, and aircraft related equipment

E4

CORE

Inspect aircraft and aircraft components for corrosion

E4

CORE

Perform corrosion prevention procedures

E4

CORE

Perform emergency reclamations

E4

CORE

Preserve aircraft, support equipment, and aircraft related equipment

E4

CORE

Preserve engine test cell equipment

E4

NON-CORE

Treat Aerial Refueling Stores (ARS)

E4

CORE

Treat engine test cell equipment

E4

CORE

Treat power plant and related systems corrosion

## ENGINE SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Calibrate engine drive shafts
E5	CORE	Inspect combustion systems
E5	CORE	Inspect compressor systems
E5	CORE	Inspect engine anti-ice systems
E5	CORE	Inspect engine bleed air systems
E5	CORE	Inspect engine drive shafts
E5	CORE	Inspect engine exhaust systems
E5	CORE	Inspect engine fuel systems
E5	CORE	Inspect engine ignition systems
E5	CORE	Inspect internal cold sections
E5	CORE	Inspect internal hot sections
E5	CORE	Inspect power plant air inlet system
E5	CORE	Inspect turbine modules
E4	CORE	Preserve combustion systems
E4	CORE	Preserve compressor systems
E4	CORE	Preserve engine drive shafts
E4	CORE	Preserve engine exhaust systems
E4	CORE	Preserve power plant air inlet system
E4	CORE	Preserve turbine modules
E4	CORE	Repair combustion systems
E4	CORE	Repair compressor systems
E4	CORE	Repair engine anti-ice systems
E4	CORE	Repair engine bleed air systems
E4	CORE	Repair engine drive shafts
E4	CORE	Repair engine exhaust systems
E4	CORE	Repair engine ignition systems
E4	CORE	Repair power plant air inlet system
E4	CORE	Repair turbine modules
E4	CORE	Test combustion systems
E4	CORE	Test compressor systems
E4	CORE	Test engine anti-ice systems
E4	CORE	Test engine bleed air systems
E4	CORE	Test engine drive shafts
E4	CORE	Test engine exhaust systems
E4	CORE	Test engine ignition systems
E5	CORE	Troubleshoot combustion systems
E5	CORE	Troubleshoot compressor systems
E5	CORE	Troubleshoot engine anti-ice systems
E5	CORE	Troubleshoot engine bleed air systems

### ENGINE SYSTEM (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Troubleshoot engine drive shafts
E5	CORE	Troubleshoot engine exhaust systems
E5	CORE	Troubleshoot engine ignition systems
E5	CORE	Troubleshoot power plant air inlet system
E5	CORE	Troubleshoot turbine modules

### FUEL SYSTEMS MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	NON-CORE	Inspect Aerial Refueling Stores (ARS)
E4	NON-CORE	Preserve Aerial Refueling Stores (ARS)
E4	CORE	Preserve engine fuel systems
E4	NON-CORE	Repair Aerial Refueling Stores (ARS)
E4	CORE	Repair engine fuel systems
E4	NON-CORE	Test Aerial Refueling Stores (ARS)
E4	CORE	Test engine fuel systems
E5	NON-CORE	Troubleshoot Aerial Refueling Stores (ARS)
E5	CORE	Troubleshoot engine fuel systems

### 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 systems
E4	CORE	Repair aircraft rotor systems
E4	CORE	Test aircraft rotor systems
E5	CORE	Troubleshoot aircraft rotor system

### LINE MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Conduct preoperational support equipment inspections

### MAINTENANCE ADMINISTRATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E7	CORE	Conduct production briefs
E4	CORE	Document aircraft maintenance
E7	NON-CORE	Manage component cannibalization
E6	CORE	Manage power plant administrations
E6	NON-CORE	Prepare Broad Arrow (BA) reports
E7	CORE	Prepare engine status reports
E5	CORE	Supervise power plant and related systems maintenance operations

## POWER PLANT MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Calibrate engine test cell equipment
E5	NON-CORE	Calibrate oil analysis equipment
E4	CORE	Collect oil samples for analysis
E5	CORE	Inspect accessory gearbox assemblies
E5	CORE	Inspect engine control systems
E5	CORE	Inspect engine test cell equipment
E5	CORE	Inspect Gas Turbine Compressor (GTC) assemblies
E5	NON-CORE	Inspect oil analysis equipment
E5	CORE	Inspect oil systems
E5	CORE	Inspect Quick Engine Change (QEC) assemblies
E5	CORE	Perform engine control rigging
E5	CORE	Perform engine test cell operations
E4	CORE	Perform engine wash
E4	CORE	Preserve oil systems
E4	CORE	Preserve Quick Engine Change (QEC) assemblies
E4	CORE	Repair accessory gearbox assemblies
E4	CORE	Repair engine control systems
E5	CORE	Repair engine test cell equipment
E4	CORE	Repair Gas Turbine Compressor (GTC) assemblies
E5	NON-CORE	Repair oil analysis equipment
E4	CORE	Repair oil systems
E4	CORE	Repair Quick Engine Change (QEC) assemblies
E4	CORE	Test engine control systems
E5	CORE	Test engine test cell equipment
E5	NON-CORE	Test oil analysis equipment
E4	CORE	Test Quick Engine Change (QEC) assemblies
E5	CORE	Troubleshoot engine control systems
E5	CORE	Troubleshoot engine test cell equipment
E5	NON-CORE	Troubleshoot oil analysis equipment
E5	CORE	Troubleshoot oil systems
E5	CORE	Troubleshoot Quick Engine Change (QEC) assemblies

## PROPELLER SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statement</u>
E5	CORE	Inspect aircraft propeller components
E5	CORE	Inspect aircraft propeller systems
E5	CORE	Inspect reduction gearbox systems
E5	CORE	Inspect torque meter assemblies
E6	CORE	Perform propeller vibration analysis
E4	CORE	Repair aircraft propeller systems

### **PROPELLER SYSTEMS (CONT'D)**

<b><u>Paygrade</u></b>	<b><u>Task Type</u></b>	<b><u>Task Statements</u></b>
E4	CORE	Repair reduction gearbox systems
E4	CORE	Repair torque meter assemblies
E5	CORE	Troubleshoot propeller systems

### **QUALITY ASSURANCE**

<b><u>Paygrade</u></b>	<b><u>Task Type</u></b>	<b><u>Task Statements</u></b>
E6	CORE	Conduct engine acceptance inspections
E6	CORE	Conduct engine conditional inspections
E6	CORE	Conduct gas free inspections on fuel cells
E6	CORE	Conduct Quality Assurance (QA) inspections
E5	CORE	Conduct special engine inspections
E5	CORE	Conduct support equipment inspections
E5	CORE	Incorporate Technical Directives (TD)
E6	CORE	Manage Naval Aviation Maintenance Programs (NAMP)
E6	CORE	Monitor Naval Aviation Maintenance Programs (NAMP)