

CHAPTER 39



GAS TURBINE SYSTEMS TECHNICIAN (MECHANICAL) (GSM)

NAVPERS 18068F-39G

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NAVY ENLISTED OCCUPATIONAL STANDARDS
FOR
GAS TURBINE SYSTEMS TECHNICIAN (MECHANICAL) (GSM)



SCOPE OF RATING

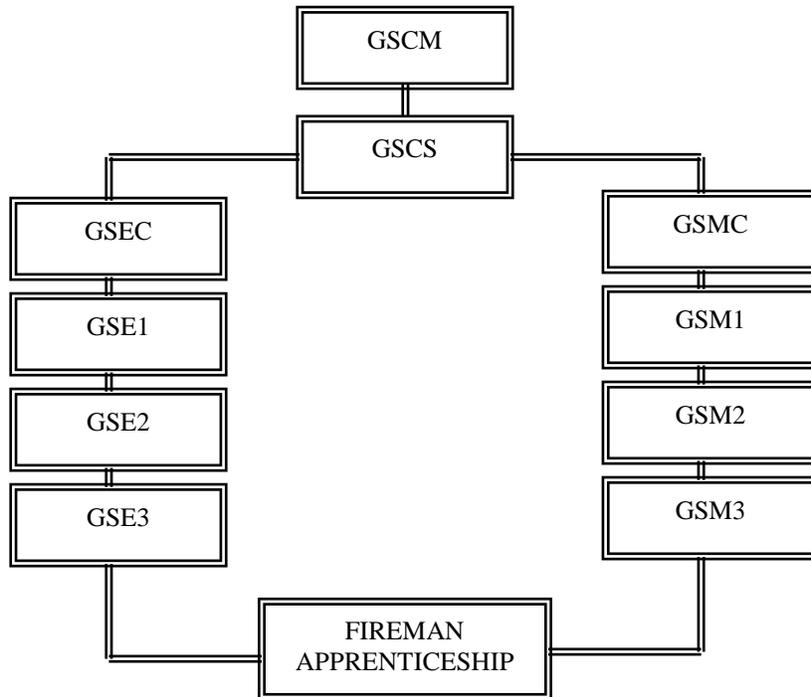
Gas Turbine Systems Technicians (GS) operate, repair, and perform organizational and intermediate maintenance on ship's propulsion Gas Turbine Engines (GTE), Ships Service Gas Turbine Generators (SSGTG), main propulsion machinery (including gears, shafting, and Controllable Pitch Propellers (CPP)), assigned auxiliary equipment (including fuel and lube oil systems), machinery control systems (including consoles and Programmed Logic Controllers (PLC)), assigned electrical and electronic equipment up to the printed circuit boards, and alarm and warning circuitry.

Gas Turbine Systems Technicians (Mechanical) (GSM) operate, repair, and perform organizational and intermediate maintenance on mechanical components of Gas Turbine Engines (GTE), main propulsion machinery (including gears, shafting, and Controllable Pitch/Reversible Propellers (CPP/CRP)), assigned auxiliary equipment, and propulsion control systems.

These Occupational Standards are 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 39.

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**Gas Turbine Mechanical Systems Technician****Job Code****003003****Job Family**

Production

NOC

TBD

Short Title (30 Characters)

GAS TURBINE M SYSTEM TEC

Short Title (14 Characters)

GT MECH TECH

Pay Plan

Enlisted

Career Field

GSM

Other Relationships and Rules

NEC UXXX series or other NECs as assigned

Job Description

Gas Turbine Mechanical Systems Technicians maintain and operate Ship's Service Gas Turbine Generators (SSGTG) and support systems; maintain Controllable Reversible/Pitch Propeller (CRP/PPP) systems; operate electric plant controls and main propulsion equipment, pumps, turning gears, air compressors, oil purification systems, low pressure air dehydrators, and engineering control systems; work with blueprints, schematics, and charts to maintain and repair Gas Turbine Engines (GTE) and auxiliary equipment; perform preventive maintenance on ship's fuel systems and air systems, Sea Water Service Systems (SWSS), waste drain systems, oil purification systems, and manually operated valves; perform work area inspections, operate standard test equipment, and test lubricating oil and distillate fuels for contamination, neutralization, and precipitation; conduct engine checks to verify performance and replace and/or adjust operating tolerance of contacts, micro-switches, relay switches, pressure switches, and temperature switches; and perform all administrative procedures related to gas turbine propulsion system operation and maintenance. Technicians are expected to perform work independently and mentor Gas Turbine Mechanical Systems Maintainers with very limited supervision.

DoD RelationshipGroup Title

Auxiliaries

DoD Code

165200

O*NET RelationshipOccupation Title

Power Plant Operators

SOC Code

51-8013.00

Job Family

Production

Skills*Quality Control Analysis**Equipment Maintenance**Troubleshooting**Operation and Control**Operation Monitoring**Complex Problem Solving**Repairing**Coordination**Reading Comprehension**Active Learning***Abilities***Written Comprehension**Problem Sensitivity**Manual Dexterity**Deductive Reasoning**Inductive Reasoning**Information Ordering**Written Expression**Time Sharing**Mathematical Reasoning**Arm-Hand Steadiness***AUXILIARY EQUIPMENT****Paygrade**

E4

Task Type

CORE

Task Statements

Align bleed air systems (i.e., start air, prairie, masker, anti-icing)

E4

CORE

Align Fuel Oil (FO) purifiers

E4

CORE

Align JP-5 systems

E4

CORE

Align Low Pressure Air Compressors (LPAC)

E4

CORE

Align Low Pressure Air Dehydrator (LPAD)

E4

CORE

Align oily waste systems

E4

CORE

Align waste oil systems

E5

CORE

Analyze Fuel Oil (FO) samples

E5

CORE

Analyze Lube Oil (LO) samples

E4

CORE

Conduct preventive maintenance on Low Pressure Air Dehydrator (LPAD)

E4

CORE

Conduct preventive maintenance on auxiliary lube oil filters

E4

CORE

Conduct preventive maintenance on bleed air systems (i.e., start air, prairie, masker, anti-icing)

E4

CORE

Conduct preventive maintenance on Fuel Oil (FO) system

E5

CORE

Conduct preventive maintenance on heat exchangers

AUXILIARY EQUIPMENT (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Conduct preventive maintenance on hydraulic systems
E4	CORE	Conduct preventive maintenance on JP-5 systems
E4	CORE	Conduct preventive maintenance on Low Pressure Air Compressors (LPAC)
E5	CORE	Conduct preventive maintenance on oily waste systems
E4	CORE	Conduct preventive maintenance on Seawater Systems (SWS)
E4	CORE	Conduct preventive maintenance on system valves
E4	CORE	Conduct preventive maintenance on systems pumps
E4	CORE	Conduct preventive maintenance on temperature regulating valves
E4	CORE	Measure fuel tank levels
E5	CORE	Repair bleed air systems (i.e., start air, prairie, masker, anti-icing)
E5	CORE	Repair Fuel Oil (FO) transfer system
E5	CORE	Repair JP-5 systems
E5	CORE	Repair Low Pressure Air Compressors (LPAC)
E4	CORE	Repair Low Pressure Air Dehydrator (LPAD)
E5	CORE	Repair Seawater Systems (SWS)
E5	CORE	Repair Systems Pumps
E4	CORE	Repair temperature regulating valves
E4	CORE	Sample fluids
E5	CORE	Troubleshoot Low Pressure Air Dehydrator (LPAD)
E5	CORE	Troubleshoot bleed air systems (i.e., start air, prairie, masker, anti-icing)
E5	CORE	Troubleshoot Fuel Oil (FO) transfer system
E5	CORE	Troubleshoot JP-5 systems
E5	CORE	Troubleshoot Low Pressure Air Compressors (LPAC)
E5	CORE	Troubleshoot Seawater Systems (SWS)
E5	CORE	Troubleshoot Systems Pumps
E5	CORE	Troubleshoot temperature regulating valves

GAS TURBINE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Align Gas Turbine Generator (GTG) locally and remotely
E4	CORE	Align Gas Turbine Generator (GTG) support systems
E4	CORE	Align Gas Turbine Module (GTM) synthetic Lube Oil (LO) systems
E5	CORE	Conduct Gas Turbine Engine (GTE) pre-operational checks
E4	CORE	Conduct Gas Turbine Module (GTM) support system alignment checks
E4	CORE	Conduct inlet preservations
E4	CORE	Conduct preventive maintenance on blow-in doors
E4	CORE	Conduct preventive maintenance on Foreign Object Damage (FOD) screens
E5	CORE	Conduct preventive maintenance on Gas Turbine Engine (GTE) assembly Components
E4	CORE	Conduct preventive maintenance on Gas Turbine Engine (GTE) base enclosures

GAS TURBINE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Conduct preventive maintenance on Gas Turbine Engine (GTE) combustion chamber components
E5	CORE	Conduct preventive maintenance on Gas Turbine Engine (GTE) fuel systems
E4	CORE	Conduct preventive maintenance on Gas Turbine Engine (GTE) inlet and exhaust systems
E4	CORE	Conduct preventive maintenance on Gas Turbine Engine (GTE) Lube Oil (LO) system components
E5	CORE	Conduct preventive maintenance on Gas Turbine Engine (GTE) mechanical linkages
E4	CORE	Conduct preventive maintenance on Gas Turbine Engine (GTE) water wash systems
E4	CORE	Conduct preventive maintenance on Gas Turbine Generator (GTG) set
E5	CORE	Conduct preventive maintenance on Gas Turbine Module (GTM) power turbine components
E5	CORE	Inspect shock mounts (i.e., Gas Turbine Module (GTM), Gas Turbine Generator (GTG))
E5	CORE	Repair blow-in doors
E5	CORE	Repair Gas Turbine Engine (GTE) inlet and exhaust systems
E5	CORE	Repair Gas Turbine Generator (GTG) set
E5	CORE	Repair Gas Turbine Module (GTM)
E5	CORE	Troubleshoot blow-in doors
E5	CORE	Troubleshoot Gas Turbine Engine (GTE) inlet and exhaust systems
E6	CORE	Troubleshoot Gas Turbine Generator (GTG) set
E6	CORE	Troubleshoot Gas Turbine Module (GTM)

MAIN PROPULSION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Align Controllable Pitch Propeller (CPP) or Controllable Reversible Pitch (CRP) systems
E4	CORE	Align Fuel Oil (FO) coalescer
E4	CORE	Align High Pressure (HP) start air systems
E4	CORE	Align Lube Oil (LO) purifiers
E4	CORE	Align main Lube Oil (LO) service systems
E4	CORE	Align Main Reduction Gear (MRG) Lube Oil (LO) pumps
E6	CORE	Calculate fuel load requirements
E6	CORE	Calculate Lube Oil (LO) load requirements
E5	CORE	Calibrate fuel pump logics
E5	CORE	Calibrate Lube Oil (LO) pump logics
E5	CORE	Calibrate mechanical propeller pitch controls
E4	CORE	Conduct preventive maintenance on Controllable Pitch Propeller (CPP) or Controllable Reversible Pitch (CRP) systems
E4	CORE	Conduct preventive maintenance on Fuel Oil (FO) coalescers

MAIN PROPULSION (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Conduct preventive maintenance on Fuel Oil (FO) service system
E5	CORE	Conduct preventive maintenance on Gas Turbine Module (GTM) power turbine brakes
E5	CORE	Conduct preventive maintenance on jacking or turning gears
E5	CORE	Conduct preventive maintenance on Main Reduction Gear (MRG)
E4	CORE	Conduct preventive maintenance on Main Reduction Gear (MRG) Lube Oil (LO) strainers
E4	CORE	Conduct preventive maintenance on systems valves
E5	CORE	Conduct Propulsion and Auxiliary Control Console (PACC) operations
E4	CORE	Conduct Propulsion Local Control Console (PLCC) operations
E4	CORE	Conduct Shaft Control Unit (SCU) operations
E5	CORE	Conduct Universal Control Console (UCC) operations
E4	CORE	Fabricate sealing gaskets
E4	CORE	Maintain Fuel Oil (FO) pre-filter components
E6	CORE	Manage bearing Logs
E7	CORE	Manage Marine Gas Turbine Service Records (MGTSR)
E5	CORE	Repair Controllable Pitch Propeller (CPP) or Controllable Reversible Pitch (CRP) systems
E4	CORE	Repair Fuel Oil (FO) coalescer
E5	CORE	Repair Fuel Oil (FO) service system
E5	CORE	Repair Gas Turbine Module (GTM) power turbine brakes
E5	CORE	Repair jacking or turning gears
E6	CORE	Repair Main Reduction Gear (MRG)
E6	CORE	Troubleshoot Controllable Pitch Propeller (CPP) or Controllable Reversible Pitch (CRP) systems
E5	CORE	Troubleshoot Fuel Oil (FO) coalescer
E5	CORE	Troubleshoot Fuel Oil (FO) service system
E6	CORE	Troubleshoot Gas Turbine Module (GTM) power turbine brakes
E6	CORE	Troubleshoot jacking or turning gears
E6	CORE	Troubleshoot Main Reduction Gear (MRG)

TECHNICAL ADMINISTRATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Annotate automated alarm data logs
E5	CORE	Maintain bearing Logs
E7	CORE	Maintain Marine Gas Turbine Service Records (MGTSR)
E6	CORE	Manage Engineering Operational Sequencing Systems (EOSS) program
E6	CORE	Manage equipment operating logs
E7	CORE	Manage Fuel Oil Quality Management (FOQM) program
E6	CORE	Manage Lube Oil Quality Management (LOQM) program

TECHNICAL ADMINISTRATION (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E6	CORE	Manage Oily Waste Management (OWM) program
E4	CORE	Prepare fuel and water reports
E7	CORE	Prepare full power and economy trial reports
E5	CORE	Prepare Quality Assurance (QA) packages
E5	CORE	Prepare Quality Assurance (QA) repair forms
E4	CORE	Record dry bulb temperature readings
E4	CORE	Record meter readings
E5	CORE	Review automated alarm data logs
E6	CORE	Review Quality Assurance (QA) packages
E7	CORE	Review Quality Assurance (QA) repair forms
E6	CORE	Update Engineering Operational Sequencing System (EOSS) publications
E4	CORE	Update fuel logs
E4	CORE	Update Lube Oil (LO) logs
E5	CORE	Validate Engineering Operational Sequencing System (EOSS) publications changes
E6	CORE	Verify engineering bulletins and changes
E7	CORE	Verify fuel and water reports
E7	CORE	Verify fuel logs
E7	CORE	Verify Lube Oil (LO) logs

Job Title

Gas Turbine Mechanical Systems Maintainer

Job Code

003698

Job Family

Production

NOC

TBD

Short Title (30 Characters)

GAS TURBINE M SYSTEM MAINT

Short Title (14 Characters)

GT MECH MAINT

Pay Plan

Enlisted

Career Field

GSM

Other Relationships and Rules

NEC UXXX series or other NECs as assigned

Job Description

Gas Turbine Mechanical Systems Maintainers maintain and operate Ship's Service Gas Turbine Generators (SSGTG) and support systems; maintain Controllable Reversible/Pitch Propeller (CRP/CP) systems; operate electric plant controls and main propulsion equipment, pumps, turning gears, air compressors, oil purification systems, low pressure air dehydrators, and engineering control systems; work with blueprints, schematics, and charts to maintain and repair Gas Turbine Engines (GTE) and auxiliary equipment; perform preventive maintenance on ship's fuel systems and air systems, Sea Water Service Systems (SWSS), waste drain systems, oil purification systems, and manually operated valves; perform work area inspections; operate standard test equipment; test lubricating oil and distillate fuels for contamination, neutralization, and precipitation; conduct engine checks to verify performance and replace and/or adjust operating tolerance of contacts, micro-switches, relay switches, pressure switches and temperature switches; and perform all administrative procedures related to gas turbine propulsion system operation and maintenance. Maintainers work under the supervision of a mentor while learning the trade or skill.

DoD Relationship

O*NET Relationship

Group Title

Auxiliaries

DoD Code

165200

Occupation Title

Power Plant Operators

SOC Code

51-8013.00

Job Family

Production

Skills

Equipment Maintenance

Quality Control Analysis

Operation and Control

Operation Monitoring

Coordination

Reading Comprehension

Equipment Selection

Writing

Active Learning

Management of Material Resources

Abilities

Written Comprehension

Problem Sensitivity

Manual Dexterity

Deductive Reasoning

Written Expression

Arm-Hand Steadiness

Finger Dexterity

Mathematical Reasoning

Control Precision

Extent Flexibility

AUXILIARY EQUIPMENT

Paygrade

Task Type

Task Statements

E4	CORE	Align bleed air systems (i.e., start air, prairie, masker, anti-icing)
E4	CORE	Align Fuel Oil (FO) purifiers
E4	CORE	Align JP-5 systems
E4	CORE	Align Low Pressure Air Compressors (LPAC)
E4	CORE	Align Low Pressure Air Dehydrator (LPAD)
E4	CORE	Align oily waste systems
E4	CORE	Align waste oil systems
E4	CORE	Conduct preventive maintenance on Low Pressure Air Dehydrator (LPAD)
E4	CORE	Conduct preventive maintenance on auxiliary lube oil filters
E4	CORE	Conduct preventive maintenance on bleed air systems (i.e., start air, prairie, masker, anti-icing)
E4	CORE	Conduct preventive maintenance on Fuel Oil (FO) system
E4	CORE	Conduct preventive maintenance on JP-5 systems
E4	CORE	Conduct preventive maintenance on Seawater Systems (SWS)
E4	CORE	Conduct preventive maintenance on system valves
E4	CORE	Conduct preventive maintenance on temperature regulating valves

AUXILIARY EQUIPMENT (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Measure fuel tank levels
E4	CORE	Sample fluids

GAS TURBINE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Align Gas Turbine Generator (GTG) locally and remotely
E4	CORE	Align Gas Turbine Generator (GTG) support systems
E4	CORE	Align Gas Turbine Module (GTM) synthetic Lube Oil (LO) systems
E4	CORE	Conduct Gas Turbine Module (GTM) support system alignment checks
E4	CORE	Conduct inlet preservations
E4	CORE	Conduct preventive maintenance on blow-in doors
E4	CORE	Conduct preventive maintenance on Foreign Object Damage (FOD) screens
E4	CORE	Conduct preventive maintenance on Gas Turbine Engine (GTE) base enclosures
E4	CORE	Conduct preventive maintenance on Gas Turbine Engine (GTE) inlet and exhaust systems
E4	CORE	Conduct preventive maintenance on Gas Turbine Engine (GTE) Lube Oil (LO) system components
E4	CORE	Conduct preventive maintenance on Gas Turbine Engine (GTE) water wash systems
E4	CORE	Conduct preventive maintenance on Gas Turbine Generator (GTG) set

MAIN PROPULSION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Align Controllable Pitch Propeller (CPP) or Controllable Reversible Pitch (CRP) systems
E4	CORE	Align Fuel Oil (FO) coalescer
E4	CORE	Align High Pressure (HP) start air systems
E4	CORE	Align Lube Oil (LO) purifiers
E4	CORE	Align main Lube Oil (LO) service systems
E4	CORE	Align Main Reduction Gear (MRG) Lube Oil (LO) pumps
E4	CORE	Conduct preventive maintenance on Controllable Pitch Propeller (CPP) or Controllable Reversible Pitch (CRP) systems
E4	CORE	Conduct preventive maintenance on Fuel Oil (FO) coalescers
E4	CORE	Conduct preventive maintenance on Fuel Oil (FO) service system
E4	CORE	Conduct preventive maintenance on Main Reduction Gear (MRG) Lube Oil (LO) strainers
E4	CORE	Conduct Propulsion Local Control Console (PLCC) operations
E4	CORE	Conduct Shaft Control Unit (SCU) operations
E4	CORE	Fabricate sealing gaskets
E4	CORE	Maintain Fuel Oil (FO) pre-filter components

TECHNICAL ADMINISTRATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Annotate automated alarm data logs
E4	CORE	Prepare fuel and water reports
E4	CORE	Record dry bulb temperature readings
E4	CORE	Record meter readings
E4	CORE	Update fuel logs
E4	CORE	Update Lube Oil (LO) logs