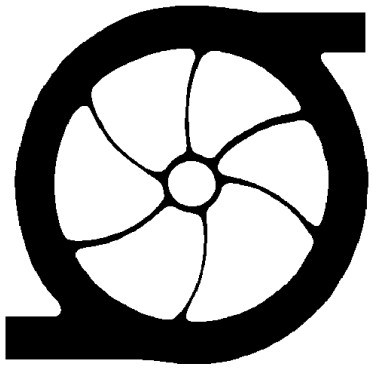
CHAPTER 39



GAS TURBINE SYSTEMS TECHNICIAN (GS)

NAVPERS 18068-39E
CH-58

Updated: April 2014

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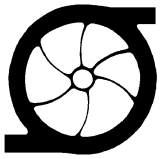
NAVY ENLISTED OCCUPATIONAL STANDARDS

FOR

GAS TURBINE SYSTEMS TECHNICIAN (ELECTRICAL) (GSE)



SCOPE OF RATING

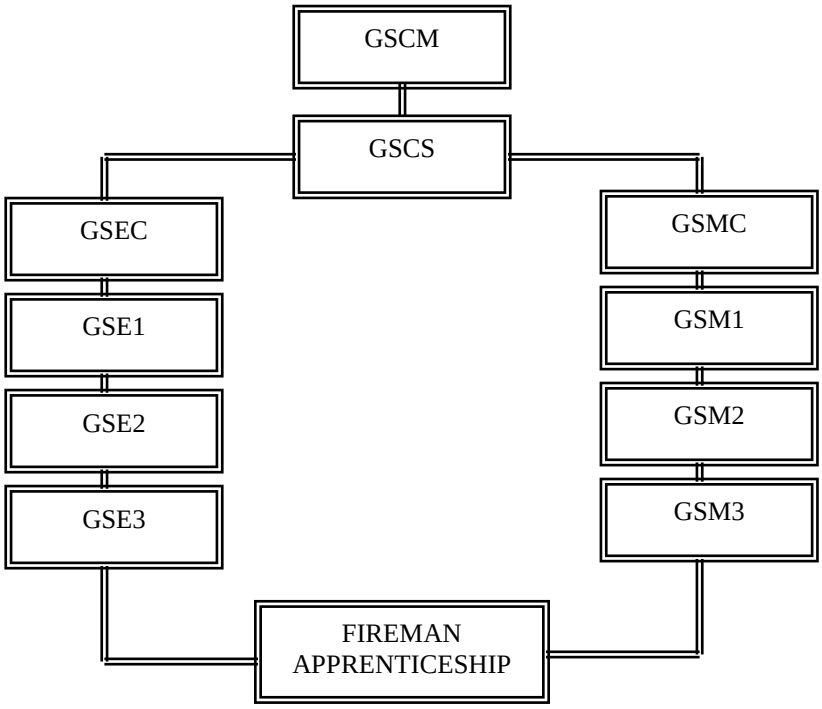
Gas Turbine Systems Technicians (GS) operate, repair, and perform organizational and intermediate maintenance on ships propulsion Gas Turbine Engines (GTE), Ships Service Gas Turbine Generators (SSGTG), main propulsion machinery (including gears, shafting, and Controllable Pitch Propellers (CPP)), assigned 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 (Electrical) (GSE) operate, repair, and perform organizational and intermediate maintenance on electrical components of ship's propulsion Gas Turbine Engines (GTE), Ship's Service Gas Turbine Generators (SSGTG), electrical distribution equipment, assigned auxiliary equipment (including AC motors, motor operated valves, solenoid operated valves, logic controllers, and automatic bus transfer systems), machinery control systems, assigned electrical and electronic equipment up to the printed circuit boards, and alarm and warning circuitry.

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 **Job Code**

Gas Turbine Electrical Systems Maintainer 003202

Job Family	NOC	Short Title (30 Characters)	Short Title (10 Characters)
Installation, Maintenance, and Repair	TBD	GAS TURBINE E SYSTEM MAINT	GTE S MAN

Pay Plan	Career Field	Other Relationships and Rules
Enlisted	GSE	NEC 41XX series

Job Description

Gas Turbine Electrical Systems Maintainers operate the electric plant and main propulsion control equipment; locate circuit failures and replace parts; measure current, voltage, and resistance; test for shorts, grounds, and continuity; test protective circuitry; test, service, and replace batteries; perform preventive maintenance on digital data equipment; control and monitor circuits; measure insulation resistance; inspect electrical/electronic cables, wiring, and connectors; maintain alarm, indicating, and warning systems; maintain Gas Turbine Engines (GTE) and auxiliary equipment; work with blueprints, schematics, and charts; perform administrative procedures related to gas turbine propulsion system operation and maintenance; perform work area inspections; operate standard test equipment; stop engines and check for proper performance; and replace and adjust operating tolerance of contacts, micro switches, relay switches, pressure switches, and temperature switches. Maintainers work under the supervision of a mentor while learning the trade or skill.

DoD Relationship

Group Title	*DoD Code*
Auxiliaries	165200

O*NET Relationship

Occupation Title	*SOC Code*	*Job Family*
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	49-2095.00	Installation, Maintenance, and Repair

Skills	Abilities
Troubleshooting	*Multi-limb Coordination*
Equipment Maintenance	*Extent Flexibility*
Operation Monitoring	*Selective Attention*
Operation and Control	*Problem Sensitivity*
Complex Problem Solving	*Arm-Hand Steadiness*
Monitoring	*Control Precision*
Quality Control Analysis	*Written Expression*
Writing	*Information Ordering*
Operations Analysis	*Inductive Reasoning*
Repairing	*Written Comprehension*

AUXILIARY EQUIPMENT

Paygrade	Task Type	Task Statements
E4	CORE	Adjust Tank Level Indicators (TLI)
E4	CORE	Align main Seawater System (SWS) cooling pumps
E4	CORE	Align main switchboards
E4	CORE	Align waste oil systems
E4	CORE	Maintain air compressors
E4	CORE	Maintain air system alarms and indicators
E4	CORE	Maintain bus transfer switches
E4	CORE	Maintain electrical controllers
E4	CORE	Maintain electrical motors
E4	CORE	Maintain electrical relays
E4	CORE	Maintain electrically-operated valves
E4	CORE	Maintain halon systems
E4	CORE	Maintain hydraulic systems
E4	CORE	Maintain level control components
E5	CORE	Maintain main switchboards and switchboard components
E5	CORE	Maintain pressure control components

E4	CORE	Maintain Seawater System (SWS) strainers
E4	CORE	Maintain tank level control and indicating devices
E4	CORE	Maintain temperature regulating devices
E4	CORE	Replace automatic control valves
E4	CORE	Test ships service air systems
E5	CORE	Troubleshoot main Seawater System (SWS) cooling pumps
E5	CORE	Troubleshoot main switchboards
E5	CORE	Troubleshoot waste oil systems

GAS TURBINE

Paygrade	**Task Type**	**Task Statements**
E4	CORE	Align Fuel Oil (FO) coalescers
E4	CORE	Align Fuel Oil (FO) service, fill, and transfer systems
E4	CORE	Align Fuel Systems Control Consoles (FSCC)
E4	CORE	Align Gas Turbine (GT) generator sets for pre-operational and support system alignment checks
E4	CORE	Align Gas Turbine (GT) generator sets locally and remotely
E4	CORE	Align Gas Turbine (GT) Lube Oil (LO) systems
E4	CORE	Align Gas Turbine Engines (GTE) for pre-operational and engine support system alignment checks
E4	CORE	Align Gas Turbine Engines (GTE) locally and remotely
E4	CORE	Maintain blow-in doors
E4	CORE	Maintain demister pads or filter agglomerators
E4	CORE	Maintain detector components
E4	CORE	Maintain Fuel Oil (FO) coalescers
E4	CORE	Maintain Fuel Oil (FO) systems
E5	CORE	Maintain Gas Turbine (GT) compressor sections
E4	CORE	Maintain Gas Turbine (GT) fuel systems
E4	CORE	Maintain Gas Turbine (GT) generator assembly components
E4	CORE	Maintain Gas Turbine (GT) generators
E4	CORE	Maintain Gas Turbine (GT) inlet and exhaust system components
E4	CORE	Maintain Gas Turbine (GT) Lube Oil (LO) systems
E4	CORE	Maintain Gas Turbine (GT) module components
E5	CORE	Maintain Gas Turbine (GT) power turbine components
E4	CORE	Maintain Gas Turbine (GT) water wash systems
E5	CORE	Maintain Gas Turbine Engine (GTE) components
E4	CORE	Maintain intake louvers
E4	CORE	Maintain wiring harnesses
E4	CORE	Test equipment vibration sensors
E5	CORE	Troubleshoot Fuel Oil (FO) coalescers
E5	CORE	Troubleshoot Fuel Oil (FO) service, fill, and transfer systems
E5	CORE	Troubleshoot Fuel Systems Control Consoles (FSCC)
E5	CORE	Troubleshoot Gas Turbine (GT) engines locally and remotely
E5	CORE	Troubleshoot Gas Turbine (GT) generator sets locally and remotely
E5	CORE	Troubleshoot Gas Turbine (GT) lube oil systems

MAIN PROPULSION

Paygrade	Task Type	Task Statements
E4	CORE	Align Controllable Pitch Propeller (CPP) or Controllable Reversible Pitch (CRP) systems
E4	CORE	Align jacking gears
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	Inspect fluid samples
E4	CORE	Maintain cannon plugs
E4	CORE	Maintain Controllable Reversible Pitch (CRP) or Controllable Pitch Propeller (CPP) systems
E5	CORE	Maintain Main Reduction Gear (MRG) clutch and brake assembly components
E5	CORE	Maintain Main Reduction Gear (MRG) components
E4	CORE	Maintain Main Reduction Gear (MRG) Lube Oil (LO) strainers
E4	CORE	Maintain Main Reduction Gear (MRG) Lube Oil (LO) systems
E5	CORE	Maintain oil purifiers
E4	CORE	Maintain pressure and temperature switch components
E4	CORE	Sample fluids
E5	CORE	Troubleshoot Controllable Reversible Pitch (CRP) or Controllable Pitch Propeller (CPP) systems
E5	CORE	Troubleshoot jacking gears
E5	CORE	Troubleshoot Lube Oil (LO) purifiers
E5	CORE	Troubleshoot main Lube Oil (LO) service systems
E5	CORE	Troubleshoot Main Reduction Gear (MRG) lube oil pumps

PROPULSION CONTROL SYSTEMS

Paygrade	Task Type	Task Statements
E5	CORE	Adjust alarm set points
E4	CORE	Adjust indicating micro switches
E4	CORE	Adjust power supplies
E4	CORE	Align Damage Control Consoles (DCC)
E4	CORE	Align Electric Plant Control Consoles (EPCC)
E4	CORE	Align Local Operating Panels (LOP)
E4	CORE	Align Propulsion and Auxiliary Control Console (PACC) for pre-operational checks
E4	CORE	Align Shaft Control Units (SCU)
E4	CORE	Align Ship Control Consoles (SCC)
E4	CORE	Document console ground readings
E4	CORE	Maintain automatic control valves
E4	CORE	Maintain automatic electronic controls
E4	CORE	Maintain console cooling fan components
E4	CORE	Maintain console filters
E4	CORE	Maintain Damage Control Consoles (DCC)
E4	CORE	Maintain Electric Plant Control Consoles (EPCC)
E4	CORE	Maintain electronic enclosures
E4	CORE	Maintain Engineering Officer of the Watch (EOOW) logging unit
E4	CORE	Maintain indicating relays

E4	CORE	Maintain Light Emitting Diode (LED) circuits
E4	CORE	Maintain Local Operating Panels (LOP)
E4	CORE	Maintain Machinery Control Systems (MCS)
E4	CORE	Maintain panel gauges
E4	CORE	Maintain panel meters
E4	CORE	Maintain power supplies
E4	CORE	Maintain Propulsion Local Control Consoles (PLCC)
E4	CORE	Maintain Shaft Control Units (SCU)
E4	CORE	Maintain Ship Control Consoles (SCC)
E4	CORE	Maintain storage batteries
E5	CORE	Replace frequency regulator components
E5	CORE	Troubleshoot Damage Control Consoles (DCC)
E5	CORE	Troubleshoot Electric Plant Control Consoles (EPCC)
E5	CORE	Troubleshoot Local Operating Panels (LOP)
E5	CORE	Troubleshoot Ship Control Consoles (SCC)

TECHNICAL ADMINISTRATION

Paygrade	**Task Type**	**Task Statements**
E4	CORE	Log fuel tank levels
E4	CORE	Log meter readings
E4	CORE	Maintain bell and data logger
E5	CORE	Prepare equipment calibration schedules
E6	CORE	Prepare Quality Assurance (QA) packages
E6	CORE	Review automated alarm data logs
E4	CORE	Update Gas Turbine (GT) operating logs

Job Title **Job Code**

Gas Turbine Electrical Systems Technician 003654

Job Family	NOC	Short Title (30 Characters)	Short Title (10 Characters)
Installation, Maintenance, and Repair	TBD	GAS TURBINE E SYSTEM TEC	GTE S TEC

Pay Plan	Career Field	Other Relationships and Rules
Enlisted	GSE	NEC 41XX series

Job Description

Gas Turbine Electrical Systems Technicians operate the electric plant and main propulsion control equipment; locate circuit failures and replace parts; measure current, voltage and resistance; test for shorts, grounds and continuity; test protective circuitry; test, service, and replace batteries; perform preventive maintenance on digital data equipment and control and monitor circuits; measure insulation resistance; repair electrical/electronic cables, wiring, and connectors; maintain alarm, indicating and warning systems; maintain and repair Gas Turbine Engines (GTE) and auxiliary equipment; work with blueprints, schematics, and charts; perform administrative procedures related to gas turbine propulsion system operation and maintenance; perform work area inspections; operate standard test equipment; stop engines and check for proper performance; and replace and adjust operating tolerance of contacts, micro switches, relay switches, pressure switches, and temperature switches. Technicians are expected to perform work independently and mentor Gas Turbine Electrical Systems Maintainers with very limited supervision.

DoD Relationship

Group Title	*DoD Code*
Auxiliaries	165200

O*NET Relationship

Occupation Title	*SOC Code*	*Job Family*
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	49-2095.00	Installation, Maintenance, and Repair

Skills	Abilities
Troubleshooting	*Multi-limb Coordination*
Equipment Maintenance	*Extent Flexibility*
Operation Monitoring	*Selective Attention*
Operation and Control	*Arm-Hand Steadiness*
Quality Control Analysis	*Control Precision*
Complex Problem Solving	*Deductive Reasoning*
Critical Thinking	*Information Ordering*
Monitoring	*Inductive Reasoning*
Writing	*Problem Sensitivity*
Repairing	*Written Comprehension*

AUXILIARY EQUIPMENT

Paygrade	Task Type	Task Statements
E5	CORE	Adjust Fuel Systems Control Consoles (FSCC)
E5	CORE	Adjust Propulsion and Auxiliaries Control Console (PACC) or Auxiliary Control Consoles (ACC)
E4	CORE	Maintain Fuel Systems Control Consoles (FSCC)
E5	CORE	Maintain main switchboards and switchboard components
E4	CORE	Replace automatic control valves
E5	CORE	Test frequency regulators
E5	CORE	Test hydraulic system components
E5	CORE	Test voltage regulators

GAS TURBINE

Paygrade	Task Type	Task Statements
E4	CORE	Conduct Gas Turbine Engine (GTE) component functional checks
E7	CORE	Conduct Gas Turbine Engine (GTE) Inlet System inspections and closeouts
E6	CORE	Document generator stator winding readings
E7	CORE	Inspect Gas Turbine Engine (GTE) internal components

E4	CORE	Maintain blow-in doors
E4	CORE	Maintain Fuel Oil (FO) systems
E5	CORE	Maintain Gas Turbine (GT) compressor sections
E4	CORE	Maintain Gas Turbine (GT) fuel systems
E4	CORE	Maintain Gas Turbine (GT) generator assembly components
E4	CORE	Maintain Gas Turbine (GT) generators
E4	CORE	Maintain Gas Turbine (GT) Lube Oil (LO) systems
E4	CORE	Maintain Gas Turbine (GT) module components
E5	CORE	Maintain Gas Turbine (GT) power turbine components
E5	CORE	Maintain Gas Turbine Engine (GTE) components
E4	CORE	Maintain wiring harnesses

MAIN PROPULSION

Paygrade	**Task Type**	**Task Statements**
E4	CORE	Maintain Controllable Reversible Pitch (CRP) or Controllable Pitch Propeller (CPP) systems
E5	CORE	Maintain Main Reduction Gear (MRG) clutch and brake assembly components
E5	CORE	Maintain Main Reduction Gear (MRG) components

PROPULSION CONTROL SYSTEMS

Paygrade	**Task Type**	**Task Statements**
E5	CORE	Adjust frequency regulators
E4	CORE	Adjust indicating micro switches
E4	CORE	Adjust potentiometers
E5	CORE	Adjust voltage regulators
E6	CORE	Align Engineering Officer of the Watch (EOOW) logging units
E4	CORE	Align Propulsion and Auxiliary Control Console (PACC) for pre-operational checks
E5	CORE	Conduct Propulsion and Auxiliary Control Console (PACC) operations
E4	CORE	Conduct Propulsion Local Control Console (PLCC) operations
E5	CORE	Conduct Shaft Control Unit (SCU) operations
E4	CORE	Maintain automatic control valves
E4	CORE	Maintain automatic electronic controls
E5	CORE	Maintain converter and inverter components
E4	CORE	Maintain electronic enclosures
E4	CORE	Maintain Engineering Officer of the Watch (EOOW) logging unit
E4	CORE	Maintain indicating micro switches
E4	CORE	Maintain Machinery Control Systems (MCS)
E4	CORE	Maintain Propulsion and Auxiliary Control Consoles (PACC), Propulsion Control Consoles (PCC), or Auxiliary Control Consoles (ACC)
E5	CORE	Replace frequency regulator components
E5	CORE	Test Auxiliary Control Consoles (ACC)
E5	CORE	Test converter and inverter components
E4	CORE	Test indicating micro switches
E5	CORE	Troubleshoot Auxiliary Control Consoles (ACC)
E5	CORE	Troubleshoot converter and inverter components

E4	CORE	Troubleshoot indicating micro switches
E5	CORE	Troubleshoot Propulsion and Auxiliary Control Consoles (PACC)
E5	CORE	Troubleshoot Propulsion Local Control Consoles (PLCC)
E5	CORE	Troubleshoot Shaft Control Units (SCU)

TECHNICAL ADMINISTRATION

Paygrade	**Task Type**	**Task Statements**
E7	CORE	Approve Quality Assurance (QA) packages
E4	CORE	Log fuel tank levels
E4	CORE	Log meter readings
E4	CORE	Maintain heat stress sensors
E7	CORE	Maintain Marine Gas Turbine Service Records (MGTSR)
E5	CORE	Prepare equipment calibration schedules
E6	CORE	Prepare Quality Assurance (QA) packages
E5	CORE	Prepare Quality Assurance (QA) repair forms
E6	CORE	Review automated alarm data logs
E6	CORE	Review Integrated Condition Assessment System (ICAS) for engineering and equipment degradations
E6	CORE	Review Quality Assurance (QA) packages
E5	CORE	Update Quality Assurance (QA) repair forms
E6	CORE	Verify engineering bulletins and changes