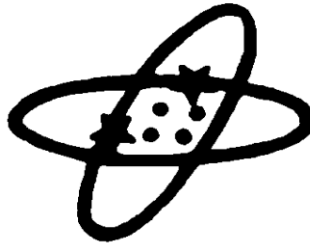


CHAPTER 32



ELECTRONICS TECHNICIAN, SUBMARINE, NAVIGATION (ETV)

NAVPERS 18068-32H
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NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

ELECTRONICS TECHNICIAN, SUBMARINE, NAVIGATION (ETV)



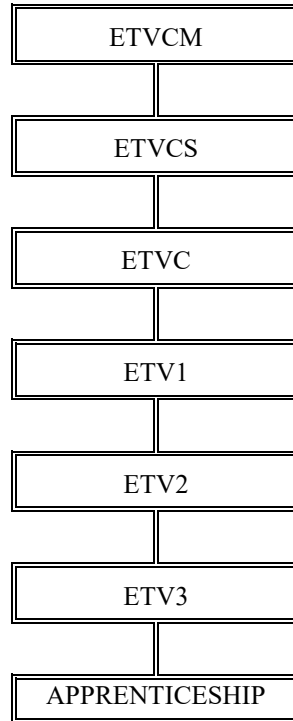
SCOPE OF RATING

Electronics Technicians, Submarine, Navigation (ETV) operate and perform maintenance on electronic equipment used for detection, tracking, recognition, and identification of maritime vessels and navigational aids; operate and perform maintenance on Interior Communications (IC), alarms, warnings and indicators, ship's control, entertainment, atmosphere control, instrumentation, and control systems; operate and maintain radar, gyrocompass, inertial navigation, and auxiliary equipment used to safely and accurately navigate all classes of submarines; maintain highly accurate navigation data for use by external systems and subsystems; develop and execute navigation plans; perform ship control, navigation, and lookout duties; procure, correct, use, and stow navigation publications and charts; and stand watch as assistants to Officers of the Deck (OOD) and navigators.

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 18068H) as Chapter 32.

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**Submarine Navigation Operator****Job Code****001182****Job Family**

Installation, Maintenance, and Repair

NOC

TBD

Short Title (30 Characters)

SUBMARINE NAVIGATION OPERATOR

Short Title (14 Characters)

SUB NAV OPER

Pay Plan

Enlisted

Career Field

ETV

Other Relationships and Rules

NEC TXXX series or other NECs as assigned

Job Description

Submarine Navigation Operators operate electronic equipment used for detection, tracking, recognition and identification of maritime vessels and aids to navigation; operate and perform basic preventive maintenance on Radio Detection and Ranging (RADAR) systems, Interior Communications (IC) circuits and systems, fathometers, Electronic Chart Display and Information System (ECDIS), alarm systems, ship's control stations, entertainment systems, Inertial Navigation System (INS), Central Atmosphere Monitoring Systems (CAMS), Navigation Processor Unit (NPU), Remote Interface Controller (RIC), liquid level detection and tank level indication circuits, flowmeters, pressure and temperature sensing circuits, valve position indicators, hovering systems, depth control systems, and missile compensation systems; procure, inventory, and update electronic charts and publications; prepare navigation voyage plans and maintain electronic navigation logs and records; stand navigation-related watches; make reports to and advise the Officer of the Deck (OOD) on Navigation Rules and Regulations, navigation plans, and other navigation matters. Submarine Navigation Operators usually work under the supervision of a Submarine Navigation Technician or Submarine Navigation Manager.

DoD Relationship**Group Title**Navigation,
Communication, and
Countermeasure, N.E.C.**DoD Code**

110200

O*NET Relationship**Occupation Title**Electrical and Electronics
Repairers, Commercial and
Industrial Equipment**SOC Code**

49-2094.00

Job FamilyInstallation, Maintenance,
and Repair**Skills***Equipment Maintenance**Management of Material Resources**Complex Problem Solving**Mathematics**Operation and Control**Critical Thinking**Quality Control Analysis**Troubleshooting**Systems Analysis**Operation Monitoring***Abilities***Deductive Reasoning**Inductive Reasoning**Problem Sensitivity**Written Comprehension**Selective Attention**Extent Flexibility**Mathematical Reasoning**Information Ordering**Finger Dexterity**Manual Dexterity***ADMINISTRATION****Paygrade**

E4

Task Type

CORE

Task Statements

Compute celestial event times (e.g., sunrise/sunset, moonrise/moonset, high/low tides, etc.)

E4

CORE

Maintain chronometers

E4

NON-CORE

Maintain entertainment media inventories

E4

CORE

Maintain navigation messages (e.g., Operational Orders (OPORD), Operations Schedules (OPSKED), Submarine Notices (SUBNOTE), etc.)

E4

CORE

Maintain navigation records (e.g., deck logs, bearing logs, position logs, etc.)

E5

CORE

Prepare navigational information data packages

E4

CORE

Supervise colors

E4

CORE

Update Strategic Weapons System (SWS) special publications

CHART PREPARATIONS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Calculate turn information (e.g., slide bar, turn bearing, turn range, etc.)
E4	CORE	Create parameters for Commanding Officers Safe Operating Envelope (COSOE) (e.g., cross track error, red/yellow sounding, maximum operating depth, etc.)
E4	CORE	Establish voyage plans (e.g., Plan of Intended Movement (PIM), departure/arrival, Speed of Advance (SOA), etc.)
E4	CORE	Extract required information from navigation publications
E4	CORE	Maintain navigation chart and publication allowances (e.g., inventory, order, update, etc.)
E4	CORE	Plot anchorages
E4	CORE	Plot moving havens
E4	CORE	Plot navigational hazards (e.g., danger ranges, danger bearings, shoal water, etc.)
E4	CORE	Prepare charts for navigation (e.g., voyage plan checklists, piloting checklists)
E6	CORE	Review navigation charts
E5	CORE	Select required charts for proposed transits
E4	CORE	Update digital nautical charts

COMMUNICATIONS AND ALARM SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Adjust alarm switchboards
E4	CORE	Adjust amplified communication systems
E4	CORE	Align sound-powered telephone distribution matrices
E4	CORE	Clean alarm switchboards
E4	CORE	Clean amplified communication systems
E4	CORE	Clean liquid level alarm sensing devices
E4	CORE	Clean pressure alarm sensing devices
E4	CORE	Clean shore telephone systems
E4	CORE	Clean sound-powered telephone systems
E4	CORE	Derig shore telephone lines
E4	CORE	Inspect alarm switchboards
E4	CORE	Inspect amplified communication systems
E4	CORE	Inspect liquid level alarm sensing devices
E4	CORE	Inspect pressure alarm sensing devices
E4	CORE	Inspect shore telephone systems
E4	CORE	Inspect sound-powered telephone systems
E4	CORE	Install Portable Ship Control Units (PSCU)
E4	CORE	Remove Portable Ship Control Units (PSCU)
E4	CORE	Repair amplified communication system components (e.g., loud speakers, microphones, amplifiers, etc.)
E4	CORE	Repair shore telephone systems
E4	CORE	Repair sound-powered telephone systems
E4	CORE	Replace amplified communication system components

COMMUNICATIONS AND ALARM SYSTEMS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Rig shore telephone lines
E4	CORE	Test alarm switchboards
E4	CORE	Test amplified communications system components (e.g., microphones, loudspeakers, intercommunicating stations, etc.)
E4	CORE	Test liquid level alarm sensing devices
E4	CORE	Test pressure alarm sensing devices
E5	CORE	Troubleshoot alarm switchboards
E4	CORE	Troubleshoot amplified communication systems components (e.g., microphones, loudspeakers, intercommunicating stations, etc.)
E4	CORE	Troubleshoot Portable Ship Control Units (PSCU)
E4	CORE	Troubleshoot shore telephone systems
E4	CORE	Troubleshoot sound-powered telephone systems

ELECTRONIC NAVIGATION SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Adjust synchro signal amplifiers
E5	CORE	Calibrate Electromagnetic (EM) log indicator transmitters
E4	CORE	Calibrate gyrocompass systems
E5	CORE	Calibrate Inertial Navigation Systems (INS) and subsystems (e.g., Internal Frequency Standards (IFS), Navigation Sonar Systems (NSS), Inertial Navigation Systems (INS) Consoles, etc.)
E4	CORE	Clean Electromagnetic (EM) log indicator transmitters
E4	CORE	Clean gyrocompass systems
E4	CORE	Clean Inertial Navigation Systems (INS) and subsystems (e.g., Navigation Workstations (NWS), Navigation Sonar Systems (NSS), Inertial Navigation System (INS) consoles, etc.)
E4	CORE	Clean radar systems
E4	CORE	Clean synchro signal amplifiers
E4	CORE	Configure navigation subsystem equipment software
E4	CORE	Establish Inertial Navigation Systems (INS) and subsystems required operating condition (e.g., startup, shut down, navigate, etc.)
E4	CORE	Establish required radar operating condition (e.g., startup, shut down, etc.)
E4	CORE	Establish required Voyage Management Systems (VMS) operating condition (e.g., start up, shutdown, etc.)
E4	CORE	Evaluate Inertial Navigation Systems (INS) and subsystems performance (e.g., Global Positioning Systems (GPS), Navigation Sonar Systems (NSS), Inertial Navigation Systems (INS) Consoles, etc.)
E4	CORE	Input navigation and voyage plans into the Voyage Management System (VMS)
E4	CORE	Inspect Electromagnetic (EM) log indicator transmitters
E4	CORE	Inspect gyrocompass systems
E4	CORE	Inspect Inertial Navigation Systems (INS) and subsystems (e.g., Navigation Sonar Systems (NSS), Inertial Navigation Systems (INS) consoles, Navigations Workstations (NWS), etc.)
E4	CORE	Inspect radar system components

ELECTRONIC NAVIGATION SYSTEMS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Inspect synchro signal amplifiers
E4	CORE	Interpret fathometer displays
E4	CORE	Interpret Inertial Navigation System (INS) data
E4	CORE	Interpret radar displays
E4	CORE	Obtain sounding data using fathometers
E5	CORE	Troubleshoot Electromagnetic (EM) log indicator transmitters and rodmeters
E4	CORE	Troubleshoot gyrocompass systems
E4	CORE	Troubleshoot Inertial Navigation Systems (INS) and subsystems (e.g., Navigation Workstations (NWS), Navigation Sonar Systems (NSS), Inertial Navigation System (INS) consoles, etc.)
E4	CORE	Troubleshoot synchro signal amplifiers

GENERAL ELECTRICAL SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Adjust Central Atmosphere Monitoring System (CAMS) equipment
E5	CORE	Adjust mast position indication system components (e.g., limit switches, position switches, proximity magnet switches, etc.)
E5	CORE	Adjust synchro repeater system components
E4	CORE	Calibrate Central Atmosphere Monitoring System (CAMS) equipment
E4	CORE	Clean aldis lamps
E4	CORE	Clean Central Atmosphere Monitoring System (CAMS) equipment
E4	CORE	Clean flow meter systems
E4	CORE	Clean mast position indication system components (e.g., limit switches, position switches, proximity magnet switches, etc.)
E4	CORE	Clean pressure sensing devices
E4	CORE	Clean ship's entertainment systems
E4	CORE	Clean synchro repeaters
E4	CORE	Clean valve control system components
E4	CORE	Clean valve position indicating system components
E4	CORE	Inspect aldis lamps
E4	CORE	Inspect Central Atmosphere Monitoring System (CAMS) equipment
E4	CORE	Inspect flowmeter systems
E4	CORE	Inspect mast position indication system components (e.g., limit switches, position switches, proximity magnet switches, etc.)
E4	CORE	Inspect pressure sensing devices
E4	CORE	Inspect ship's entertainment systems
E4	CORE	Inspect synchro repeaters
E4	CORE	Inspect temperature monitoring systems
E4	CORE	Inspect valve control system components
E4	CORE	Inspect valve position indicating system components
E4	CORE	Maintain ship's entertainment systems
E4	NON-CORE	Repair ship's entertainment systems

GENERAL ELECTRICAL SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Replace Central Atmosphere Monitoring System (CAMS) equipment components
E4	CORE	Replace mast position indicating system components
E4	CORE	Replace navigation lights
E4	CORE	Replace synchro repeater system components
E4	CORE	Replace valve position indicating system components
E4	CORE	Shutdown Central Atmosphere Monitoring System (CAMS) equipment
E4	CORE	Startup Central Atmosphere Monitoring System (CAMS) equipment
E4	CORE	Test ship's entertainment systems
E4	CORE	Troubleshoot Central Atmosphere Monitoring System (CAMS) equipment
E4	CORE	Troubleshoot flowmeter system components
E4	CORE	Troubleshoot mast position indication system components (e.g., limit switches, position switches, proximity magnet switches, etc.)
E4	CORE	Troubleshoot pressure sensing devices
E4	CORE	Troubleshoot ship's entertainment systems
E4	CORE	Troubleshoot synchro repeaters
E4	CORE	Troubleshoot valve control system components
E4	CORE	Troubleshoot valve position indication system components

NAVIGATION AND PILOTING

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	NON-CORE	Advise Officer of the Deck (OOD) of chain scope required for anchoring
E4	NON-CORE	Advise Officer of the Deck (OOD) of ocean depth and bottom (e.g., while at anchor, during piloting, submerged operations, etc.)
E4	CORE	Calculate environmental effects on ship's movements (e.g., wind, tide, set and drift, etc.)
E4	CORE	Calculate gyrocompass error
E4	CORE	Compare fathometer readings with charts
E4	CORE	Compare gyrocompass and inertial headings
E4	CORE	Compute advance and transfer
E4	CORE	Compute azimuths
E4	CORE	Compute course and speed made good
E4	CORE	Compute position uncertainty
E4	CORE	Compute radar and visual offset
E6	NON-CORE	Conduct strike group operations
E4	CORE	Convert between Greenwich Mean Time (GMT) and Zone Time (ZT)
E4	CORE	Convert between relative bearings and true bearings
E4	CORE	Correlate speed, time, and distance
E4	CORE	Evaluate radar information
E5	CORE	Evaluate ship's navigation and piloting information
E4	CORE	Extract required information from Naval messages (e.g., Operational Orders (OPORD), Operations Schedules (OPSKED), Submarine Notices (SUBNOTE), etc.)

NAVIGATION AND PILOTING (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Fix ship's position (e.g., bearing and range to single point, latitude/longitude, multiple soundings, etc.)
E4	CORE	Identify reduced visibility situations
E4	CORE	Identify signal flags and pennant displays
E4	CORE	Interpret navigation sound signals (e.g., bell, gong, whistle, etc.)
E4	CORE	Obtain visual bearings (e.g., alidade, periscope, seaman's eye, etc.)
E4	CORE	Plot weather message information
E4	CORE	Provide courses for ship's positioning (e.g., precision anchoring, storm evasion, contact management, etc.)
E4	CORE	Provide recommended actions based on Navigation Rules and Regulations
E4	CORE	Report aids to navigation (e.g., buoy systems, natural or man-made navigation aids, navigation lights, etc.)
E4	CORE	Report distress signals (e.g., flares, whistles, flags/pennants, etc.)

POWER GENERATION AND DISTRIBUTION SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Align Action Cut-Out (ACO) switchboards
E4	CORE	Align Interior Communications (IC) switchboards
E4	CORE	Clean Action Cut-Out (ACO) switchboards
E4	CORE	Clean Interior Communications (IC) switchboards
E4	CORE	Inspect Action Cut-Out (ACO) switchboard components
E4	CORE	Inspect Interior Communications (IC) switchboards
E4	CORE	Shift power sources using bus transfer devices (e.g., Automatic, Manual, etc.)
E5	CORE	Troubleshoot Action Cut-Out (ACO) switchboards
E4	CORE	Troubleshoot Interior Communications (IC) switchboards

SHIP CONTROL SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Clean Ballast Control Panels (BCP)
E4	CORE	Clean depth control systems (e.g., hovering, forward hovering, missile compensation, etc.)
E4	CORE	Clean depth sensing systems
E4	CORE	Clean Ship's Control Panels (SCP)
E4	CORE	Clean ship's control system components (e.g., Position Control Units (PCU), feedback transmitters, display screens, etc.)
E4	CORE	Inspect Ballast Control Panels (BCP)
E4	CORE	Inspect depth control systems (e.g., hovering, forward hovering, missile compensation, etc.)
E4	CORE	Inspect depth sensing system components
E4	CORE	Inspect Ship's Control Panels (SCP)
E4	CORE	Inspect ship's control system components (e.g., planes angle transmitters, depth/course rate, Remote Interface Controllers (RIC), etc.)

Job Title**Submarine Navigation Technician****Job Code****001187****Job Family**

Installation, Maintenance, and Repair

NOC

TBD

Short Title (30 Characters)

SUBMARINE NAVIGATION TEC

Short Title (14 Characters)

SUB NAV TECH

Pay Plan

Enlisted

Career Field

ETV

Other Relationships and Rules

NEC TXXX series or other NECs as assigned

Job Description

Submarine Navigation Technicians maintain, troubleshoot, and repair electronic equipment used for detection, tracking, recognition, and identification of maritime vessels; operate and maintain Radio Detection and Ranging (RADAR) systems, Interior Communications (IC) circuits and systems, Electronic Chart Display and Information System (ECDIS), alarm systems, ship's control stations, entertainment systems, Inertial Navigation System, Central Atmosphere Monitoring Systems (CAMS), Navigation Processor Unit (NPU), Remote Interface Controller (RIC), liquid level detection and tank level indication circuits, flowmeters, pressure and temperature sensing circuits, valve position indicators, hovering systems, depth control systems, and missile compensation systems; read and interpret schematics and block diagrams; apply working knowledge of electricity and electronics to repair equipment and interfacing devices; localize malfunctions and repair or replace faulty parts or subassemblies; align, adjust, calibrate, and perform corrective maintenance on navigation equipment; supervise maintenance and maintain navigation division records. Submarine Navigation Technicians work independently and train Submarine Navigation Operators.

DoD Relationship**Group Title**Navigation,
Communication, and
Countermeasure, N.E.C.**DoD Code**

110200

O*NET Relationship**Occupation Title**Electrical and Electronics
Repairers, Commercial and
Industrial Equipment**SOC Code**

49-2094.00

Job FamilyInstallation, Maintenance,
and Repair**Skills***Equipment Maintenance**Troubleshooting**Complex Problem Solving**Management of Material Resources**Systems Analysis**Operation and Control**Quality Control Analysis**Repairing**Installation**Operation Monitoring***Abilities***Deductive Reasoning**Inductive Reasoning**Problem Sensitivity**Written Comprehension**Extent Flexibility**Selective Attention**Multi-limb Coordination**Finger Dexterity**Manual Dexterity**Information Ordering***ADMINISTRATION****Paygrade****Task Type****Task Statements**

E5

NON-CORE

Create Quality Assurance (QA) packages

E4

CORE

Interpret schematic diagrams

E4

CORE

Maintain navigation messages (e.g., Operational Orders (OPORD), Operations Schedules (OPSKED), Submarine Notices (SUBNOTE), etc.)

E5

CORE

Prepare navigational information data packages

E5

CORE

Prepare piloting and operations briefs

E4

CORE

Supervise colors

E5

CORE

Verify schematics

CHART PREPARATIONS**Paygrade****Task Type****Task Statements**

E4

CORE

Create parameters for Commanding Officers Safe Operating Envelope (COSOE) (e.g., cross track error, red/yellow sounding, maximum operating depth, etc.)

E4

CORE

Establish voyage plans (e.g., Plan of Intended Movement (PIM), departure/arrival, Speed of Advance (SOA), etc.)

E4

CORE

Extract required information from navigation publications

CHART PREPARATIONS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Maintain navigation chart and publication allowances (e.g., inventory, order, update, etc.)
E4	CORE	Plot moving havens
E4	CORE	Plot navigational hazards (e.g., danger ranges, danger bearings, shoal water, etc.)
E4	CORE	Prepare charts for navigation (e.g., voyage plan checklists, piloting checklists)
E6	CORE	Review navigation charts
E5	CORE	Select required charts for proposed transits
E4	CORE	Update digital nautical charts

COMMUNICATIONS AND ALARM SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Adjust alarm switchboards
E4	CORE	Adjust amplified communication systems
E4	CORE	Align sound-powered telephone distribution matrices
E4	CORE	Clean alarm switchboards
E4	CORE	Clean amplified communication systems
E4	CORE	Clean liquid level alarm sensing devices
E4	CORE	Clean pressure alarm sensing devices
E4	CORE	Clean shore telephone systems
E4	CORE	Clean sound-powered telephone systems
E4	CORE	Derig shore telephone lines
E4	CORE	Inspect alarm switchboards
E4	CORE	Inspect amplified communication systems
E4	CORE	Inspect liquid level alarm sensing devices
E4	CORE	Inspect pressure alarm sensing devices
E4	CORE	Inspect shore telephone systems
E4	CORE	Inspect sound-powered telephone systems
E4	CORE	Install Portable Ship Control Units (PSCU)
E4	CORE	Program shore telephone systems
E4	CORE	Remove Portable Ship Control Units (PSCU)
E5	CORE	Repair alarm switchboards
E4	CORE	Repair amplified communication system components (e.g., loud speakers, microphones, amplifiers, etc.)
E4	CORE	Repair liquid level alarm sensing devices
E4	CORE	Repair pressure alarm sensing devices
E4	CORE	Repair shore telephone systems
E4	CORE	Repair sound-powered telephone systems
E4	CORE	Replace amplified communication system components
E4	CORE	Rig shore telephone lines
E4	CORE	Test alarm switchboards

COMMUNICATIONS AND ALARM SYSTEMS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Test amplified communications system components (e.g., microphones, loudspeakers, intercommunicating stations, etc.)
E4	CORE	Test liquid level alarm sensing devices
E4	CORE	Test pressure alarm sensing devices
E5	CORE	Troubleshoot alarm switchboards
E4	CORE	Troubleshoot amplified communication systems components (e.g., microphones, loudspeakers, intercommunicating stations, etc.)
E4	CORE	Troubleshoot Portable Ship Control Units (PSCU)
E4	CORE	Troubleshoot pressure alarm sensing devices
E4	CORE	Troubleshoot shore telephone systems
E4	CORE	Troubleshoot sound-powered telephone systems

ELECTRONIC NAVIGATION SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Adjust synchro signal amplifiers
E5	CORE	Calibrate Electromagnetic (EM) log indicator transmitters
E4	CORE	Calibrate gyrocompass systems
E5	CORE	Calibrate Inertial Navigation Systems (INS) and subsystems (e.g., Internal Frequency Standards (IFS), Navigation Sonar Systems (NSS), Inertial Navigation Systems (INS) Consoles, etc.)
E4	CORE	Clean Electromagnetic (EM) log indicator transmitters
E4	CORE	Clean gyrocompass systems
E4	CORE	Clean Inertial Navigation Systems (INS) and subsystems (e.g., Navigation Workstations (NWS), Navigation Sonar Systems (NSS), Inertial Navigation System (INS) consoles, etc.)
E4	CORE	Clean radar systems
E4	CORE	Clean synchro signal amplifiers
E4	CORE	Configure navigation subsystem equipment software
E4	CORE	Establish Inertial Navigation Systems (INS) and subsystems required operating condition (e.g., startup, shut down, navigate, etc.)
E4	CORE	Establish required radar operating condition (e.g., startup, shut down, etc.)
E4	CORE	Establish required Voyage Management Systems (VMS) operating condition (e.g., start up, shutdown, etc.)
E4	CORE	Input navigation and voyage plans into the Voyage Management System (VMS)
E4	CORE	Inspect Electromagnetic (EM) log indicator transmitters
E4	CORE	Inspect gyrocompass systems
E4	CORE	Inspect Inertial Navigation Systems (INS) and subsystems (e.g., Navigation Sonar Systems (NSS), Inertial Navigation Systems (INS) consoles, Navigations Workstations (NWS), etc.)
E4	CORE	Inspect radar system components
E4	CORE	Inspect synchro signal amplifiers
E4	CORE	Interpret fathometer displays
E4	CORE	Interpret Inertial Navigation System (INS) data

ELECTRONIC NAVIGATION SYSTEMS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Interpret radar displays
E4	CORE	Repair Inertial Navigation Systems (INS) and subsystems (e.g., Navigation Workstations (NWS), Navigation Sonar Systems (NSS), Inertial Navigation System (INS) consoles, etc.)
E4	CORE	Replace Electromagnetic (EM) log indicator transmitter components
E5	CORE	Replace radar system components
E5	CORE	Troubleshoot Electromagnetic (EM) log indicator transmitters and rodimeters
E4	CORE	Troubleshoot gyrocompass systems
E4	CORE	Troubleshoot Inertial Navigation Systems (INS) and subsystems (e.g., Navigation Workstations (NWS), Navigation Sonar Systems (NSS), Inertial Navigation System (INS) consoles, etc.)
E4	CORE	Troubleshoot radar system components
E4	CORE	Troubleshoot synchro signal amplifiers

GENERAL ELECTRICAL SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Adjust Central Atmosphere Monitoring System (CAMS) equipment
E5	CORE	Adjust mast position indication system components (e.g., limit switches, position switches, proximity magnet switches, etc.)
E5	CORE	Adjust synchro repeater system components
E4	CORE	Adjust valve control system components
E4	CORE	Adjust valve position indicating system components
E4	CORE	Calibrate Central Atmosphere Monitoring System (CAMS) equipment
E4	NON-CORE	Calibrate pressure sensing devices
E4	NON-CORE	Calibrate temperature monitoring systems
E4	CORE	Clean aldis lamps
E4	CORE	Clean Central Atmosphere Monitoring System (CAMS) equipment
E4	CORE	Clean flow meter systems
E4	CORE	Clean mast position indication system components (e.g., limit switches, position switches, proximity magnet switches, etc.)
E4	CORE	Clean pressure sensing devices
E4	CORE	Clean ship's entertainment systems
E4	CORE	Clean synchro repeaters
E4	CORE	Clean Tank Level Indicator (TLI) systems
E4	CORE	Clean valve control system components
E4	CORE	Clean valve position indicating system components
E4	CORE	Inspect aldis lamps
E4	CORE	Inspect Central Atmosphere Monitoring System (CAMS) equipment
E4	CORE	Inspect flowmeter systems
E4	CORE	Inspect mast position indication system components (e.g., limit switches, position switches, proximity magnet switches, etc.)
E4	CORE	Inspect pressure sensing devices

GENERAL ELECTRICAL SYSTEMS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Inspect ship's entertainment systems
E4	CORE	Inspect synchro repeaters
E4	CORE	Inspect Tank Level Indicator (TLI) systems
E4	CORE	Inspect temperature monitoring systems
E4	CORE	Inspect valve control system components
E4	CORE	Inspect valve position indicating system components
E4	CORE	Maintain ship's entertainment systems
E4	CORE	Repair flowmeter systems
E4	CORE	Repair pressure sensing devices
E4	NON-CORE	Repair ship's entertainment systems
E4	CORE	Replace Central Atmosphere Monitoring System (CAMS) equipment components
E4	CORE	Replace mast position indicating system components
E4	CORE	Replace navigation lights
E4	CORE	Replace synchro repeater system components
E4	CORE	Replace valve control system components
E4	CORE	Replace valve position indicating system components
E4	CORE	Shutdown Central Atmosphere Monitoring System (CAMS) equipment
E4	CORE	Startup Central Atmosphere Monitoring System (CAMS) equipment
E4	CORE	Test ship's entertainment systems
E4	CORE	Troubleshoot Central Atmosphere Monitoring System (CAMS) equipment
E4	CORE	Troubleshoot flowmeter system components
E4	CORE	Troubleshoot mast position indication system components (e.g., limit switches, position switches, proximity magnet switches, etc.)
E4	CORE	Troubleshoot pressure sensing devices
E4	CORE	Troubleshoot ship's entertainment systems
E4	CORE	Troubleshoot synchro repeaters
E4	CORE	Troubleshoot Tank Level Indicator (TLI) system components
E4	CORE	Troubleshoot valve control system components
E4	CORE	Troubleshoot valve position indication system components

NAVIGATION AND PILOTING

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Rig bridge (e.g., dive, surface, in port, etc.)

POWER GENERATION AND DISTRIBUTION SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Align Action Cut-Out (ACO) switchboards
E4	CORE	Align Interior Communications (IC) switchboards
E4	CORE	Clean Action Cut-Out (ACO) switchboards
E4	CORE	Clean Interior Communications (IC) switchboards

POWER GENERATION AND DISTRIBUTION SYSTEMS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Inspect Action Cut-Out (ACO) switchboard components
E4	CORE	Inspect Interior Communications (IC) switchboards
E5	CORE	Repair Action Cut-Out (ACO) switchboards
E4	CORE	Repair Interior Communications (IC) switchboards
E4	CORE	Shift power sources using bus transfer devices (e.g., Automatic, Manual, etc.)
E5	CORE	Troubleshoot Action Cut-Out (ACO) switchboards
E4	CORE	Troubleshoot Interior Communications (IC) switchboards

SHIP CONTROL SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Adjust Ballast Control Panels (BCP)
E5	CORE	Adjust depth control systems (e.g., hovering, forward hovering, missile compensation, etc.)
E5	CORE	Adjust depth sensing system components
E5	CORE	Adjust Ship's Control Panels (SCP)
E5	CORE	Adjust ship's control system components (e.g., planes angle transmitters, depth/course rate, Diagnostic and Maintenance Computer (DMAC), etc.)
E5	CORE	Calibrate depth control systems (e.g., hovering, forward hovering, missile compensation, etc.)
E5	NON-CORE	Calibrate depth sensing system components
E4	CORE	Clean Ballast Control Panels (BCP)
E4	CORE	Clean depth control systems (e.g., hovering, forward hovering, missile compensation, etc.)
E4	CORE	Clean depth sensing systems
E4	CORE	Clean Ship's Control Panels (SCP)
E4	CORE	Clean ship's control system components (e.g., Position Control Units (PCU), feedback transmitters, display screens, etc.)
E4	CORE	Inspect Ballast Control Panels (BCP)
E4	CORE	Inspect depth control systems (e.g., hovering, forward hovering, missile compensation, etc.)
E4	CORE	Inspect depth sensing system components
E4	CORE	Inspect Ship's Control Panels (SCP)
E4	CORE	Inspect ship's control system components (e.g., planes angle transmitters, depth/course rate, Remote Interface Controllers (RIC), etc.)
E5	CORE	Remove depth sensing system components
E5	CORE	Repair Ballast Control Panels (BCP)
E4	CORE	Repair depth control systems (e.g., hovering, forward hovering, missile compensation, etc.)
E5	CORE	Repair Ship's Control Panel (SCP) components (e.g., Engine Order Telegraph (EOT), Diving Officers Control Panel (DOCP), Diving Officers Indicator Panel (DOIP), etc.)
E4	CORE	Repair ship's control system components (e.g., Position Control Units (PCU), feedback transmitters, auxiliary indications, etc.)

SHIP CONTROL SYSTEMS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Replace depth sensing system components
E4	CORE	Replace ship's angle indicator system components (e.g., planes indicators, depth/course rate, depth/course error, etc.)
E5	CORE	Troubleshoot Ballast Control Panels (BCP)
E5	CORE	Troubleshoot depth control systems (e.g., hovering, forward hovering, missile compensation, etc.)
E5	CORE	Troubleshoot depth sensing systems
E4	CORE	Troubleshoot ship's angle indicator systems
E5	CORE	Troubleshoot Ship's Control Panels (SCP)
E4	CORE	Troubleshoot ship's control system components (e.g., Position Control Units (PCU), feedback transmitters, auxiliary indications, etc.)

Job Title**Submarine Navigation Manager****Job Code****001192****Job Family**

Installation, Maintenance, and Repair

NOC

TBD

Short Title (30 Characters)

SUBMARINE NAVIGATION MANAGER

Short Title (14 Characters)

SUB NAV MGR

Pay Plan

Enlisted

Career Field

ETV

Other Relationships and Rules

NEC TXXX series or other NECs as assigned

Job Description

Submarine Navigation Managers develop and evaluate navigation training; audit division records; coordinate division maintenance and equipment modifications; draft and review Naval correspondence; develop watch bills and shipboard navigation instructions; evaluate navigation team performance; supervise maintenance quality control; supervise the repair of electronic systems and subsystems; use accounting procedures to maintain control of inventories and work flow; estimate time and support required for repair of equipment; provide technical and supervisory liaison between work centers and external entities; certify the inventorying and updating of electronic navigation charts and publications; review navigation plans and voyage plans based on assigned operational tasking; train and supervise the Submarine Navigation Operators and Submarine Navigation Technicians in the performance of their assigned tasks and duties; train and advise the Officer of the Deck (OOD), Navigator, and Commanding Officer regarding the Navigation Rules and Regulations, current operations, and navigation requirements. Submarine Navigation Managers are senior Electronics Technicians (ET) with navigation expertise.

DoD Relationship**Group Title**

Navigation,
Communication, and
Countermeasure, N.E.C.

DoD Code

110200

O*NET Relationship**Occupation Title**

First-Line Supervisors/Managers
of Mechanics, Installers, and

SOC Code

49-1011.00

Job Family

Installation, Maintenance,
and Repair

Skills*Critical Thinking**Mathematics**Complex Problem Solving**Judgment and Decision Making**Reading Comprehension**Operation and Control**Coordination**Management of Material Resources**Management of Personnel Resources**Speaking***Abilities***Mathematical Reasoning**Deductive Reasoning**Inductive Reasoning**Written Comprehension**Information Ordering**Number Facility**Selective Attention**Problem Sensitivity**Written Expression**Oral Expression***ADMINISTRATION****Paygrade**

E7

Task Type

CORE

Task Statements

Analyze equipment service logs (e.g., Central Atmosphere Monitoring System (CAMS), Ring Laser Gyro Navigator (RLGN), Ship's Control Station (SCS), etc.)

E6

CORE

Audit navigation records (e.g., deck logs, Voyage Management System (VMS) logs, fathometer logs, etc.)

E7

NON-CORE

Audit Quality Assurance (QA) packages

E6

CORE

Brief navigation operations and piloting requirements

E7

CORE

Evaluate navigation exercises

E6

CORE

Evaluate piloting team performance

E4

CORE

Interpret schematic diagrams

E5

CORE

Manage navigation division maintenance programs

E5

CORE

Manage Preventive Maintenance Management Programs (PMMP)

E6

CORE

Manage team training programs (e.g., piloting, strategic navigation, Interior Communication (IC), etc.)

E7

CORE

Plan operational missions (e.g., strategic patrols, coordinated operations, transits, etc.)

ADMINISTRATION (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Prepare local changes to navigation procedures (e.g., Standard Maintenance Procedures (SMP), Maintenance Requirements Cards (MRC), etc.)
E5	CORE	Prepare Naval messages (e.g., Operational Orders (OPORD), Operations Schedules (OPSKED), Submarine Notices (SUBNOTE), etc.)
E7	CORE	Prepare navigation exercises
E5	CORE	Prepare piloting and operations briefs
E6	NON-CORE	Review Quality Assurance (QA) packages
E4	CORE	Supervise colors
E5	NON-CORE	Supervise Quality Assurance (QA) testing procedures
E7	CORE	Verify local changes to navigation procedures (e.g., Standard Maintenance Procedures (SMP), Maintenance Requirements Cards (MRC), etc.)
E5	CORE	Verify schematics

CHART PREPARATIONS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Create parameters for Commanding Officers Safe Operating Envelope (COSOE) (e.g., cross track error, red/yellow sounding, maximum operating depth, etc.)
E4	CORE	Establish voyage plans (e.g., Plan of Intended Movement (PIM), departure/arrival, Speed of Advance (SOA), etc.)
E4	CORE	Extract required information from navigation publications
E4	CORE	Maintain navigation chart and publication allowances (e.g., inventory, order, update, etc.)
E4	CORE	Plot moving havens
E4	CORE	Plot navigational hazards (e.g., danger ranges, danger bearings, shoal water, etc.)
E6	CORE	Review navigation charts
E5	CORE	Select required charts for proposed transits

ELECTRONIC NAVIGATION SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Calibrate Inertial Navigation Systems (INS) and subsystems (e.g., Internal Frequency Standards (IFS), Navigation Sonar Systems (NSS), Inertial Navigation Systems (INS) Consoles, etc.)
E4	CORE	Configure navigation subsystem equipment software
E4	CORE	Evaluate Inertial Navigation Systems (INS) and subsystems performance (e.g., Global Positioning Systems (GPS), Navigation Sonar Systems (NSS), Inertial Navigation Systems (INS) Consoles, etc.)
E4	CORE	Interpret fathometer displays
E4	CORE	Interpret Inertial Navigation System (INS) data
E4	CORE	Interpret radar displays
E4	CORE	Repair Inertial Navigation Systems (INS) and subsystems (e.g., Navigation Workstations (NWS), Navigation Sonar Systems (NSS), Inertial Navigation System (INS) consoles, etc.)
E4	CORE	Troubleshoot Inertial Navigation Systems (INS) and subsystems (e.g., Navigation Workstations (NWS), Navigation Sonar Systems (NSS), Inertial Navigation System (INS) consoles, etc.)

NAVIGATION AND PILOTING

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	NON-CORE	Advise Officer of the Deck (OOD) of chain scope required for anchoring
E4	NON-CORE	Advise Officer of the Deck (OOD) of ocean depth and bottom (e.g., while at anchor, during piloting, submerged operations, etc.)
E4	CORE	Calculate environmental effects on ship's movements (e.g., wind, tide, set and drift, etc.)
E4	CORE	Calculate gyrocompass error
E4	CORE	Compare fathometer readings with charts
E4	CORE	Compare gyrocompass and inertial headings
E4	CORE	Compute advance and transfer
E4	CORE	Compute azimuths
E4	CORE	Compute course and speed made good
E4	CORE	Compute position uncertainty
E4	CORE	Compute radar and visual offset
E6	NON-CORE	Conduct strike group operations
E4	CORE	Convert between Greenwich Mean Time (GMT) and Zone Time (ZT)
E4	CORE	Convert between relative bearings and true bearings
E4	CORE	Correlate speed, time, and distance
E4	CORE	Evaluate radar information
E5	CORE	Evaluate ship's navigation and piloting information
E4	CORE	Extract required information from Naval messages (e.g., Operational Orders (OPORD), Operations Schedules (OPSKED), Submarine Notices (SUBNOTE), etc.)
E4	CORE	Fix ship's position (e.g., bearing and range to single point, latitude/longitude, multiple soundings, etc.)
E4	CORE	Identify reduced visibility situations
E4	CORE	Identify signal flags and pennant displays
E4	CORE	Interpret navigation sound signals (e.g., bell, gong, whistle, etc.)
E4	CORE	Obtain visual bearings (e.g., alidade, periscope, seaman's eye, etc.)
E4	CORE	Plot weather message information
E4	CORE	Provide courses for ship's positioning (e.g., precision anchoring, storm evasion, contact management, etc.)
E4	CORE	Provide recommended actions based on Navigation Rules and Regulations
E6	CORE	Supervise navigation teams