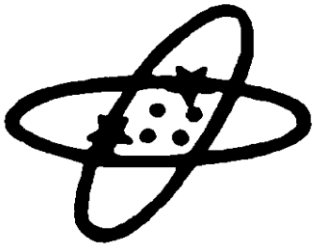
CHAPTER 32



ELECTRONICS TECHNICIAN, SUBMARINE, NAVIGATION (ETV)

NAVPERS 18068-32H
Change 92

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NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

ELECTRONICS TECHNICIAN, SUBMARINE, NAVIGATION (ETV)

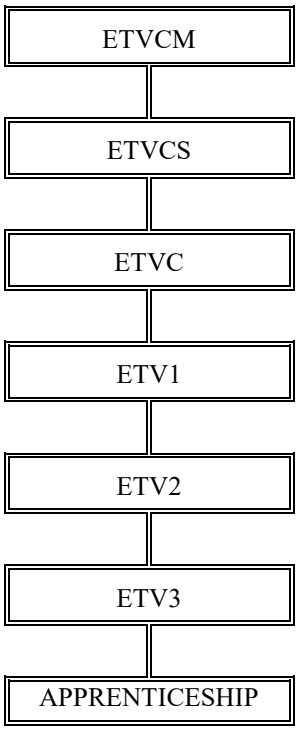
SCOPE OF RATING

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 **Job Code**

Submarine Navigation Operator 001182

Job Family	NOC	Short Title (30 Characters)	Short Title (14 Characters)
Installation, Maintenance, and Repair	TBD	SUBMARINE NAVIGATION OPERATOR	SUB NAV OPER

Pay Plan	Career Field	Other Relationships and Rules
Enlisted	ETV	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	*DoD Code*
Navigation, Communication, and Countermeasure, N.E.C.	110200

O*NET Relationship

Occupation Title	*SOC Code*	*Job Family*
Electrical and Electronics Repairers, Commercial and Industrial Equipment	49-2094.00	Installation, Maintenance, and Repair

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

ADMINISTRATION

Paygrade	Task Type	Task Statements
E4	CORE	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

Paygrade	Task Type	Task Statements
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

Paygrade	Task Type	Task Statements
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)

Paygrade	Task Type	Task Statements
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

Paygrade	Task Type	Task Statements
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)

Paygrade	Task Type	Task Statements
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

Paygrade	Task Type	Task Statements
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

Paygrade	Task Type	Task Statements
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

Paygrade	Task Type	Task Statements
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)

Paygrade	Task Type	Task Statements
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

Paygrade	Task Type	Task Statements
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

Paygrade	Task Type	Task Statements
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 **Job Code**

Submarine Navigation Technician 001187

Job Family	NOC	Short Title (30 Characters)	Short Title (14 Characters)
Installation, Maintenance, and Repair	TBD	SUBMARINE NAVIGATION TEC	SUB NAV TECH

Pay Plan	Career Field	Other Relationships and Rules
Enlisted	ETV	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	*DoD Code*
Navigation, Communication, and Countermeasure, N.E.C.	110200

O*NET Relationship

Occupation Title	*SOC Code*	*Job Family*
Electrical and Electronics Repairers, Commercial and Industrial Equipment	49-2094.00	Installation, Maintenance, and Repair

Skills	Abilities
Equipment Maintenance	*Deductive Reasoning*
Troubleshooting	*Inductive Reasoning*
Complex Problem Solving	*Problem Sensitivity*
Management of Material Resources	*Written Comprehension*
Systems Analysis	*Extent Flexibility*
Operation and Control	*Selective Attention*
Quality Control Analysis	*Multi-limb Coordination*
Repairing	*Finger Dexterity*
Installation	*Manual Dexterity*
Operation Monitoring	*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)

Paygrade	Task Type	Task Statements
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

Paygrade	Task Type	Task Statements
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)

Paygrade	Task Type	Task Statements
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

Paygrade	Task Type	Task Statements
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)

Paygrade	Task Type	Task Statements
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 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 radar system components
E4	CORE	Troubleshoot synchro signal amplifiers

GENERAL ELECTRICAL SYSTEMS

Paygrade	Task Type	Task Statements
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)

Paygrade	Task Type	Task Statements
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

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

POWER GENERATION AND DISTRIBUTION SYSTEMS

Paygrade	Task Type	Task Statements
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)

Paygrade	Task Type	Task Statements
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

Paygrade	Task Type	Task Statements
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)

Paygrade	Task Type	Task Statements
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 **Job Code**

Submarine Navigation Manager 001192

Job Family	NOC	Short Title (30 Characters)	Short Title (14 Characters)
Installation, Maintenance, and Repair	TBD	SUBMARINE NAVIGATION MANAGER	SUB NAV MGR

Pay Plan	Career Field	Other Relationships and Rules
Enlisted	ETV	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	*DoD Code*
Navigation, Communication, and Countermeasure, N.E.C.	110200

O*NET Relationship

Occupation Title	*SOC Code*	*Job Family*
First-Line Supervisors/Managers of Mechanics, Installers, and	49-1011.00	Installation, Maintenance, and Repair

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

ADMINISTRATION

Paygrade	Task Type	Task Statements
E7	CORE	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)

Paygrade	Task Type	Task Statements
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

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
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

Paygrade	Task Type	Task Statements
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

Paygrade	Task Type	Task Statements
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