

CHAPTER 42



HULL MAINTENANCE TECHNICIAN (HT)

NAVPERS 18068F-42F
Change 107

Updated: July 2026

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NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

HULL MAINTENANCE TECHNICIAN (HT)



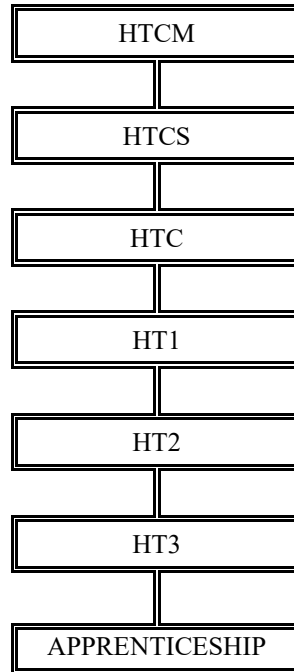
SCOPE OF RATING

Hull Maintenance Technicians (HT) plan, supervise, and perform tasks necessary for fabrication, installation, maintenance, repair, and inspection of shipboard structures, plumbing, sewage, and piping systems; organize and supervise personnel in maintenance and hull repairs; instruct personnel; enforce safety and security procedures; and prepare records and reports.

This Occupational Standard is to be incorporated in Volume I, Part B, of the Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards (NAVPERS 18068F) in Chapter 42.

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**Hull Systems Maintainer****Job Code****003004****Job Family**

Installation, Maintenance, and Repair

NOC

TBD

Short Title (30 Characters)

HULL SYSTEMS MAINTAINER

Short Title (14 Characters)

HULL SYS MAINT

Pay Plan

Enlisted

Career Field

HT

Other Relationships and Rules

NEC UXXX series and other NECs as assigned

Job Description

Hull Systems Maintainers perform the work necessary to keep shipboard structures and surfaces in good condition; maintain and operate shipboard plumbing systems, marine sanitation systems, and ballast control systems; fabricate structures from light and heavy gauge metal; inspect and test various shipboard structures and systems using visual, radiological, ultrasonic, and magnetic particle, and liquid penetrant testing equipment; conduct repairs to marine sanitation systems, decks, structures, and hulls by welding, brazing, and riveting; install, maintain, and repair valves, piping and plumbing system fittings and fixtures; perform pipe cutting, threading, and assembly; repair ventilation ducting; install and repair insulation and lagging; repair metal, wood, and fiberglass boats; apply Quality Assurance Program guidelines, principles, and instructions; and perform daily tasks under the direct supervision of a Hull System Technician.

DoD Relationship**Group Title**Other Craftworkers, N.E.C., 179000
General**DoD Code****O*NET Relationship****Occupation Title**Maintenance and Repair Workers,
General**SOC Code**

49-9071.00

Job FamilyInstallation, Maintenance,
and Repair**Skills***Equipment Selection**Quality Control Analysis**Operation and Control**Management of Material Resources**Repairing**Complex Problem Solving**Critical Thinking**Equipment Maintenance**Coordination**Systems Evaluation***Abilities***Arm-Hand Steadiness**Problem Sensitivity**Perceptual Speed**Manual Dexterity**Information Ordering**Control Precision**Memorization**Mathematical Reasoning**Finger Dexterity**Multi-limb Coordination***GENERAL SHOP OPERATIONS****Paygrade**

E4

Task Type

CORE

Task Statements

Bend material using various tools (e.g., brake press, Hossfeld bending machine, metal brake, etc.)

E4

CORE

Clean hand tools

E5

CORE

Conduct job site safety walkthroughs for repairs and inspections

E4

CORE

Disinfect hand tools

E4

CORE

Doff Supplied-Air Respirator/Self-Contained Breathing Apparatus SAR/SCBA)

E4

CORE

Don Supplied-Air Respirator/Self-Contained Breathing Apparatus (SAR/SCBA)

E4

CORE

Dress grinding wheels

E4

CORE

Drill holes in material (e.g., drill press, electric hand drill, portable drill, etc.)

E4

CORE

Grind material using pedestal grinder

E4

CORE

Identify tools requiring calibration and their calibration specifications

E4

CORE

Inspect hand tools

E4

CORE

Perform Planned Maintenance System (PMS) checks

E4

CORE

Perform ship checks to establish scope of work and inspection requirements

E4

CORE

Perform shop mathematics

E4

CORE

Punch material using various punching methods (e.g., turret punch, hand punch tools, universal iron worker, etc.)

HT-5

GENERAL SHOP OPERATIONS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Repair hand tools
E4	CORE	Replace consumable tool components (e.g., saw blades, belts, bits, etc.)
E4	CORE	Replace hand tools
E4	CORE	Set up Supplied-Air Respirator (SAR)
E4	CORE	Set up ventilation equipment for hot work operations (e.g., welding, brazing, plasma cutting, etc.)
E5	CORE	Stress-relieve metal
E4	CORE	Verify proper ventilation
E5	CORE	Verify temporary controlled job sites for controlled work

METAL LAYOUT, FABRICATION, AND INSTALLATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Cut ferrous and non-ferrous metals utilizing various cutting machines and tools (e.g., bandsaw, power hack saw, shear, etc.)
E4	CORE	Fabricate sheet metal products
E4	CORE	Form material using notching, punching, and shearing machines
E4	CORE	Form material using slip roll
E4	NON-CORE	Form materials using pull max
E4	CORE	Install sheet metal products
E4	CORE	Layout sheet metal products
E4	CORE	Manufacture structural and non-structural components
E4	CORE	Perform metal repairs
E4	CORE	Replace equipment flanges
E4	CORE	Set up carbon-arc cutting
E4	CORE	Tap material
E4	CORE	Thread material
E4	CORE	Verify piping fit-ups
E4	CORE	Verify structural metal fit-ups

PLUMBING AND PIPING SYSTEMS REPAIR

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Bend metal piping
E4	CORE	Clear clogged piping
E4	CORE	Fabricate blank flanges
E4	CORE	Fabricate sealing gaskets
E4	CORE	Fabricate templates for piping repairs and replacements
E4	CORE	Identify piping systems material and fittings by markings
E4	CORE	Inspect flexible hoses and connections
E4	CORE	Inspect piping systems, tubing, and components
E4	CORE	Inspect valve components

PLUMBING AND PIPING SYSTEMS REPAIR (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Install Mechanical Attached Fittings (MAF)
E4	CORE	Interpret piping diagrams
E4	CORE	Lay out metal flanges
E4	NON-CORE	Manufacture flexible hoses and connections
E4	CORE	Manufacture gauge lines
E4	CORE	Repair piping system components
E4	CORE	Repair valve components
E4	CORE	Replace flexible hoses and connections
E4	CORE	Replace metal and non-metal plumbing fixtures
E4	CORE	Replace piping system components
E4	CORE	Replace valve components
E4	CORE	Target piping systems

SEWAGE SYSTEMS MAINTENANCE AND REPAIR

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Align Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system
E4	CORE	Clean Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system and components
E4	CORE	Clean sewage contaminated compartments
E4	CORE	Disinfect sewage contaminated compartments
E4	CORE	Inspect Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system and components
E4	CORE	Maintain sewage spill lockers
E4	CORE	Perform Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) disposal evolutions
E4	CORE	Perform sewage spill containment
E4	CORE	Repair Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system components
E4	CORE	Replace Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system components
E4	CORE	Test Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system and components
E4	CORE	Troubleshoot Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system and components

TECHNICAL ADMINISTRATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Document information on Quality Assurance (QA) forms
E4	CORE	Interpret technical drawings and blueprints for welding, brazing, and Non-Destructive Testing (NDT) requirements
E5	CORE	Prepare Quality Assurance (QA) forms

TECHNICAL ADMINISTRATION (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Validate Destructive Testing and Non-Destructive Testing (NDT) procedures
E5	CORE	Verify accuracy of Quality Assurance (QA) forms
E5	CORE	Verify space safe for hot work
E4	CORE	Verify Technical Work Documents (TWD) for repairs, inspection requirements and acceptance criteria

TESTS AND INSPECTIONS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Evaluate Non-Destructive Testing (NDT) inspection results against acceptance standards
E4	CORE	Identify metals
E5	CORE	Perform corrosion inspections in tanks and voids
E4	CORE	Perform destructive test inspections using various methods (e.g., guided bend, macro-etch, hardness, etc.)
E5	CORE	Perform hydro-static tests
E4	CORE	Perform informational Liquid Penetrant Testing (PT) using various methods (e.g., Type 2, Method C, Form e., etc.)
E4	NON-CORE	Perform informational Magnetic Particle Testing (MT) inspections using wet and dry techniques
E5	CORE	Perform Non-Destructive Testing (NDT) inspections within a radiological environment
E4	NON-CORE	Perform pre and post inspections on Magnetic Particle Testing (MT) and Ultrasonic Testing (UT) equipment
E4	NON-CORE	Perform informational Radiographic Testing (RT) inspections in shielded or open facilities
E4	NON-CORE	Perform informational Ultrasonic Testing (UT) inspections using various methods. (e.g., thickness, silver braze, shear wave, etc.)
E4	CORE	Perform informational Visual Testing (VT) inspections on welds, brazes and components
E4	NON-CORE	Perform X-ray Fluorescence (XRF) inspections for metal and lead paint identification
E4	CORE	Take precision measurements using calibrated and non-calibrated equipment (e.g., feeler gauge, micrometer, dial calipers, etc.)

WELDING AND OXYACETYLENE OPERATIONS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Clean braze joints
E4	CORE	Clean welds
E4	CORE	Cut ferrous and non-ferrous metals utilizing welding and cutting equipment (e.g., plasma cutter, carbon arc, oxyacetylene, etc.)
E4	CORE	Inspect braze joints
E4	CORE	Inspect compressed gas cylinders for proper storage
E4	CORE	Interpret welding symbols and standards from drawings and specifications

WELDING AND OXYACETYLENE OPERATIONS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Perform oxyacetylene brazing operations
E4	CORE	Perform welding operations (e.g., Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), Shielded Metal Arc Welding (SMAW), etc.)
E4	CORE	Perform welding using stud welder
E4	CORE	Prepare surfaces for welding
E4	CORE	Repair braze joints
E4	CORE	Set up brazing equipment
E4	CORE	Set up oxyacetylene cutting equipment
E4	CORE	Set up welding equipment (e.g., Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), Shielded Metal Arc Welding (SMAW), etc.)
E4	CORE	Set up welding equipment for stud welder

Job Title**Hull Systems Technician****Job Code****003556****Job Family**

Production

NOC

TBD

Short Title (30 Characters)

HULL SYSTEMS TECHNICIAN

Short Title (14 Characters)

HULL SYS TECH

Pay Plan

Enlisted

Career Field

HT

Other Relationships and Rules

NEC UXXX series and other NECs as assigned

Job Description

Hull Systems Technicians perform the work necessary to keep shipboard structures and surfaces in good condition; maintain and operate shipboard plumbing systems, marine sanitation systems, and ballast control systems; fabricate structures from light and heavy gauge metal; inspect and test various shipboard structures and systems using visual, radiological, ultrasonic, magnetic particle, and liquid penetrant testing equipment; supervise repairs to marine sanitation systems, decks, structures, and hulls by welding, brazing, and riveting; install, maintain, and repair valves, piping and plumbing system fittings and fixtures; perform pipe cutting, bending, threading and assembly, repair ventilation ducting; and install and repair insulation and lagging; repair metal, wood, and fiberglass boats; manage the Quality Assurance Program; serve as Subject Matter Experts (SME); and mentor Hull Systems Maintainers.

DoD Relationship**Group Title**Other Craftworkers, N.E.C., 179000
General**DoD Code****O*NET Relationship****Occupation Title**Inspectors, Testers, Sorters,
Samplers, and Weighers**SOC Code**

51-9061.00

Job Family

Production

Skills*Quality Control Analysis**Equipment Selection**Operation and Control**Critical Thinking**Monitoring**Management of Material Resources**Complex Problem Solving**Coordination**Repairing**Reading Comprehension***Abilities***Problem Sensitivity**Information Ordering**Perceptual Speed**Arm-Hand Steadiness**Deductive Reasoning**Mathematical Reasoning**Manual Dexterity**Control Precision**Memorization**Written Comprehension***GENERAL SHOP OPERATIONS****Paygrade**

E4

Task Type

CORE

Task Statements

Bend material using various tools (e.g., brake press, Hossfeld bending machine, metal brake, etc.)

E5

CORE

Conduct job site safety walkthroughs for repairs and inspections

E4

CORE

Doff Supplied-Air Respirator/Self-Contained Breathing Apparatus (SAR/SCBA)

E4

CORE

Don Supplied-Air Respirator/Self-Contained Breathing Apparatus (SAR/SCBA)

E4

CORE

Identify tools requiring calibration and their calibration specifications

E4

CORE

Inspect hand tools

E5

CORE

Monitor Supplied-Air Respirator/Self-Contained Breathing Apparatus (SAR/SCBA)

E4

CORE

Perform Planned Maintenance System (PMS) checks

E4

CORE

Perform ship checks to establish scope of work and inspection requirements

E4

CORE

Perform shop mathematics

E4

CORE

Repair hand tools

E4

CORE

Replace consumable tool components (e.g., saw blades, belts, bits, etc.)

E4

CORE

Replace hand tools

E4

CORE

Set up Supplied-Air Respirator (SAR)

GENERAL SHOP OPERATIONS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Set up ventilation equipment for hot work operations (e.g., welding, brazing, plasma cutting, etc.)
E5	CORE	Stress-relieve metal
E6	CORE	Supervise personnel safety and rescue control procedures
E4	CORE	Verify proper ventilation
E5	CORE	Verify temporary controlled job sites for controlled work

METAL LAYOUT, FABRICATION, AND INSTALLATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Cut ferrous and non-ferrous metals utilizing various cutting machines and tools (e.g., bandsaw, power hack saw, shear, etc.)
E4	CORE	Fabricate sheet metal products
E4	CORE	Form material using slip roll
E4	NON-CORE	Form materials using pull max
E4	CORE	Layout sheet metal products
E4	CORE	Manufacture structural and non-structural components
E4	CORE	Perform metal repairs
E4	CORE	Set up carbon-arc cutting
E4	CORE	Verify piping fit-ups
E4	CORE	Verify structural metal fit-ups

PLUMBING AND PIPING SYSTEMS REPAIR

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Fabricate templates for piping repairs and replacements
E4	CORE	Identify piping systems material and fittings by markings
E4	CORE	Inspect flexible hoses and connections
E4	CORE	Inspect piping systems, tubing, and components
E4	CORE	Inspect valve components
E4	CORE	Interpret piping diagrams
E4	CORE	Lay out metal flanges
E4	CORE	Manufacture gauge lines
E4	CORE	Repair piping system components
E4	CORE	Replace piping system components
E5	CORE	Test repaired piping systems, tubing, and components

SEWAGE SYSTEMS MAINTENANCE AND REPAIR

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Align Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system
E4	CORE	Clean Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system and components

SEWAGE SYSTEMS MAINTENANCE AND REPAIR (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Clean sewage contaminated compartments
E6	CORE	Conduct sewage spill containment and cleanup
E6	CORE	Coordinate Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) disposal evolutions
E4	CORE	Disinfect sewage contaminated compartments
E4	CORE	Inspect Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system and components
E6	CORE	Inspect sewage contaminated compartments
E4	CORE	Perform Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) disposal evolutions
E4	CORE	Perform sewage spill containment
E4	CORE	Repair Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system components
E4	CORE	Replace Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system components
E6	CORE	Supervise alignment of Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system (i.e., at-sea, in-port, and transit)
E4	CORE	Test Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system and components
E4	CORE	Troubleshoot Collection Holding and Transfer (CHT)/Vacuum Collection Holding and Transfer (VCHT) system and components

TECHNICAL ADMINISTRATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Document information on Quality Assurance (QA) forms
E6	NON-CORE	Initiate Memorandum of Agreements for Non-Destructive Testing (NDT), welder, and brazer programs
E4	CORE	Interpret technical drawings and blueprints for welding, brazing, and Non-Destructive Testing (NDT) requirements
E4	CORE	Manage calibrated equipment Testing, Measuring and Diagnostic Equipment (TMDE)
E7	NON-CORE	Manage radiography program
E5	CORE	Manage trouble call database
E7	CORE	Perform initial Immediately Dangerous to Life or Health (IDLH) space safe for entry
E5	CORE	Perform vertical and horizontal audits and surveillance
E7	CORE	Plan Immediately Dangerous to Life or Health (IDLH) work
E5	CORE	Prepare Quality Assurance (QA) forms
E5	CORE	Recertify a space safe for entry and reentry
E5	CORE	Recertify Immediately Dangerous to Life or Health (IDLH) space safe for entry
E4	CORE	Validate Destructive Testing and Non-Destructive Testing (NDT) procedures

TECHNICAL ADMINISTRATION (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Validate Engineering Operational Sequencing System (EOSS) manuals
E5	CORE	Verify accuracy of Quality Assurance (QA) forms
E6	CORE	Verify accuracy of Quality Assurance (QA) packages
E6	CORE	Verify accuracy of technical publications, blueprints, and drawings
E7	CORE	Verify Immediately Dangerous to Life or Health (IDLH) space safe for entry
E5	CORE	Verify space safe for coldwork
E7	CORE	Verify space safe for entry and re-entry
E5	CORE	Verify space safe for hot work
E4	CORE	Verify Technical Work Documents (TWD) for repairs, inspection requirements and acceptance criteria

TESTS AND INSPECTIONS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	NON-CORE	Document Non-Destructive Test (NDT) results
E4	CORE	Evaluate Non-Destructive Testing (NDT) inspection results against acceptance standards
E4	CORE	Identify metals
E5	CORE	Perform corrosion inspections in tanks and voids
E4	CORE	Perform destructive test inspections using various methods (e.g., guided bend, macro-etch, hardness, etc.)
E5	CORE	Perform hydro-static tests
E4	CORE	Perform informational Liquid Penetrant Testing (PT) using various methods (e.g., Type 2, Method C, Form e., etc.)
E4	NON-CORE	Perform informational Magnetic Particle Testing (MT) inspections using wet and dry techniques
E5	CORE	Perform Non-Destructive Testing (NDT) inspections within a radiological environment
E4	NON-CORE	Perform pre and post inspections on Magnetic Particle Testing (MT) and Ultrasonic Testing (UT) equipment
E4	NON-CORE	Perform informational Radiographic Testing (RT) inspections in shielded or open facilities
E4	NON-CORE	Perform informational Ultrasonic Testing (UT) inspections using various methods. (e.g., thickness, silver braze, shear wave, etc.)
E4	CORE	Perform informational Visual Testing (VT) inspections on welds, brazes and components
E4	NON-CORE	Perform X-ray Fluorescence (XRF) inspections for metal and lead paint identification
E4	CORE	Take precision measurements using calibrated and non-calibrated equipment (e.g., feeler gauge, micrometer, dial calipers, etc.)

WELDING AND OXYACETYLENE OPERATIONS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Inspect braze joints
E4	CORE	Inspect compressed gas cylinders for proper storage
E4	CORE	Interpret welding symbols and standards from drawings and specifications
E6	CORE	Manage cutting, welding, and oxyacetylene operations
E4	CORE	Perform oxyacetylene brazing operations
E4	CORE	Perform welding operations (e.g., Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), Shielded Metal Arc Welding (SMAW), etc.)
E4	CORE	Perform welding using stud welder
E4	CORE	Set up brazing equipment
E4	CORE	Set up oxyacetylene cutting equipment
E4	CORE	Set up welding equipment (e.g., Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), Shielded Metal Arc Welding (SMAW), etc.)
E4	CORE	Set up welding equipment for stud welder
E6	CORE	Supervise cutting, welding, oxyacetylene operations and metal repairs