

CHAPTER 30



ENGINEMAN (EN)

NAVPERS 18068F-30G
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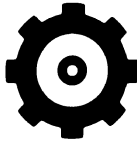
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NAVY ENLISTED OCCUPATIONAL STANDARD

FOR
ENGINEMAN (EN)



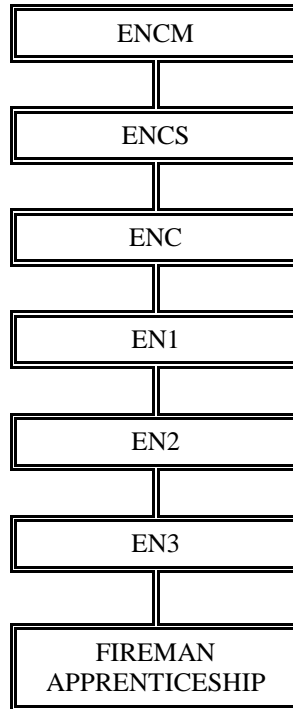
SCOPE OF RATING

Enginemen (EN) control the operation of diesel engines used for ship propulsion and to generate electrical power and align fuel, water, and air piping systems; clean, lubricate, adjust, test, and perform other preventive maintenance on diesel engines, reduction gears, air compressors, hydraulic or pneumatic clutches, steering engines, and controllable pitch propeller systems; repair or overhaul diesel engines, pumps, compressors, heat exchangers, and control devices used with diesel engines; and make entries into and analyze machinery operating 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 30.

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**Diesel Engine Systems Manager****Job Code****003102****Job Family**

Installation, Maintenance, and Repair Occupations

NOC

TBD

Short Title (30 Characters)

DIESEL ENGINE SYS MGR

Short Title (14 Characters)

DIESEL SYS MGR

Pay Plan

Enlisted

Career Field

EN

Other Relationships and Rules

NEC UXXX series and other NECs as assigned

Job Description

Diesel Engine Systems Managers provide overall management by reviewing, approving, and managing engine operations and programs aboard Navy ships; manage personnel during the operation and maintenance of main propulsion diesel engine and reduction gears used for ship propulsion and auxiliary machinery, such as ships service diesel engine generators and oil purifiers; provide guidance and technical knowledge in the maintenance of auxiliary machinery outside of main machinery spaces, such as electro-hydraulic steering engines desalinization plants (Reverse Osmosis), and compressed air producing plants; manage personnel in the alignment process of piping systems for fuel, oil, water, and air; manage the operation of ship main propulsion diesel engine used for ship propulsion and service systems and the operation of ships service diesel engine generators used to produce electrical power; manage personnel responsible for cleaning, adjusting, testing, and the performance of other preventive maintenance on ships main propulsion diesel engine, ships service diesel engine generators, and other auxiliary machinery including electro-hydraulic steering units, pumps and associated valves; provide guidance and technical knowledge in the repair and replacement of valves, pumps, heat exchangers, compressors, 24 volt engine control systems, and hydraulic or pneumatic control devices; and manage and analyze machinery operating records and reports. Managers have mastered a trade or skill and are qualified to mentor Diesel Engine Systems Technicians and Diesel Engine Systems Maintainers.

DoD Relationship**Group Title**

Auxiliaries

DoD Code

165200

O*NET Relationship**Occupation Title**

First Line Supervisors of Mechanics, and Installers, and Repairers 49-1011.00

SOC Code**Job Family**

Installation, Maintenance, and Repair Occupations

Skills*Quality Control Analysis**Operation Monitoring**Systems Evaluation**Reading Comprehension**Systems Analysis**Writing**Monitoring**Complex Problem Solving**Coordination**Critical Thinking***Abilities***Oral Comprehension**Category Flexibility**Written Comprehension**Information Ordering**Inductive Reasoning**Written Expression**Deductive Reasoning**Mathematical Reasoning**Near Vision**Visual Color Discrimination***ENGINEERING MANAGEMENT****Paygrade****Task Type****Task Statements**

E7

NON-CORE

Approve Quality Assurance (QA) repair forms

E7

CORE

Evaluate engineering management programs

E6

CORE

Maintain Diesel Readiness Systems (DRS)

E5

CORE

Maintain engineering records and logs

E6

CORE

Maintain environmental pollution control programs

E5

NON-CORE

Prepare Current Ship's Maintenance Project (CSMP) input

E5

CORE

Prepare fuel, oil, and water reports

E7

CORE

Prepare shipwide full power and economy trials

E7

NON-CORE

Validate Casualty Reports (CASREP)

E6

CORE

Validate Engineering Operational Sequencing System (EOSS) manuals

E7

CORE

Validate engineering records and logs

E7

CORE

Verify accuracy of Diesel Readiness Systems (DRS) data inputs

ENGINEERING MANAGEMENT (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E6	NON-CORE	Verify Current Ship's Maintenance Project (CSMP) input
E6	CORE	Verify engineering records and logs
E6	NON-CORE	Verify Quality Assurance (QA) repair forms

ENGINEERING MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect fluid samples
E6	CORE	Verify auxiliary cooling water system repairs
E6	CORE	Verify diaphragm control valve repairs
E6	CORE	Verify diesel engine repairs
E6	CORE	Verify engine air system repairs
E6	CORE	Verify engine barring gear component repairs
E5	CORE	Verify engine fuel oil systems (e.g., strainers, filters, valves, etc.)
E6	CORE	Verify heat exchanger repairs
E7	CORE	Verify injection pumps
E6	CORE	Verify Injectors and nozzles
E6	CORE	Verify lube oil purification systems
E6	CORE	Verify lube oil transfer systems
E6	CORE	Verify machinery transmissions
E5	CORE	Verify main propulsion shafts (e.g., jet drive, outdrive, etc.)
E6	CORE	Verify oily waste water systems
E5	NON-CORE	Verify pressure/temperature alarms and set points
E5	CORE	Verify reducing stations (e.g., air, water systems, hydraulics, etc.)
E6	NON-CORE	Verify repairs firemain systems
E5	CORE	Verify repairs of hot water plants
E5	CORE	Verify repairs of hydraulic systems (e.g., Control Pitch Propeller (CPP), steering gear, etc.)
E6	CORE	Verify repairs of machinery clutches and brakes
E6	CORE	Verify repairs on air dryer systems
E6	CORE	Verify repairs on blowers
E6	CORE	Verify repairs on compressed air systems
E6	CORE	Verify repairs on emergency shutdown devices
E6	CORE	Verify repairs on engine control systems (i.e., mechanical governors, electronic governors, actuators, pneumatic governors, and electronic controls)
E6	CORE	Verify repairs on engine jacket water systems
E6	CORE	Verify repairs on engine lube oil systems
E6	CORE	Verify repairs on engine seawater systems
E6	CORE	Verify repairs on engine starting systems
E6	CORE	Verify repairs on fuel oil purification systems
E6	CORE	Verify repairs on fuel oil stripping systems

ENGINEERING MAINTENANCE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E6	CORE	Verify repairs on fuel oil transfer systems
E6	CORE	Verify repairs on jacking gears
E6	CORE	Verify repairs on potable water systems
E6	CORE	Verify repairs on reverse osmosis systems
E6	CORE	Verify turbo chargers

Job Title

Diesel Engine Systems Technician

Job Code

003179

Job Family

Installation, Maintenance, and Repair Occupations

NOC

TBD

Short Title (30 Characters)

DIESEL ENGINE SYS TEC

Short Title (14 Characters)

DIESEL SYS TEC

Pay Plan

Enlisted

Career Field

EN

Other Relationships and Rules

NECs UXXX Series and other NEC's assigned to the job

Job Description

Diesel Engine Systems Technicians repair, maintain, and service internal-combustion engines, machinery, and components used aboard Navy ships; provide technical knowledge during the operation and the maintenance of main propulsion diesel engine and reduction gears used for ship propulsion and auxiliary machinery, such as ships service diesel engine generators, and oil purifiers; provide guidance and technical knowledge in the maintenance of auxiliary machinery outside of main machinery spaces, such as electro-hydraulic steering engines, desalinization plants (Reverse Osmosis (RO)), and compressed gas producing plants; align piping systems for fuel, oil, water, and air; control the operation of ships main propulsion diesel engine, service systems, and the operation of ships service diesel engine generators; clean, adjust, test, and perform other preventive maintenance on ships main propulsion diesel engine, ships service diesel engine generators, and other auxiliary machinery including electro-hydraulic steering units, elevators, winches, pumps and associated valves; repair or replace valves, pumps, heat exchangers, compressors, 24 volt engine control systems, and hydraulic or pneumatic control devices; and make entries in and analyze machinery operating records and reports. Technicians are expected to perform work independently and mentor Diesel Engine Systems Maintainers with very limited supervision.

DoD Relationship

Group Title

Auxiliaries

DoD Code

165200

O*NET Relationship

Occupation Title

Motorboat Mechanics and Service and Technicians

SOC Code

49-3051.00

Job Family

Installation, Maintenance, Repair Occupations

Skills

Quality Control Analysis

Operation Monitoring

Systems Evaluation

Equipment Selection

Repairing

Troubleshooting

Reading Comprehension

Operation and Control

Equipment Maintenance

Writing

Abilities

Deductive Reasoning

Oral Comprehension

Written Comprehension

Information Ordering

Visualization

Category Flexibility

Manual Dexterity

Problem Sensitivity

Written Expression

Inductive Reasoning

ENGINEERING MANAGEMENT

Paygrade

Task Type

Task Statements

E7

NON-CORE

Approve Quality Assurance (QA) repair forms

E6

CORE

Maintain Diesel Readiness Systems (DRS)

E5

CORE

Maintain engineering records and logs

E5

NON-CORE

Prepare Current Ship's Maintenance Project (CSMP) input

E5

CORE

Prepare fuel, oil, and water reports

E5

NON-CORE

Prepare Quality Assurance (QA) repair forms

E4

CORE

Report accuracy of Engineering Operational Sequencing System (EOSS) manuals (Engineering Operational Procedures (EOP) and Engineering Operational Casualty Control (EOCC) procedures)

E6

CORE

Validate Engineering Operational Sequencing System (EOSS) manuals

E5

CORE

Verify Engineering Operational Sequencing System (EOSS) manuals (Engineering Operational Procedures (EOP) and Engineering Operational Casualty Control (EOCC) procedures)

E6

CORE

Verify engineering records and logs

E6

NON-CORE

Verify Quality Assurance (QA) repair forms

ENGINEERING MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Draw fluid samples
E4	CORE	Inspect flange shields
E5	CORE	Inspect fluid samples
E4	CORE	Maintain precision instruments
E4	CORE	Perform preventative maintenance on diesel engines
E5	CORE	Repair air dryer systems
E4	CORE	Repair auxiliary cooling water systems
E5	CORE	Repair blowers
E4	CORE	Repair compressed air systems
E4	CORE	Repair diaphragm control valve
E4	CORE	Repair diesel engines
E5	CORE	Repair emergency shutdown devices
E4	CORE	Repair engine air systems
E5	CORE	Repair engine barring gear components
E5	CORE	Repair engine control systems (i.e., mechanical governors, electronic governors, actuators, pneumatic governors, and electronic controls)
E4	CORE	Repair engine fuel oil systems (e.g., strainers, filters, valves, etc.)
E4	CORE	Repair engine jacket water systems
E4	CORE	Repair engine lube oil systems
E4	CORE	Repair engine seawater systems
E4	CORE	Repair engine starting systems
E4	NON-CORE	Repair firemain systems
E4	CORE	Repair fuel oil purification systems
E4	CORE	Repair fuel oil stripping systems
E4	CORE	Repair fuel oil transfer systems
E5	CORE	Repair heat exchangers
E4	CORE	Repair hot water plants
E5	CORE	Repair hydraulic systems (e.g., Control Pitch Propeller (CPP), steering gear etc.)
E5	CORE	Repair injection pumps
E4	CORE	Repair injectors and nozzles
E5	CORE	Repair jacking gears
E5	CORE	Repair lube oil purification systems
E4	CORE	Repair lube oil transfer systems
E5	CORE	Repair machinery clutches and brakes
E5	CORE	Repair machinery transmissions
E4	CORE	Repair main propulsion shafts (e.g., jet drive, outdrive, etc.)
E4	CORE	Repair oily waste water systems
E4	CORE	Repair potable water systems
E5	CORE	Repair reducing stations (e.g., air, water systems, hydraulics, etc.)

ENGINEERING MAINTENANCE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Repair reverse osmosis systems
E5	CORE	Repair turbo chargers
E4	NON-CORE	Replace pressure/temperature alarms and set points
E5	CORE	Troubleshoot air dryer systems
E5	CORE	Troubleshoot auxiliary cooling water systems
E6	CORE	Troubleshoot advanced electrical and electronic engine control components (e.g., transducer, rack potentiometer, sensors, etc.)
E5	CORE	Troubleshoot basic electrical and electronic engine control components (e.g., transducer, rack potentiometer, sensors, etc.)
E5	CORE	Troubleshoot blowers
E5	CORE	Troubleshoot compressed air systems
E5	CORE	Troubleshoot diaphragm control valves
E5	CORE	Troubleshoot diesel engines
E5	CORE	Troubleshoot emergency shutdown devices
E5	CORE	Troubleshoot engine air systems
E5	CORE	Troubleshoot engine barring gear components
E5	CORE	Troubleshoot engine control systems (i.e., mechanical governors, electronic governors, actuators, pneumatic governors, and electronic controls)
E5	CORE	Troubleshoot engine fuel oil systems (e.g., strainers, filters, valves, etc.)
E5	CORE	Troubleshoot engine jacket water systems
E5	CORE	Troubleshoot engine lube oil systems
E5	CORE	Troubleshoot engine seawater systems
E5	CORE	Troubleshoot engine starting systems
E5	NON-CORE	Troubleshoot firemain systems
E5	CORE	Troubleshoot fuel oil purification systems
E5	CORE	Troubleshoot fuel oil stripping systems
E5	CORE	Troubleshoot fuel oil transfer systems
E5	CORE	Troubleshoot heat exchangers
E4	CORE	Troubleshoot hot water plants
E5	CORE	Troubleshoot hydraulic systems (e.g., Control Pitch Propeller (CPP), steering gear, etc.)
E6	CORE	Troubleshoot injection pumps
E5	CORE	Troubleshoot injectors and nozzles
E5	CORE	Troubleshoot jacking gears
E5	CORE	Troubleshoot lube oil purification systems
E5	CORE	Troubleshoot lube oil transfer systems
E5	CORE	Troubleshoot machinery clutches and brakes
E5	CORE	Troubleshoot machinery transmissions
E5	CORE	Troubleshoot main propulsion shafts (e.g. jet drive, outdrive, etc.)
E5	CORE	Troubleshoot oily waste water systems

ENGINEERING MAINTENANCE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Troubleshoot potable water systems
E5	CORE	Troubleshoot reducing stations (e.g., air, water systems, hydraulics, etc.)
E5	CORE	Troubleshoot reverse osmosis systems
E5	CORE	Troubleshoot turbo chargers
E6	CORE	Verify diaphragm control valve repairs
E6	CORE	Verify diesel engine repairs
E6	CORE	Verify engine air system repairs
E6	CORE	Verify engine barring gear component repairs
E5	CORE	Verify engine fuel oil systems (e.g., strainers, filters, valves, etc.)
E6	CORE	Verify heat exchanger repairs
E7	CORE	Verify injection pumps
E6	CORE	Verify Injectors and nozzles
E6	CORE	Verify lube oil purification systems
E6	CORE	Verify lube oil transfer systems
E6	CORE	Verify machinery transmissions
E5	CORE	Verify main propulsion shafts (e.g., jet drive, outdrive, etc.)
E6	CORE	Verify oily waste water systems
E5	NON-CORE	Verify pressure/temperature alarms and set points
E5	CORE	Verify reducing stations (e.g., air, water systems, hydraulics, etc.)
E6	NON-CORE	Verify repairs firemain systems
E5	CORE	Verify repairs of hot water plants
E5	CORE	Verify repairs of hydraulic systems (e.g., Control Pitch Propeller (CPP), steering gear, etc.)
E6	CORE	Verify repairs of machinery clutches and brakes
E6	CORE	Verify repairs on blowers
E6	CORE	Verify repairs on compressed air systems
E6	CORE	Verify repairs on emergency shutdown devices
E6	CORE	Verify repairs on engine control systems (i.e., mechanical governors, electronic governors, actuators, pneumatic governors, and electronic controls)
E6	CORE	Verify repairs on engine jacket water systems
E6	CORE	Verify repairs on engine lube oil systems
E6	CORE	Verify repairs on engine seawater systems
E6	CORE	Verify repairs on engine starting systems
E6	CORE	Verify repairs on fuel oil purification systems
E6	CORE	Verify repairs on fuel oil stripping systems
E6	CORE	Verify repairs on fuel oil transfer systems
E6	CORE	Verify repairs on jacking gears
E6	CORE	Verify repairs on potable water systems
E6	CORE	Verify repairs on reverse osmosis systems
E6	CORE	Verify turbo chargers

MECHANICAL SYSTEMS OPERATIONS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Align air compressors
E4	CORE	Align air dryer systems
E4	CORE	Align auxiliary cooling water systems
E4	CORE	Align diesel engines
E4	CORE	Align fire pumps
E4	NON-CORE	Align firemain systems
E4	CORE	Align Fuel Oil (FO) and Lube Oil (LO) service systems
E4	CORE	Align fuel oil stripping systems
E4	CORE	Align heating systems
E4	CORE	Align hot water plants
E5	CORE	Align hydraulic systems (e.g., Control Pitch Propeller (CPP), steering, anchor windlass, etc.)
E4	CORE	Align main drainage systems
E4	CORE	Align oily waste water systems
E4	CORE	Align potable water system
E5	CORE	Align reducing stations (e.g., air, water systems, hydraulics, etc.)
E4	CORE	Align reverse osmosis systems
E4	CORE	Align seawater service strainers
E4	CORE	Align stern tube cooling systems
E4	CORE	Engage jacking gears
E4	CORE	Perform precision measurements
E5	CORE	Verify alignment of air compressors
E5	CORE	Verify alignment of air dryer systems
E5	CORE	Verify alignment of auxiliary cooling water systems
E5	CORE	Verify alignment of diesel engines
E5	CORE	Verify alignment of fire pumps
E5	NON-CORE	Verify alignment of firemain systems
E5	CORE	Verify alignment of Fuel Oil (FO) and Lube Oil (LO) service systems
E5	CORE	Verify alignment of fuel oil stripping systems
E5	CORE	Verify alignment of heating systems
E5	CORE	Verify alignment of hot water plants
E5	CORE	Verify alignment of hydraulic systems (e.g., Control Pitch Propeller (CPP), steering, anchor windlass, etc.)
E5	CORE	Verify alignment of jacking gears
E5	CORE	Verify alignment of main drainage systems
E5	CORE	Verify alignment of oily waste water systems
E5	CORE	Verify alignment of potable water systems
E5	CORE	Verify alignment of reducing stations (e.g., air, water systems, hydraulics, etc.)
E5	CORE	Verify alignment of reverse osmosis systems

MECHANICAL SYSTEMS OPERATIONS (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Verify alignment of stern tube cooling systems
E5	CORE	Verify jacking gear engagement
E5	CORE	Verify seawater service strainers

Job Title**Diesel Engine Systems Maintainer****Job Code****003653****Job Family**

Installation, Maintenance, and Repair Occupations

NOC

TBD

Short Title (30 Characters)

DIESEL ENGINE SYS MAINT

Short Title (14 Characters)

DIESEL SYS MNT

Pay Plan

Enlisted

Career Field

EN

Other Relationships and Rules

NECs UXXX Series and other NECs as assigned

Job Description

Diesel Engine Systems Maintainers operate and maintain main propulsion diesel engines, steering systems, air compressors, and reduction gears used for ship propulsion and auxiliary machinery, such as ships service diesel engine generators, pumps, and oil purifiers; maintain auxiliary machinery outside of main machinery spaces, such as electro-hydraulic steering units, desalination plants (Reverse Osmosis (RO)), and compressed gas producing plants; align piping systems for fuel, oil, water, and air; control operation of ship main propulsion diesel engine; control operation of ships service diesel engine generators; clean, adjust, test, and perform other preventive maintenance on the ship's internal-combustion engines and other auxiliary machinery including steering engines, pumps, and associated valves; repair or replace valves, pumps, heat exchangers, compressors, 24 volt engine control systems, and hydraulic or pneumatic control devices; and make entries in machinery operating records and reports. Maintainers work under the supervision of a mentor while learning a trade or skill.

DoD Relationship*Group Title*

Auxiliaries

DoD Code

165200

O*NET Relationship*Occupation Title*

Motorboat Mechanics and Service Technicians

SOC Code

49-3051.00

Job Family

Installation, Maintenance, and Repair Occupations

Skills*Equipment Selection**Repairing**Reading Comprehension**Operation and Control**Systems Evaluation**Equipment Maintenance**Quality Control Analysis**Operations Analysis**Systems Analysis**Troubleshooting***Abilities***Deductive Reasoning**Visualization**Written Comprehension**Manual Dexterity**Information Ordering**Problem Sensitivity**Written Expression**Inductive Reasoning**Near Vision**Visual Color Discrimination***ENGINEERING MANAGEMENT****Paygrade****Task Type****Task Statements**

E5

CORE

Maintain engineering records and logs

E5

NON-CORE

Prepare Current Ship's Maintenance Project (CSMP) input

E5

NON-CORE

Prepare Quality Assurance (QA) repair forms

E4

CORE

Report accuracy of Engineering Operational Sequencing System (EOSS) manuals (Engineering Operational Procedures (EOP) and Engineering Operational Casualty Control (EOCC) procedures)

E5

CORE

Verify Engineering Operational Sequencing System (EOSS) manuals (Engineering Operational Procedures (EOP) and Engineering Operational Casualty Control (EOCC) procedures)

ENGINEERING MAINTENANCE**Paygrade****Task Type****Task Statements**

E4

CORE

Draw fluid samples

E4

CORE

Inspect flange shields

E5

CORE

Inspect fluid samples

E4

CORE

Maintain precision instruments

E4

CORE

Perform preventative maintenance on diesel engines

ENGINEERING MAINTENANCE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Repair air dryer systems
E4	CORE	Repair auxiliary cooling water systems
E5	CORE	Repair blowers
E4	CORE	Repair compressed air systems
E4	CORE	Repair diaphragm control valve
E4	CORE	Repair diesel engines
E5	CORE	Repair emergency shutdown devices
E4	CORE	Repair engine air systems
E5	CORE	Repair engine barring gear components
E5	CORE	Repair engine control systems (i.e., mechanical governors, electronic governors, actuators, pneumatic governors, and electronic controls)
E4	CORE	Repair engine fuel oil systems (e.g., strainers, filters, valves, etc.)
E4	CORE	Repair engine jacket water systems
E4	CORE	Repair engine lube oil systems
E4	CORE	Repair engine seawater systems
E4	CORE	Repair engine starting systems
E4	NON-CORE	Repair firemain systems
E4	CORE	Repair fuel oil purification systems
E4	CORE	Repair fuel oil stripping systems
E4	CORE	Repair fuel oil transfer systems
E5	CORE	Repair heat exchangers
E4	CORE	Repair hot water plants
E5	CORE	Repair hydraulic systems (e.g., Control Pitch Propeller (CPP), steering gear etc.)
E5	CORE	Repair injection pumps
E4	CORE	Repair injectors and nozzles
E5	CORE	Repair jacking gears
E5	CORE	Repair lube oil purification systems
E4	CORE	Repair lube oil transfer systems
E5	CORE	Repair machinery clutches and brakes
E5	CORE	Repair machinery transmissions
E4	CORE	Repair main propulsion shafts (e.g. jet drive, outdrive, etc.)
E4	CORE	Repair oily waste water systems
E4	CORE	Repair potable water systems
E5	CORE	Repair reducing stations (e.g., air, water systems, hydraulics, etc.)
E5	CORE	Repair reverse osmosis systems
E5	CORE	Repair turbo chargers
E4	CORE	Replace flange shields
E4	NON-CORE	Replace pressure/temperature alarms and set points

ENGINEERING MAINTENANCE (CONT'D)

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Troubleshoot basic electrical and electronic engine control components (e.g., transducer, rack potentiometer, sensors, etc.)
E5	CORE	Troubleshoot compressed air systems
E5	CORE	Troubleshoot diesel engines

MECHANICAL SYSTEMS OPERATIONS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Align air compressors
E4	CORE	Align air dryer systems
E4	CORE	Align auxiliary cooling water systems
E4	CORE	Align diesel engines
E4	CORE	Align fire pumps
E4	NON-CORE	Align firemain systems
E4	CORE	Align Fuel Oil (FO) and Lube Oil (LO) service systems
E4	CORE	Align fuel oil stripping systems
E4	CORE	Align heating systems
E4	CORE	Align hot water plants
E5	CORE	Align hydraulic systems (e.g., Control Pitch Propeller (CPP), steering, anchor windlass, etc.)
E4	CORE	Align main drainage systems
E4	CORE	Align oily waste water systems
E4	CORE	Align potable water system
E5	CORE	Align reducing stations (e.g., air, water systems, hydraulics, etc.)
E4	CORE	Align reverse osmosis systems
E4	CORE	Align seawater service strainers
E4	CORE	Align stern tube cooling systems
E4	CORE	Engage jacking gears