

Marine Firemen's Union



RFPEW

Rating Forming Part of an Engineering Watch

Work & Record Book

Mariner's Name

Purpose of this book - For engine personnel to advance and get the required STCW endorsement of Rating Forming Part of an Engineering Watch, they must demonstrate their ability to do certain tasks. These tasks or competencies are listed in this Work and Record Book and must be "signed off" by appropriate personnel.

There are three (3) sections in this book. The first section consists of 27 control sheets. The assessments in this section are required for both the Steam and Motor Endorsements.

The second section consists of nine (9) control sheets. The assessments in this section are required for the Steam Endorsement.

The third section consists of five (5) control sheets. The assessments in this section are required for the Motor Endorsement.

Some competencies in sections two and three can be signed off on a gas turbine plant and they are identified in this book.

Each performance standard should be initialed by the assessor upon satisfactory completion by the candidate. The bottom of the control sheet should be filled out by the assessor upon completion of all performance standards on the corresponding page.

Section One

ALL PROPULSION MODES



RFPEW

Rating Forming Part of an Engineering Watch

**The assessments in this section are required for both the Steam
and Motor Endorsements**

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-1

ASSESSMENT RFPEW-1-1A (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Properly make a round during watch

PERFORMANCE STANDARD	Satisfactory
1. Inspects, monitors, and checks system parameters of all auxiliary systems and machinery, and main propulsion machinery, checks operating procedures, temperatures, flow and level indicators and collects readings for log book entries;	
2. Inspects bilges and pumps as necessary; notes piping condition in bilges and conducts visual inspection of sea chests;	
3. Checks machinery spaces for all signs of fire, flooding, loss of lighting, and electric shock hazard;	
4. Wipes up all spilled oil;	
5. Inspects all system and machinery piping for signs of leaks;	
6. Monitors all applicable strainer and filter pressure drops;	
7. Checks electric motors and machinery for overheating;	
8. Investigates any abnormal sounds, vibrations, or odors, as well as loose fittings, nuts, bolts, flanges, clamps, hangers, and connections;	
9. Checks for any gear adrift or machinery guards not in place;	
10. Notifies watch engineer of any unusual or unsafe conditions;	
11. Takes appropriate action to correct any unusual or unsafe conditions; and	
12. Ensures that no safety violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-2

ASSESSMENT RFPEW-1-1 C/2 (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitor lube oil or marine diesel oil purification plant

PERFORMANCE STANDARD	Satisfactory
1. Checks purifier's operational status;	
2. Checks the dirty-oil inlet;	
3. Checks the dirty-oil inlet pressure;	
4. Checks the clean-oil discharge pressure;	
5. Checks the purifier-gear drive oil sump level;	
6. Checks heater steam supply pressure, as applicable;	
7. Checks machine for vibration;	
8. Checks speed indicator for proper bowl speed;	
9. Determines the point of suction to be either engine sump, or settling tank, or other tank;	
10. Determines the point of discharge to be either engine sump or other lube oil storage tank;	
11. Checks for any unusual conditions or noises;	
12. Notifies the watch engineer of any unusual or unsafe conditions; and	
13. Ensures that no safety or pollution violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-3

ASSESSMENT RFPEW-1-1D (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitor compressed air plants

PERFORMANCE STANDARD	Satisfactory
1. Checks plant's operational status;	
2. Checks compressor oil level and adds oil as necessary;	
3. Checks compressor oil pressure, if applicable;	
4. Checks air-compressor air-inlet filter pressure differential;	
5. Checks air-compressor discharge pressure and compressed air service tank pressures;	
6. Checks for any unusual conditions or noises;	
7. Blows down intercoolers, after coolers (if applicable), and receivers, checks associated refrigerated filter system and looks for fouling of cooling fins;	
8. Notifies the watch engineer of any unusual or unsafe conditions;	
9. Identifies emergency cross-connect between ship's service air and control air systems (if applicable);	
10. Identifies valves to direct "air on deck" and their open/closed status;	
11. Identifies settings of standby equipment; and	
12. Ensures that no safety or pollution violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-4

ASSESSMENT RFPEW-1-1E (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitor refrigeration and air conditioning plants

PERFORMANCE STANDARD	Satisfactory
1. Checks plant's operational status;	
2. Checks compressor suction pressure;	
3. Checks compressor discharge pressure;	
4. Checks compressor-oil level;	
5. Checks compressor-oil pressure and control-oil pressure;	
6. Checks receiver level;	
7. Checks liquid-line sight glass flow condition;	
8. Checks refrigerated box temperatures and condition of the evaporator coils and drains for icing;	
9. Notes the condition of all refrigerated box door gaskets and operation of circulating fans;	
10. Checks condenser sea-water inlet and outlet temperatures;	
11. Checks chilled-water pump suction and discharge pressures, if applicable;	
12. Checks chilled-water inlet and outlet temperatures, if applicable;	
13. Checks chilled-water expansion-tank level, if applicable;	
14. Notifies the watch engineer of any unusual or unsafe conditions; and	
15. Ensures that no safety or pollution violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
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**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-5

ASSESSMENT RFPEW-1-1F (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Determine tank and pressure vessel levels

PERFORMANCE STANDARD	Satisfactory
1. Determines the liquid level of vented tanks and low-pressure pressure vessels fitted with tubular sight glasses;	
2. Determines the liquid level of a high-pressure pressure vessel fitted with a high-pressure gauge glass and/or remote level indicator;	
3. Determines the liquid level of a vented tank fitted with petcocks;	
4. Sounds the liquid level of at least two vented tanks (fuel and/or lube oil and/or water), fitted with sounding tubes, using an ullage sounding tape;	
5. Determines the fluid level of a lube oil sump fitted with a dipstick;	
6. Determines the liquid level of a vented tank fitted with a pneumericator; or other remote reading level indicating device; and	
7. Determines the oil/water interface level of the slop tank.	

Candidate - Name		Candidate - SSN	
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Assessor - Name		Assessor - Position	
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**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-6

ASSESSMENT RFPEW-1-1J (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitor propulsion shafting and bearings

PERFORMANCE STANDARD	Satisfactory
1. Checks all line shaft bearing oil sump levels;	
2. Checks all line shaft bearing oiling rings for rotation with shaft;	
3. Checks oil lubricated stern tube lube sump tank level where appropriate;	
4. Checks oil lubricated stern tube lube oil pressure where appropriate;	
5. Checks oil lubricated stern tube oil temperatures where appropriate;	
6. Checks oil lubricated stern tube inboard shaft seal for leakage if appropriate;	
7. Notifies watch engineer of any unusual or unsafe conditions; and	
8. Ensures that no safety violations are observed.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
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**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-7

ASSESSMENT RFPEW-1-1K (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitor the steering gear

PERFORMANCE STANDARD	Satisfactory
1. Correctly compares rudder angle mechanical sliding scale with electrical indicator, if fitted;	
2. Monitors steering gear for leaks, noises, pressure, temperature and oil levels;	
3. Tests communication devices;	
4. Observes various linkages for wear, loosening, or lost motion;	
5. Notes glands on main rams and rudderpost for leakage;	
6. Adds oil to hydraulic sumps as required; and notes quantity added;	
7. Notifies the watch engineer of all unusual or unsafe conditions; and	
8. Ensures that no safety violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
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**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-8

ASSESSMENT RFPEW-1-2A (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Replenish oil to equipment sump

PERFORMANCE STANDARD	Satisfactory
1. Determines the need to add oil;	
2. Obtains an adequate amount of clean oil of proper grade and type;	
3. Removes the filler cap or plug;	
4. Pours oil through the filler cap or oil filler plug opening;	
5. Checks the oil level and verifies that it stands at the specified level;	
6. Replaces the filler cap or plug and leaves the area clean;	
7. Notifies watch engineer of quantity added; and	
8. Ensures that no safety or pollution violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-9 (Part A)

ASSESSMENT RFPEW-1-2B (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Lubricate grease-lubricated bearings

(A) GREASE LUBRICATED BEARING FITTED WITH ZIRC OR ALEMITE FITTING:

PERFORMANCE STANDARD	Satisfactory
1. Determines from appropriate lubrication chart the type and grade of grease to be used;	
2. Obtains grease gun with appropriate grease, hoses, and connections;	
3. Removes pipe plug from bearing housing if fitted;	
4. Wipes grease fitting free of grease and dirt with a rag;	
5. Removes air from grease gun hose by slowly squeezing handle until grease starts to exit fitting;	
6. Attaches hose fitting to bearing grease fitting;	
7. Slowly pumps in grease until grease just begins to appear at bearing lip seals. If high resistance is met, ceases attempt and notifies watch engineer;	
8. Removes hose fitting from bearing grease fitting;	
9. Wipes zirc fitting free of grease with a rag; and	
10. Replaces pipe plug in bearing housing if fitted after 20 minutes of operation to allow excess grease to escape.	

*****Continue Part B on next page*****

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-9 (Part B)

ASSESSMENT RFPEW-1-2B (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Lubricate grease-lubricated bearings

(B) GREASE CUP EQUIPPED GREASE LUBRICATED BEARING:

PERFORMANCE STANDARD	Satisfactory
1. Determines from appropriate lubrication chart the type and grade of grease to be used;	
2. Obtains sufficient clean quantity of correct grease;	
3. Removes drain plug opposite grease cup and ensures hole is free from hardened grease;	
4. Removes cap from grease cup;	
5. Wipes out grease cap with rag;	
6. Fills grease cap with grease;	
7. Reinstalls cap onto grease cup gently screwing cap on to force grease into bearing housing;	
8. Continue as necessary until grease begins to ooze out of drain hole;	
9. Wipes excess grease from bearing housing with a rag; and	
10. Reinstalls drain plug.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
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**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-10

ASSESSMENT RFPEW-1-2C (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Clean a sea-water strainer

PERFORMANCE STANDARD	Satisfactory
1. Ascertains the need for cleaning a duplex strainer;	
2. Ensures that the selector handle is position over the element housing not being cleaned;	
3. Insures strainer housings depressurized and that selector plug is not leaking;	
4. Loosens idle strainer lid fasteners or hold down dogs as appropriate;	
5. Removes fasteners or positions dogs clear out of the way;	
6. Lifts off strainer lid and sets aside;	
7. Lifts out strainer basket;	
8. Cleans strainer basket;	
9. Reinstalls strainer basket;	
10. Inspects housing and lid mating surfaces; scrapes, cleans and replaces gasket as necessary;	
11. Replaces and aligns lid on top of strainer housing;	
12. Tightens bolts or firmly tightens hold down dogs;	
13. Closes off strainer cover vent;	
14. Slowly changes over strainer; checking for housing leaks, significant pressure drop, etc;	
15. Cracks open, then closes off vent to bleed off trapped air; and	
16. Notifies watch engineer of any unusual or unsafe conditions.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-11

ASSESSMENT RFPEW-1-2D (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Safe working practices as related to engine room operations

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Assists in cleaning a lube oil or fuel oil purifier to demonstrate safe working practices for the following:

- Lifting heavy equipment
- Assist in placing purifier on line
- Putting steam on heaters
- Handling chemicals
- Working with delicate equipment
- Cleaning an oil strainer

PERFORMANCE STANDARD	Satisfactory
1. Performs tasks safely using all required safety equipment (safety shoes, safety glasses, explosion-proof lighting and electrical devices, hearing protection, gloves, hard hat, respirator mask, etc.) and adhere to all safety procedures (verifies tag-out procedures, notifications, safe lifting techniques, etc.);	
2. Assists in disassembly of purifier using appropriate tools as provided;	
3. Cleans all sludge deposits from individual disks, bowl top, and bowl;	
4. Assists in reassembling purifier, reinstalling all disks and in numerical order;	
5. Leaves area safe and secure;	
6. Reports all unusual findings or unsafe conditions;	
7. Cleans the suction strainer, if applicable; and	
8. Ensures that no safety violations are observed.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-12

ASSESSMENT RFPEW-1-2E (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Adjust a gate or globe valve stuffing box gland

PERFORMANCE STANDARD	Satisfactory
1. Determines for the need to take up on gate or globe stuffing box gland;	
2. Checks for bent or scored stem;	
3. Checks valve for ease of operation, ensuring that it is candidate for taking up on the gland without the necessity of adding packing or repacking the valve;	
4. Checks position of gland to determine if it may be further tightened;	
5. Tightens alternately each gland nut, by one flat at a time and evenly until stem to bonnet leakage ceases;	
6. Inspects the gland to insure that it is perpendicular to the valve stem; and	
7. Checks valve opening/closing for ease of operation ensuring that operation is not unacceptably difficult.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-13

ASSESSMENT RFPEW-1-2F (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Take on fresh water

PERFORMANCE STANDARD	Satisfactory
1. Determines from the watch engineer or equivalent, the order in which to fill the fresh water tanks;	
2. Lines up filling system properly;	
3. Retrieves properly designated hose from storage and sanitize hose fittings and all connections;	
4. Flushes out dock connection;	
5. Assists taking water sample for testing before taking on water;	
6. Properly takes on fresh water;	
7. Secures fresh water manifold after task is complete;	
8. Uses proper procedure to uncouple, drain, and stow hose; and	
9. Notifies watch engineer of completion and of any meter readings/tank soundings.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-14

ASSESSMENT RFPEW-1-3A (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Basic environmental protection procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Pump the bilges to holding tank from one of the following locations:

- Shaft alley
- Engine room
- Cargo hold

PERFORMANCE STANDARD	Satisfactory
1. Correctly lines up the bilge system to bilge well(s) to be pumped and to the correct holding tank in accordance with ship's procedures;	
2. Pumps the bilges until steady indication that bilges are dry (loss of pump suction); while monitoring bilge water collection tank level to prevent overflow;	
3. Provides tank-level data and start/stop times to the officer-in-charge of the engine watch; and	
4. Ensures that no safety or pollution violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-15

ASSESSMENT RFPEW-1-3B (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Basic environmental protection procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitor the oily water separators

PERFORMANCE STANDARD	Satisfactory
1. Checks oily-water separator's operational status;	
2. Checks bilge-waste holding tank level;	
3. Checks oily-water separator chamber pressure or vacuum;	
4. Checks filling related pressure vacuum;	
5. Checks overboard discharge water pump pressure;	
6. Monitors oil-content monitor: (a) ensures that equipment is not bypassed, sampling line is open, and flushing water is not being supplied to sensor; (b) automatic valves are not operated in manual mode or disconnected from controlling devices; and (c) no temporary hoses are connected or used during operation; checks for any unusual conditions or noises;	
7. Notifies the watch engineer of any unusual or unsafe conditions; and	
8. Ensures that no safety or pollution violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-16

ASSESSMENT RFPEW-1-3C (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Basic environmental protection procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitor sewage treatment plants

PERFORMANCE STANDARD	Satisfactory
1. Checks the plant's operational status;	
2. Checks the destination of "black water" sewage;	
3. Checks sewage circulating and overboard discharge pump pressures;	
4. Checks sewage circulating and overboard discharge pump mechanical seals for leakage;	
5. Checks air compressor discharge pressure;	
6. Checks chemical batch tank for proper operating level;	
7. Checks for any unusual conditions or noises;	
8. Notifies watch engineer of any unusual or unsafe conditions; and	
9. Ensures that no safety or pollution violations are observed.	

Candidate - Name		Candidate - SSN	
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**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-17

ASSESSMENT RFPEW-2-1A (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Properly relieve the watch

PERFORMANCE STANDARD	Satisfactory
1. Reports for duty 15 minutes before the hour to make a quick round of the machinery spaces to determine the general operation status and satisfactory condition;	
2. Determines from the off-going watch: (a) operational status of the plant; (b) unusual alarms or conditions occurring during the previous watch; (c) standing orders; (d) maintenance performed during the previous watch; (e) on-going repairs affecting plant operations; and (f) outstanding safety conditions; and	
3. Seeks clarification from the off-going watch or engineer if information was not clearly understood.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-18

ASSESSMENT RFPEW-2-1B (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Properly hand over the watch

PERFORMANCE STANDARD	Satisfactory
1. In preparation for relief, ensures that all assigned routine duties are completed before the conclusion of the watch;	
2. Communicates to the on-coming watch: (a) operational status of the plant; (b) unusual alarms or conditions occurring during previous watch; (c) standing orders; (d) maintenance performed during previous watch; (e) on-going repairs affecting plant operations; and (f) outstanding safety conditions; and	
3. Ensures that the watch relief is fully aware of the operational status of the plant.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-19

ASSESSMENT RFPEW-2-2A (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Use of appropriate internal communication systems

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Demonstrate the correct operation and use of all internal communications systems

PERFORMANCE STANDARD	Satisfactory
1. Answers phone stating location, name, and rank;	
2. Correctly operates and communicates with remote stations via ship's phone;	
3. Correctly operates and communicates with remote stations via sound powered phone;	
4. Correctly operates and communicates with remote stations via two way radio;	
5. All operations are conducted in accordance with ship's procedures; and	
6. Ensures that no safety violations are observed.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-20

ASSESSMENT RFPEW-2-2B (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders, and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, given proper equipment

PERFORMANCE BEHAVIOR: Upon receiving each of the bell signals, the candidate will log the bells as indicated from full ahead to full astern including stop and finished with engines

PERFORMANCE STANDARD	Satisfactory
1. When directed, obtains correct counter and fuel oil meter readings at stand-by or departure or arrival;	
2. Correctly acknowledges main engine direction and speed by matching engine order telegraph with order from bridge;	
3. Correctly enters appropriate graphic bell signal symbol and logs with correct time; and	
4. Entries are legible.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-21

ASSESSMENT RFPEW-2-3A (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine room alarm systems and ability to distinguish between the various alarms, with special reference to fire-extinguishing gas alarms

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Upon being alerted to each of the following alarms (audible and/or visual), the candidate will immediately identify the alarm and describe the appropriate response of a person in his/her position to the alarm

- CO2 discharge alarm;
- Fire or smoke alarms;
- Vital and non-vital engine operational alarms, including, but not limited to lube oil alarms (temperature and pressure), boiler alarms, fuel-oil tank high-level alarm, oily-water separator alarm, and high-bilge-water alarm; and
- Vessel emergency signal or alarm

PERFORMANCE STANDARD	Satisfactory
For each alarm response, the candidate should be able to: <ol style="list-style-type: none"> 1. Silence the alarm; 2. Describe the system involved; 3. Describe the system's purpose; 4. Describe the seriousness of the alarm; and 5. Notify the officer-in-charge of the engine watch of the alarm and his/her actions. 	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-22

ASSESSMENT RFPEW-3-1A (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: For keeping a safe boiler watch: Maintain the correct water levels and steam pressures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Safe operation of boilers

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Maintain the water level specified by the assessor for the main or the auxiliary boiler

PERFORMANCE STANDARD	Satisfactory
1. Maintains the boiler water level within +/- 2 inches of specified level through use and manipulation of feed water controller while standing a boiler watch; and	
2. Ensures that no safety violations are observed.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-23

ASSESSMENT RFPEW-3-1B (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: For keeping a safe boiler watch: Maintain the correct water levels and steam pressures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Safe operation of boilers

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Maintain the steam pressures specified by the assessor in the main or the auxiliary boiler

PERFORMANCE STANDARD	Satisfactory
1. Maintains the boiler steam pressure within +/- 5% of specified pressure through use and manipulation of fuel/air ratio controller while standing a boiler watch; and	
2. Ensures that no safety violations are observed.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-24

ASSESSMENT RFPEW-3-1C (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: For keeping a safe boiler watch: Maintain the correct water levels and steam pressures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Safe operation of boilers

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR:

Candidate will record readings from the boiler gauges:

- Pressure;
- Temperature; and
- Water level.

PERFORMANCE STANDARD	Satisfactory
1. Correctly determines and records the indicated pressures within +/- 2%, indicated temperatures within +/- 2% and observed water levels within +/- 1 inch; and	
2. Ensures that no safety violations are observed.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-25

ASSESSMENT RFPEW-4-1A (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Operate emergency equipment and apply emergency procedures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Escape routes from machinery spaces

PERFORMANCE CONDITION: Aboard a ship, in port or underway, given proper equipment

PERFORMANCE BEHAVIOR: Locate all engine room escape routes, describe the emergency escape procedure for each and perform escapes using the shortest open route and up an escape trunk (if so equipped)

PERFORMANCE STANDARD	Satisfactory
1. Locates all emergency escape routes;	
2. Describes the operations and procedures appropriate to each means of escape (including the use of emergency escape breathing devices);	
3. Demonstrates the (a) shortest open route, and (b) an escape trunk, if so equipped; and	
4. Ensures that no safety violations are observed.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-26

ASSESSMENT RFPEW-4-2A (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Operate emergency equipment and apply emergency procedures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Familiarity with the location and use of fire-fighting equipment in machinery spaces

PERFORMANCE CONDITION: Aboard a ship, in port or underway, given proper equipment

PERFORMANCE BEHAVIOR: Using the fire safety plan, the candidate will locate each piece of equipment in the machinery space, beginning with the nearest, state its purpose and describe its use or operation

PERFORMANCE STANDARD	Satisfactory
1. Locates the nearest piece of each item from the list of fire-fighting and emergency equipment;	
2. Correctly states the purpose and describes the use or operation of the item or equipment named; and	
3. Ensures that no safety violations are observed.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET ALL-27

ASSESSMENT RFPEW-4-2B (ALL PROPULSION MODES)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Operate emergency equipment and apply emergency procedures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Familiarity with the location and use of fire-fighting equipment in machinery spaces

PERFORMANCE CONDITION: Aboard a ship, in port or underway, given proper equipment

PERFORMANCE BEHAVIOR: Put a main or emergency fire pump in service

PERFORMANCE STANDARD	Satisfactory
1. Checks or opens all required suction and discharge valves;	
2. Correctly starts pump;	
3. Fire pump discharge pressure rises to operating pressure;	
4. Checks running condition of pump and motor;	
5. Properly secures pump; and	
6. Ensures that no safety violations are observed.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

Section Two

STEAM



RFPEW

Rating Forming Part of an Engineering Watch

**The assessments in this section are required for the Steam
Endorsement**

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET STEAM-1

ASSESSMENT RFPEW-1-1 B/2 (STEAM PLANTS)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitor electricity generating plants

PERFORMANCE STANDARD	Satisfactory
1. Checks plant's operational status;	
2. Checks generator rpm;	
3. Checks generator frequency;	
4. Checks generator output voltage;	
5. Checks generator output amperage;	
6. Checks generator kilowatt output;	
7. Checks generator kilovolt-amp output;	
8. Checks generator bearings' temperature and oil flow;	
9. Checks generator lube-oil sump levels;	
10. Checks the physical condition of pipes, tubing, and hoses for wear or leaks;	
11. Observes lube-oil and cooling-water temperatures and pressures;	
12. Observes auxiliary condenser vacuum and exhaust temperatures;	
13. Observes level of condensate in auxiliary condenser hot well;	
14. Checks for any unusual conditions or noises;	
15. Notifies the watch engineer of any unusual or unsafe conditions; and	
16. Ensures that no safety violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET STEAM-2

ASSESSMENT RFPEW-1-1G (STEAM PLANTS)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Adjust the water level set point and the pressure range for potable water tank

PERFORMANCE STANDARD	Satisfactory
1. Correctly adjusts pressure range with-in +/- 5% of operating condition for potable water tank;	
2. Establishes water level in tank within one-inch of set point level; and	
3. Ensures that no safety violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET STEAM-3

ASSESSMENT RFPEW-1-1 H/2 (STEAM PLANTS & GAS TURBINE)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitors Operation of Fresh Water Distillation Plant

PERFORMANCE STANDARD	Satisfactory
1. Verifies that overboard brine pump is discharging at required pressure;	
2. Verifies distiller salt water feed pump discharging at required pressure;	
3. Opens steam root valve to distiller unit steam air ejectors;	
4. Monitors and records steam supply pressure to salt water feed heater;	
5. Regulates desuperheater condensate flow to maintain steam supply temperature of no higher than 210 degrees F to salt water feed water heater if live steam is used;	
6. Verifies half of a gage glass is maintained in salt water feed heater hot well;	
7. Adjusts salt-water flow from salt water feed heater to maintain minimum temperature of feed water at 165 degrees F to first stage;	
8. Observes spray pattern of feed water and level of water at bottom of flash chamber;	
9. Monitors and records all salinity cell readings and verifies that three-way dump valve has not tripped;	
10. Verifies that distillate pump is operating, suction line gage glass is at half full, and that distillate level is indicated to be at or below .25 GPG (4.24 PPM); and	
11. Verifies tank to be replenished (potable water or distilled water) is lined-up as noted on engine room status board.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET STEAM-4

ASSESSMENT RFPEW-1-1I/2 (STEAM PLANTS & GAS TURBINE)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitor the main turbines

PERFORMANCE STANDARD	Satisfactory
1. Monitors the main lube-oil temperature and leaving the main lube-oil cooler;	
2. Monitors the main lube-oil sump well;	
3. Monitors the main lube-oil gravity tank for continuous overflow;	
4. Monitors the lube-oil pressure;	
5. Monitors the oil-return temperature from each bearing and indicators for continuous flow;	
6. Checks main condenser water boxes for leaks;	
7. Monitors main condensate and main circulator pumps;	
8. Checks air-ejector equipment and monitors main condenser vacuum;	
9. Checks auxiliary exhaust steam pressure, shell pressure and water level in de-aerating feed tank;	
10. Monitors main condenser vacuum and engine exhaust temperature;	
11. Notifies the watch engineer of any unusual or unsafe conditions, unusual sounds, or vibrations; and	
12. Ensures that no safety violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET STEAM-5

ASSESSMENT RFPEW-3-1D (STEAM PLANTS & GAS TURBINE)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: For keeping a safe boiler watch: Maintain the correct water levels and steam pressures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Safe operation of boilers

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Change out burners

PERFORMANCE STANDARD	Satisfactory
1. Checks clean burner barrel is available and properly assembles with required sprayer plate;	
2. Secures burner atomizer valve to burner to be cleaned;	
3. Removes burner and transfers to burner cleaning bench using appropriate insulated gloves and cleans floor plates of dripped oil occurring during the transfers;	
4. Inserts clean burner; tightening all connections;	
5. Opens burners register air vanes and prepares to relight burner using torch;	
6. Opens burner atomizer valve and adjusts combustion air to maintain economy brown haze in stack; and	
7. Ensures that no safety violations are observed.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET STEAM-6

ASSESSMENT RFPEW-3-1E (STEAM PLANTS & GAS TURBINE)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: For keeping a safe boiler watch: Maintain the correct water levels and steam pressures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Safe operation of boilers

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Clean a burner assembly

PERFORMANCE STANDARD	Satisfactory
1. Disassembles dirty burner;	
2. Places tip in a container, furnace face upward, and soaks all other parts in kerosene until carbon has softened;	
3. Remove parts from kerosene;	
4. Cleans parts of carbon and debris with non-ferrous tools;	
5. Stows disassembled burner barrel;	
6. All operations are in accordance with manufacturer's recommended procedures; and	
7. Ensures that no safety violations are observed.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET STEAM-7

ASSESSMENT RFPEW- 3-1F (STEAM PLANTS)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: For keeping a safe boiler watch: Maintain the correct water levels and steam pressures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Safe operation of boilers

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Assists in manual light off a main propulsion boiler

PERFORMANCE STANDARD	Satisfactory
1. Ensures auxiliary and main feed checks are closed;	
2. Opens all air registers to idle boiler furnace;	
3. Starts idle boiler forced draft fan for minimum five-minute purge;	
4. Engages and sets fuel oil service system master (solenoid) valve;	
5. Opens fuel oil service system recirculation valve;	
6. Verifies fuel oil manifold pressure, and sets to minimum 125 psi;	
7. Verifies steam drum air cock, superheater vent, and superheater drain valves are open;	
8. Verifies that a minimum of one inch of water is visible at bottom of gage glass;	
9. Readies burner with small orifice sprayer plate tip (BWG 53);	
10. Positions burner in register (furthest from superheater tubes.) and closes all air registers, with exception of register with burner in place;	
11. Adjusts and locks air damper to "light-off" position;	
12. Verifies F.O. has attained light-off temperature of 210 degrees F;	
13. Ignites torch and inserts through register inspection hole and positions by burner tip;	
14. Adjusts air register to prevent extinguishing torch;	
15. Opens burner root valve, and then F.O. atomizer valve to ignite burner;	
16. Adjusts combustion air to maintain brown haze issuing from stack;	
17. Closes F.O. recirculating valve;	
18. Periodically observes periscope/light intensity to modify supply of combustion air to prevent "smoking;"	
19. Verifies steam flow through superheater vent;	
20. Secures steam drum air cock at 15 psig;	
21. Verifies oncoming boiler pressure has attained pressure within 50 psi of online boiler working pressure;	
22. Secures burner if boiler is not to be placed on line; and	
23. Closes superheater drains and vent.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET STEAM-8

ASSESSMENT RFPEW- 3-1G (STEAM PLANTS)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: For keeping a safe boiler watch: Maintain the correct water levels and steam pressures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Safe operation of boilers

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Fire a main propulsion boiler during maneuvering

PERFORMANCE STANDARD	Satisfactory
1. Upon being directed by OICEW one hour prior to maneuvering to have required burners prepared and ready;	
2. Ensures auxiliary and main feed checks are closed;	
3. Verifies that fuel oils service system master (solenoid) valve is properly engaged for each boiler;	
4. Verifies that fuel oil service system recirculation valve is closed;	
5. Verifies the operation of the fuel oil service pump and normal discharge pressure is maintained;	
6. Verifies water is visible in boiler gauge glass at half or normal drum level;	
7. Readies all burners with varying orifice spray plates per vessel maneuvering operations;	
8. Verifies F.O. temperature is steady at 210 degrees F;	
9. When directed that engine sea speed will be reduced to maneuvering speed, fuel to at least one burner in each boiler will be secured;	
10. Combustion air will be reduced to the proper fuel/air ratio by reducing forced draft fan speed, and or air register opening, or combustion control board air ratio controller, or through a combination of events as is necessary;	
11. Periodically observes periscope/light intensity to modify supply of combustion air to prevent "smoking;"	
12. Continually monitors boiler water level, modulating feed pump speed as necessary, yet avoiding feed water flow changes as an over reaction during periods of shrink and swell due to engine speed changes; and	
13. Ensures that as engine speed is increased, combustion air will be increased prior to fuel flow increase by increasing forced draft fan speed, and/or air register opening, or combustion control board air ratio controller, or through a combination of events as is necessary.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET STEAM-9

ASSESSMENT RFPEW-3-1H (STEAM PLANTS)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: For keeping a safe boiler watch: Maintain the correct water levels and steam pressures

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Safe operation of boilers.

PERFORMANCE CONDITION: Aboard a ship while underway, or in an approved simulator or laboratory, given proper equipment

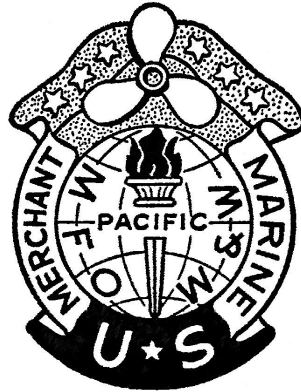
PERFORMANCE BEHAVIOR: The candidate will demonstrate the procedures and actions taken daily to assist in the daily maintenance of the main propulsion boilers while at sea through the operation of the soot blower system

PERFORMANCE STANDARD	Satisfactory
1. When directed, the candidate increases the deaerating feed water tank (DFT) level in preparation for using the steam soot blowers;	
2. Verifies that the drain valve of the soot blower system line is open;	
3. Slowly opens the soot blower steam isolation valves;	
4. Observes the output from the soot blower system drain, and secures the drain valve when it is determined that only steam is present;	
5. Informs the OICEW when the system is ready;	
6. Increases the speed of the forced-draft fan;	
7. Physically pulls on any chain drive or manually rotates any crank to operate in its proper sequence any non-air motor-driven soot blower;	
8. Assists in maintaining a watch on the main propulsion boiler water level, steam, pressure, and DFT water level; and	
9. At the end of cycling all soot blowers, secures the steam isolation valve to the soot blowers and opens the soot blower steam line drain.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

Section Three

MOTOR



RFPEW

Rating Forming Part of an Engineering Watch

**The assessments in this section are required for the Motor
Endorsement**

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET MOTOR-1

ASSESSMENT RFPEW-1-1 B/1 (MOTOR PLANTS & GAS TURBINE)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitor electricity generating plants

PERFORMANCE STANDARD	Satisfactory
1. Checks plant's operational status;	
2. Checks generator rpm;	
3. Checks generator frequency;	
4. Checks generator output voltage;	
5. Checks generator output amperage;	
6. Checks generator kilowatt output;	
7. Checks generator kilovolt-amp output;	
8. Checks generator bearings' temperature and oil flow;	
9. Checks governor, turbocharger, and sump and reduction gear lube-oil levels as applicable;	
10. Checks the physical condition of pipes, tubing, and hoses for wear or leaks;	
11. Observes lube-oil and cooling-water temperatures and pressures;	
12. Observes air intake, fuel oil, and exhaust temperatures and pressures;	
13. Observes the condition of air-intake filters;	
14. Reads fuel-oil meter and day-tank levels as applicable;	
15. Checks for any unusual conditions or noises;	
16. Notifies the watch engineer of any unusual or unsafe conditions; and	
17. Ensures that no safety violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET MOTOR-2

ASSESSMENT RFPEW-1-1 C/1 (MOTOR PLANTS)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitor heavy fuel oil purification plant

PERFORMANCE STANDARD	Satisfactory
1. Checks purifier's operational status;	
2. Checks the dirty-oil inlet pressure;	
3. Checks the dirty-oil discharge pressure;	
4. Checks the clean-oil discharge pressure;	
5. Checks the purifier-gear drive oil sump level;	
6. Checks level in sealing-water head tank;	
7. Checks inlet and outlet sight glasses for flow;	
8. Checks heater steam supply pressure;	
9. Feels machine for vibration;	
10. Checks speed indicator for proper bowl speed;	
11. Determines the point of suction to be settling tank;	
12. Determines the point of discharge to be day tank;	
13. Checks operating water pressure;	
14. Checks control air pressure;	
15. Checks for any unusual conditions or noises;	
16. Notifies the watch engineer of any unusual or unsafe conditions; and	
17. Ensures that no safety or pollution violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET MOTOR-3

ASSESSMENT RFPEW-1-1 H/1 (MOTOR PLANTS)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitors operation of fresh water distillation plant

PERFORMANCE STANDARD	Satisfactory
1. Verifies distiller salt water feed pump is discharging to distiller shell and educators at required pressure;	
2. Monitors and records jacket cooling water flow to salt water feed heater submerged tube bundle maintaining a 10 degree C temperature differential between inlet and outlet;	
3. Verifies that salt water flow to salt water feed heater minimum temperature is at or above 165 degrees F;	
4. Monitors and records all salinity cell readings and verifies that three-way dump valve has not tripped and recirculating distillate back to distiller;	
5. Verifies that distillate pump is operating, suction line gage glass is at half full, and that distillate level is indicated to be at or below .25 GPG (4.24 PPM); and	
6. Verifies tank to be replenished (potable water or distilled water) is lined-up as noted on engine room status board.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET MOTOR-4

ASSESSMENT RFPEW-1-1I/1 (MOTOR PLANTS)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Engine-room watch keeping procedures

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Monitor the main diesel engine

PERFORMANCE STANDARD	Satisfactory
1. Monitors the main lube-oil cooler inlet and outlet temperatures;	
2. Monitors the lube-oil pressure to the engine;	
3. Monitors the oil-return temperature from each bearing;	
4. Monitors cooling water pump temperature and pressures, and maintains them on the orders of the officer in-charge of the engine watch;	
5. Inspects fuel-injector leak-off piping, high-pressure delivery lines, and indicator cocks;	
6. Inspects fuel-oil booster pump strainers, filters and pressures;	
7. Inspects fuel oil service pump strainers, filters and pressures;	
8. Inspects fuel oil and viscosimeter set point as applicable;	
9. Observes governor operation and lube-oil level;	
10. Observes fuel-pump and/or fuel injector rack settings;	
11. Observes telescopic links and cylinder lubrication, if fitted;	
12. Checks operation of crankcase vacuum fans, mist detectors, and condition of explosion covers;	
13. Checks start air compressors temperature and pressures;	
14. Monitors main compressed air receiver pressure;	
15. Drains main compressed air receiver;	
16. Notifies the watch engineer of any unusual or unsafe conditions, unusual sounds, or vibrations; and	
17. Ensures that no safety violations have occurred.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

**TABLE A-III/4 Specification of Minimum Standard of Competence
RATING FORMING PART OF AN ENGINEERING WATCH**

CONTROL SHEET MOTOR-5

ASSESSMENT RFPEW-2-1C (MOTOR & GAS TURBINE PLANTS)

FUNCTION: Marine Engineering at the Support Level

COMPETENCE: Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch; Understand orders and be understood in matters relevant to watch keeping duties

KNOWLEDGE, UNDERSTANDING & PROFICIENCY: Safe working practices as related to engine room operations

PERFORMANCE CONDITION: Aboard a ship, in port or underway, or in an approved simulator or laboratory, given proper equipment

PERFORMANCE BEHAVIOR: Assist in a pre-start check of a main or auxiliary diesel engine

PERFORMANCE STANDARD	Satisfactory
1. Checks general exterior of engine for debris, lube oil, fuel oil, and cooling water leaks, or unsafe conditions;	
2. Checks lube oil levels in sump and governor, adds oil as necessary, recording quantity if added;	
3. Checks cooling water expansion tank and fills to normal level, recording quantity added;	
4. Checks associated pumps, as fitted, for indications of leaks or abnormalities;	
5. Notifies OICEW of abnormalities and status of engine for starting; and	
6. Ensures that no safety violations are observed.	

Candidate - Name		Candidate - SSN	
Date		Vessel or Course	
Assessor - Name		Assessor - Position	
Assessor - Signature		Assessor - License No.	

NOTICE TO RFPEW CANDIDATES

The RFPEW candidate should request a sea service letter from each ship he or she sails on. The letter(s) will be submitted to the Coast Guard along with the RFPEW assessment control sheets. The following is a sample letter:

SAMPLE LETTER

STCW-95 Rating Forming Part of an Engineering Watch

January 1, 2011

Matson Navigation Company
555 12th Street
Oakland, CA 94607

To Whom It May Concern:

David Kalakaua served as a Wiper aboard the MV Manukai from May 14, 2010 to December 4, 2010.

His seagoing service aboard the vessel included training and experience associated with engine room watch keeping functions and involved the performance of duties carried out under the supervision of qualified engineer officers.

Name of Vessel:	MV Manukai
Dates of Training:	May 14, 2008 through December 4, 2008
Mode of Propulsion:	Motor
Horsepower:	39,200 BHP
Signing Officer:	Joe Smith
License Number:	1234567
Signed:	Joe Smith, Chief Engineer