Record of Assessment

for

OFFICER IN CHARGE OF AN ENGINEERING WATCH

Candidate's Name	*Candidate's Signature*	*Candidate's Mariner Reference No.*

RECORD OF ASSESSMENT
OFFICER IN CHARGE OF AN ENGINEERING WATCH

NOTE TO QUALIFIED ASSESSOR(S): In performing your function as a Qualified Assessor, you may use your initials only to indicate you have personally witnessed the demonstration of skill or ability by the person being assessed. The Assessment Guidelines in Enclosure (2) will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/1 of the STCW Code. The use of these Assessment Guidelines is not mandatory and an alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative Assessment Guidelines must be approved by the National Maritime Center before use.

STCW Competence	Knowledge, Understanding, and Proficiency	Task No.	Task Description	Assessor's Initials	Date
Maintain a safe engineering watch	Thorough knowledge of principles to be observed in keeping an engineering watch	1.1.A	Inspect machinery space; take over watch		
		1.1.B *Note 5*	Keep watch (Motor)		
		1.1.C *Note 1*	Keep watch (Steam)		
		1.1.D *Note 4*	Keep watch (Gas Turbine)		
		1.1.E	Maintain log book		
		1.1.F	Hand over watch		

Notes:

Note 1 A candidate who does not perform this task will receive an endorsement that is not valid for steam vessels.

Note 2 A candidate who does not perform this task will receive an endorsement that is limited to motor and/or gas-turbine propelled vessels without distilling plants.

Note 3 A candidate who does not perform this task will receive an endorsement that is limited to motor and/or gas-turbine propelled vessels without waste-heat or auxiliary boilers.

Note 4 A candidate who does not perform this task will receive an endorsement that is not valid for gas-turbine propelled vessels.

Note 5 A candidate who does not perform this task will receive an endorsement that is not valid for motor vessels.

Note 6 A candidate who does not perform this task will receive an endorsement that is not valid for motor or gas-turbine propelled vessels.

Course The assessment is satisfied by completion of an appropriate approved or accepted course.

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Maintain a safe engineering watch	Safety and emergency procedures; change-over of remote/automatic to local control of all systems	1.2.A	Change-over procedures from remote/automatic to local control systems		
	Safety precautions to be observed during a watch and immediate actions to be taken in the event of fire or accident, with particular reference to oil systems	1.3.A	Observe safety precautions during watch		
		1.3.B	Take immediate action in the event of fire		
		1.3.C	Take immediate action in the event of accident		
		1.3.D	Take immediate action in the event of oil system fire or accident		
	Engine room resource management	1.4.A	Demonstrate knowledge of Engine Room Resource Management (ERM) principles	COURSE	
Use English in written and oral form	Adequate knowledge of the English language to enable the officer to use engineering publications and to perform engineering duties	2.1.A	Complete written examination for a corresponding National Officer Endorsement		
Use internal communication systems	Operation of all internal communication systems on board	3.1.A	Demonstrate the ability to assist in testing internal communications, (e.g., sound powered phone, portable radio), engine order telegraph, alarm systems, and ship's whistle		
Operate main and auxiliary machinery and associated control systems	Basic construction and operation principles of machinery systems	4.1.A	Demonstrate understanding of basic construction and operating principles of engine room and deck equipment		
		4.1.B *Note 1*	Light off a main propulsion boiler		
		4.1.C *Note 1*	Secure a main propulsion boiler		

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STCW Competence	Knowledge, Understanding, and Proficiency	Task No.	Task Description	Assessor's Initials	Date
Operate main and auxiliary machinery and associated control systems	Safety and emergency procedures for operation of propulsion plant machinery, including control systems	4.2.A	Understand safety and emergency procedures for operation of propulsion plant machinery including control systems		
		4.2.B *Note 1*	Identify action to be taken in event of a propulsion boiler carry-over		
		4.3.A *Note 5*	Assist in preparing main propulsion diesel engine for operation		
	Preparation, operation, fault detection and necessary measures to prevent damage for the following machinery items and control systems	4.3.A *Note 1*	Assist in preparing main steam turbine for operation		
		4.3.B *Note 4*	Assist in preparing main gas turbine for operation		
		4.3.C *Note 5*	Monitor main diesel engine operation		
		4.3.D *Note 1*	Monitor main steam turbine operation		
		4.3.E *Note 4*	Monitor main gas turbine operation		
		4.3.F *Note 5*	Assist in securing main propulsion diesel		
		4.3.G *Note 1*	Assist in securing main steam turbine operation		
		4.3.H *Note 4*	Assist in securing main gas turbine operation		
		4.3.I *Notes 4, 5*	Monitor the oil-fired or waste heat auxiliary boiler		
		4.3.J *Note 1*	Test boiler water		
		4.3.K *Note 1*	Control boiler water quality		
		4.3.L *Note 1*	Bottom blow boiler		
		4.3.M	Secure on line low pressure air compressor and start up and place on line standby unit		
		4.3.N *Note 5*	Start fresh water generator *No. 4.3.U may be used as a substitute*		

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Operate main and auxiliary machinery and associated control systems	Preparation, operation, fault detection and necessary measures to prevent damage for the following machinery items and control systems	4.3.O *Note 5*	Shut down fresh water generator *No. 4.3.U may be used as a substitute*		
		4.3.P *Note 2*	Start fresh water distiller		
		4.3.Q *Note 2*	Shut down fresh water distiller		
		4.3.R	Start automated/ non-automated purification plant		
		4.3.S	Shut down fuel oil or lube oil purifier		
		4.3.T	Start ,an A/C or refrigeration system		
		4.3.U	Monitor an A/C or refrigeration system		
		4.3.V	Secure an A/C or refrigeration system		
		4.3.W	Monitor a reverse osmosis plant *Nos. 4.3.N & O may be used as a substitute*		
Operate fuel, lubrication, ballast and other pumping systems and associated control systems	Operational characteristics of pumps and piping systems including control systems	5.1.A	Demonstrate understanding of operating characteristics of pumps and piping systems including control systems		
	Operation of pumping systems	5.2.A	Plan for and conduct an onboard fuel transfer		
		5.2.B	Plan for and conduct a ballasting of a double-bottom or wing tank		
		5.2.C	Plan for and conduct a de-ballasting of a double-bottom or wing tank		
		5.2.D	Plan for and pump out the engine room bilge wells		
		5.2.E	Plan for and pump out a cargo-hold or the shaft alley bilge wells		
	Oily-water separators (or similar equipment) requirements and operation	5.3.A	Monitor the oily-water separator system		

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Operate electrical, electronic, and control systems	Basic configuration and operation principles of electrical, electronic and control equipment	6.1.A	Operating characteristics of the electrical generating and distribution systems		
		6.1.B *Note 5*	Conduct pre-start inspection and start a diesel generator		
		6.1.C *Note 1*	Conduct pre-start inspection and start a steam turbo-generator		
		6.1.D	Connect ship service generator to main switchboard and remove one from the line		
		6.1.E	Demonstrate knowledge of motor controllers, other sequential control system, and high voltage circuits		
	Electronic equipment	6.2.A	Demonstrate knowledge of basic electronic elements and diagrams		
	Control systems	6.3.A	Describe the fundamentals of automation and control system technology		
Maintenance and repair of electrical and electronic equipment	Safety requirements for working on shipboard electrical systems, including the safe isolation of electrical equipment required The interpretation of electrical and simple electronic diagrams	7.1.A	Plan for and use test equipment		
	Maintenance and repair of electrical system equipment, switchboards, electric motors, generator, and DC electrical systems and equipment	7.2.A	Troubleshoot a malfunctioning motor controller		
		7.2.B	Repair a malfunctioning motor controller		
	Detection of electric malfunction, location of faults and measures to prevent damage	7.3.A	Detect location of grounds		
	Construction and operation of electrical testing and measuring equipment	7.4.A	Disassemble and reassemble an electric motor		
	Function and performance tests of the equipment and their configuration:	7.5.A	Respond to and clear at least 2 alarms from the engine control monitoring system		
		7.5.B	Steering gear test		
		7.5.C	Test low lube oil (LO) shutdown protective device		

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Appropriate use of hand tools, machine tools, and measuring instruments for fabrication and repair on board	Materials used in construction and repair ships and equipment. Processes used for fabrication and repair Fabrication and repair of systems and components. Safe working practices in the workshop. Safety measures to ensure a safe working environment Use of hand tools, machine tools and measuring instruments	8.1.A	Hand and machine tool projects		
		8.1.B	Welding projects		
		8.1.C	Oxy-acetylene cutting project		
	Methods for carrying out safe emergency and temporary repairs	8.2.A	Demonstrate ability to understand urgency of problem and carry out safe emergency/temporary repairs		
	Use of various types of sealants and packings	8.2.B	Replace or repack a mechanical seal or gland on a centrifugal pump		
		8.2.C	Repack a valve		
		8.2.D	Replace a flange gasket		
	Application of safe working practices Safety measures to be taken Use of hand tools	8.3.A	Open, clean, inspect and close a lube oil or fuel oil purifier		

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Maintenance and repair of shipboard machinery and equipment	Safety measures for repair and maintenance, including the safe isolation of shipboard machinery and equipment Basic mechanical knowledge and skills Maintenance and repair, such as dismantling, adjustment and reassembling of machinery and equipment Use of specialized tools and measuring instruments Design characteristics and selection of materials in construction of equipment Machinery drawings and handbooks Piping, hydraulic and pneumatic diagrams	9.1.A	Overhaul a centrifugal pump or reciprocating pump		
		9.1.B	Tighten an excessively leaking rotary pump packing stuffing box while in operation		
		9.1.C	Adjust an operating reciprocating pump stroke rate		
Ensure compliance with pollution prevention requirements	Prevention of pollution of the marine environment Knowledge of precautions to prevent pollution of the marine environment Anti-pollution procedures and all associated equipment Importance of proactive measures to protect the marine environment	10.1.A	Put into service and then secure the sewage waste-treatment plant		
		10.1.B	Put into service and then secure the oily-water separator/oil content monitor system		
Maintain seaworthiness of the ship	Working knowledge and application of stability, trim and stress tables, diagrams and stress-calculating equipment	11.1.A	Determine stability data for vessel		
	Understanding of the fundamentals of watertight integrity	11.2.A	Actions to ensure and maintain the watertight integrity of the ship		
	Understanding of fundamental actions to be taken in the event of partial loss of intact buoyancy	11.3.A	Describe actions to be taken for a partial loss of intact buoyancy		
	General knowledge of the principal structural members of a ship and the proper names for the various parts	11.4.A	Describe principal structure members of a ship and the proper names for various parts		
Prevent, control and fight fires on board	Fire prevention and fire-fighting appliances	12.1.A	Successfully complete approved or accepted *Basic* and *Advanced Fire-Fighting* courses	COURSE	

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Operate life-saving appliances	Life-saving Ability to organize abandon ship drills and knowledge of the operation of survival craft and rescue boats, their launching appliances and arrangements, and their equipment, including radio life-saving appliances, satellite EPIRBs, SARTs, immersion suits and thermal protective aids	13.1.A	Successfully complete an approved or accepted *Proficiency in Survival Craft* course	COURSE	
Apply medical first aid on board ship	Medical aid Practical application of medical guides and advice by radio, including ability to take effective action based on such knowledge in the case of accidents or illnesses likely to occur on board ship	14.1.A	Successfully complete an approved or accepted *Medical First Aid Provider* course	COURSE	
Monitor compliance with legislative requirements	Basic working knowledge of the relevant IMO conventions concerning safety of life at sea and protection of the marine environment	15.1.A	Demonstrate the ability to use and understand the SOLAS, MARPOL and STCW Conventions.		
Application of leadership and team-working skills	Working knowledge of shipboard personnel management and training	16.1.A	Describe the basic duties and responsibilities of vessel personnel		
	A knowledge of related international maritime conventions and recommendations, and national legislation	16.2.A	Describe the basic international maritime conventions and national regulations		
	Ability to apply task and workload management, and effective resource management	16.3.A	Plan for and assist in taking on bunkers		
	Knowledge and ability to apply decision-making techniques	16.4.A	Supervise a fire or emergency team		
Contribute to the safety of personnel and ship	Knowledge of personal survival techniques Knowledge of fire prevention and ability to fight and extinguish fires Knowledge of elementary first aid Knowledge of personal safety and social responsibilities	17.1.A	Successfully complete approved *Basic Training* or present evidence of maintaining the standards of competence in *Basic Training*		

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ASSESSOR AND VESSEL INFORMATION

Qualified Assessors witnessing the successful demonstrations noted in this record should provide the information below relative to their service with the candidate, including their Mariner Reference Number.

Vessel Name & Propulsion Mode	Propulsion Power (HP or kW)	Dates of Service		Assessor Name	Assessor Signature	Sample Assessor Initials	Assessor Mariner Reference No.	Assessor Shipboard Position
		From	To					
M/V Sample Entry Motor	8,892 HP	04/01/2012	07/07/2012	Hayden Finch	Hayden Finch	HF	1234567	Chief Engineer

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		From	To					

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