

**SKILLS FRAMEWORK FOR SEA TRANSPORT
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT**

TSC Category	Marine Engineering					
TSC	Engineering Watch					
TSC Description	Maintain and contribute to an engineering watch					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
		STP-MEG-2002-1.1	STP-MEG-3002-1.1			
		Contribute to an engineering watch which involves maintaining the operation and safety of the machinery and engine-room	Take over and handover the engineering watch to other officers to maintain operation and safety of the machinery and engine room			
Knowledge		<ul style="list-style-type: none"> • Methods and principles of handing over and relieving a watch • Duties and procedures to be carried out during an engineering watch • Safe working practices to be used during operations • Entry into enclosed spaces • Environmental protection procedures to be carried out • Alarm and emergency shut-down systems including fire extinguishing gas alarms • Methods to react to alarms and multiple alarms • Escape routes from the machinery space • Location and use of fire-fighting and damage control equipment • Internal communication systems and effective forms of communication. 	<ul style="list-style-type: none"> • Methods and principles of handing over and relieving a watch • Statutory requirements and internationally agreed principles and procedures for keeping an engineering watch: <ul style="list-style-type: none"> ○ at sea ○ during restricted visibility ○ in coastal and congested waters ○ at anchor ○ in port • Start-up and shutdown of main and auxiliary machinery and systems • Monitoring and adjustment of running machinery to maintain the requirements of the ships • Alarm and emergency shut-down systems including fire extinguishing gas alarms and earth faults • Methods to deal with alarms, multiple alarms 			

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		<ul style="list-style-type: none"> • Statutory regulations and guidelines, organisational instructions and guidance, and ship contingency plans 	<p>and methods to identify priority of alarms</p> <ul style="list-style-type: none"> • Recognition of conditions requiring immediate assistance • Maintenance of the machinery space log-book and the significance of the readings • Function and importance of engine-room log book and other records such as oil record book • Initial actions taken by Officer of the Watch in the event of malfunction or failure of equipment, main engine failure or steering gear failure and initial damage assessment and control • Changeover routines for systems from remote/automatic to local control as required in normal operation • Contingency plans and action to take as Officer of the Watch in the event of fire or accident, particularly oil systems • Measures, precautions and procedures to avoid pollution of the marine environment which include: <ul style="list-style-type: none"> ○ restricted areas ○ oily water separator ○ oil record book ○ disposal of pollutants • Use of internal communication systems 			
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			to communicate with engine-room and bridge personnel and effective forms of communication			
Abilities		<ul style="list-style-type: none"> Relieve and maintain the engineering watch in accordance with practices, procedures and established safety rules and regulations Confirm the condition of the machinery on assuming the engineering watch Acknowledge and carry out orders as given by the Officer of the Watch Take measures to ensure protection of the environment Report readings from machinery, equipment and systems accurately Identify and report malfunctions and deviations promptly to maintain safe operations Respond to alarms and emergency situations in accordance with prescribed procedures 	<ul style="list-style-type: none"> Take over, maintain and handover the watch in accordance with internationally accepted principles, procedures and established safety rules and regulations Establish the condition of the machinery on assuming the watch and confirm the ship requirements Communicate duties to be carried out to engine-room personnel clearly and concisely Execute bridge orders promptly Monitor the engineering machinery, equipment and systems to maintain the requirements of the ships in accordance with manufacturer's recommendations and accepted principles and procedures Respond to engine-room malfunctions and emergencies Identify, take action and report malfunctions and deviations promptly to maintain safe operations Ensure that all measures are taken to ensure safety of personnel and the ships and protection 			

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			of the environment from pollution <ul style="list-style-type: none"> • Maintain the machinery space log-book and other records fully and accurately to cover the movements and activities relating to the engineering systems 			
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