

**SKILLS FRAMEWORK FOR MARINE AND OFFSHORE
TECHNICAL SKILLS & COMPETENCIES (TSC) REFERENCE DOCUMENT**

TSC Category	Repair and Maintenance					
TSC	Marine Auxiliary Systems					
TSC Description	Diagnose and rectify systems and machinery components on board ships and rigs					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	MAR-RNM-1001-1.1	MAR-RNM-2001-1.1	MAR-RNM-3001-1.1			
	Carry out routine maintenance works on marine auxiliary equipment based on the maintenance systems implemented by the organisation	Execute servicing and repairs of marine auxiliary machinery, including dismantling and installation of parts, based on pre-set intervals or upon breakdown	Diagnose causes of incidents to provide service and/or repair teams with information on root causes of failure and rectification methods			
Knowledge	<ul style="list-style-type: none"> • Concepts of mechanical engineering • Basic concepts of electrical engineering • Types of auxiliary equipment and systems installed on board • Basic components of auxiliary equipment and systems • Types of tools and techniques for executing maintenance jobs • Isolation procedures for auxiliary equipment and systems 	<ul style="list-style-type: none"> • Concepts of electrical and structural and arrangement drawings • Operating instructions of auxiliary equipment and systems • Working principles of auxiliary equipment and systems • Interaction between components to ascertain isolation requirements • Hazards of non-compliance with isolating procedures • Assembly workflows of auxiliary equipment and systems • In-depth knowledge of specifications of individual components of auxiliary equipment and systems • Types of materials used for various components • Susceptibility to damage and wear of different materials 	<ul style="list-style-type: none"> • Concepts of mechanical engineering • Advanced concepts of electrical engineering • Properties of materials in varying conditions • Factors affecting equipment and system performance • Methods to tackle common faults and breakdowns • Troubleshooting procedures of common faults and breakdowns • Procedures of executing root cause analyses • Methods of developing maintenance plans • Factors affecting task allocation across departments 			

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<p>Abilities</p>	<ul style="list-style-type: none"> • Interpret maintenance plans to execute maintenance jobs • Follow manufacturers' instructions closely • Monitor equipment and system parameters regularly • Monitor maintenance plans to ascertain and plan upcoming jobs • Log equipment and system parameters in specified formats • Log maintenance jobs in specified formats • Use basic hand tools to execute maintenance jobs • Isolate auxiliary equipment and systems in line with manufacturers' recommendations • Gauge impact of isolation or machinery shut-down on ship, rig or conversion operations 	<ul style="list-style-type: none"> • Operate auxiliary equipment and systems as per manufacturers' instructions • Infer dismantling and assembly instructions from manufacturers' manuals • Execute dismantling and assembly of auxiliary equipment and systems as per manufacturers' instructions • Advise appropriate isolation procedures to be applied • Advise appropriate re-commissioning procedures to be applied • Place requisitions for faulty or replaceable components of auxiliary equipment and systems 	<ul style="list-style-type: none"> • Trace electrical, structural and arrangement and equipment drawings to ascertain sources of faults • Incorporate data in maintenance plans to further enhance functionalities and prevent future incidents • Advise rectification methods and techniques • Ensure closure of service and repair jobs • Test auxiliary equipment and system performance post repair • Carry out root cause analyses • Suggest corrective and preventative actions based on findings from root cause analyses • Monitor compliance of maintenance plans throughout the department • Allocate maintenance and servicing tasks according to resource availability 			
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