## TSC Category
Marine Engineering

## TSC
Maintenance and Repair

## TSC Description
Manage and oversee shipboard maintenance and repairs

<table>
<thead>
<tr>
<th>TSC Proficiency Description</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
<th>Level 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribute to shipboard maintenance and repair</td>
<td>STP-MEG-1003-1.1</td>
<td>STP-MEG-2003-1.1</td>
<td>STP-MEG-3003-1.1</td>
<td>STP-MEG-4003-1.1</td>
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<tr>
<td>Maintain and repair electrical and electronic equipment, automation control systems of main propulsion, auxiliary machinery, bridge navigation equipment and communication systems</td>
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<tr>
<td>Maintain and repair shipboard machinery and equipment and use hand tools, machine tools and measuring instruments for fabrication and repair</td>
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<tr>
<td>Manage safe and effective maintenance and repair procedures and identify causes of machinery malfunctions</td>
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### Knowledge

- Painting, lubrication, cleaning materials and equipment
- Routine maintenance and repair procedures
- Surface preparation techniques
- Disposal of waste materials
- Manufacturer's safety guidelines and shipboard instructions
- Application, maintenance and use of hand and power tools, measuring instruments and machine tools
- Safety requirements for working on shipboard electrical systems
- Maintenance and repair of electrical system equipment, switchboards, electric motors, generators and Direct Current (DC) electrical systems and equipment
- Electrical and mechanical knowledge and skills
- Safety isolation procedures for equipment
- Electrical and electronic systems operating in flammable areas
- Principles and maintenance procedures of navigation equipment, internal and external communication systems
- Characteristics and limitations of materials used in construction and repair of ships and equipment
- Characteristics and limitations of processes used for fabrication and repair
- Properties and parameters considered in the fabrication and repair of systems and components
- Safety measures to be taken for repair and maintenance
- Use of hand tools, machine tools and measuring instruments, various types of sealants and packing
- Design characteristics and selection of materials in construction of equipment
- Marine engineering practice
- Planning maintenance, including statutory and class verifications
- Planning repairs
- Types of machinery malfunctions, location of faults and methods to detect them
- Non-destructive examination
- Inspection and adjustment of equipment
- Safe working practices
<table>
<thead>
<tr>
<th>Abilities</th>
<th>Interpretation of machinery drawings and handbooks, hydraulic and pneumatic diagrams</th>
<th>Abilities</th>
<th>Plan and carry out maintenance activities in accordance with technical, legislative, safety and procedural specifications</th>
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</thead>
<tbody>
<tr>
<td>• Carry out maintenance activities in accordance with technical, safety and procedural specifications</td>
<td>• Dismantle, inspect, repair and re-assemble equipment</td>
<td>• Ensure appropriate plans, specifications, materials and equipment are available for maintenance and repair</td>
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<tr>
<td>• Use appropriate equipment and tools when carrying out maintenance activities</td>
<td>• Detect malfunctions, locate faults and take measures to prevent damage</td>
<td>• Detect machinery malfunctions and faults</td>
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<td>• Carry out safe maintenance and repair procedures</td>
<td>• Locate machinery faults and take action to prevent damage</td>
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<td>• Comply with safe working practices in accordance with legislative requirements, codes of practice, permits to work and environmental concerns</td>
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</tbody>
</table>

**SKILLS FRAMEWORK FOR SEA TRANSPORT**

**TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT**

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