

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

<b>TSC Category</b>	Pilotage					
<b>TSC</b>	Tug Operations					
<b>TSC Description</b>	Carry out tug operations and work with tugs during pilotage operations					
<b>TSC Proficiency Description</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>	<b>Level 5</b>	<b>Level 6</b>
		<b>STP-PLT-2003-1.1</b>	<b>STP-PLT-3003-1.1</b>	<b>STP-PLT-4003-1.1</b>		
		Manoeuvre a tug	Oversee tug operations	Work with tugs during pilotage operations		
<b>Knowledge</b>		<ul style="list-style-type: none"> <li>Principles of tug handling</li> <li>Manoeuvring characteristics of tugs</li> <li>Effects of different hull forms on manoeuvring</li> <li>Propulsion control systems</li> <li>Types of responses from different propulsion systems</li> <li>Effects of various propulsion systems on manoeuvring</li> <li>Effects of different environmental factors including winds, sea state, tides, currents and heavy weather</li> <li>Cause and effects of interaction</li> </ul>	<ul style="list-style-type: none"> <li>Towing services</li> <li>Methods to operate combined tows</li> <li>Provision of fire-fighting services</li> <li>Provision of anti-pollution services</li> <li>Provision of pollution control services</li> <li>Principles for normal tug operations</li> <li>Procedures for normal tug operations</li> <li>Construction of a tug and its equipment</li> <li>Operational limits of a tug and equipment</li> <li>Regulations in relation to tug operations</li> </ul>	<ul style="list-style-type: none"> <li>Tugs appropriate for planned manoeuvres</li> <li>Communication channels</li> <li>Emergency communication methods</li> <li>Handling characteristics, capabilities and limitations of various types of tugs</li> <li>Dangers of interaction when a small vessel is working in close proximity to a larger vessel</li> <li>Dangers associated with girting and how to minimise them</li> <li>Safe working load of ship's towing equipment and fittings</li> </ul>		
<b>Abilities</b>		<ul style="list-style-type: none"> <li>Select control position that ensures safe operations relevant to prevailing local conditions</li> <li>Select steering mode that ensures safe navigation in prevailing local conditions</li> <li>Maintain heading and speed required to</li> </ul>	<ul style="list-style-type: none"> <li>Obtain information which is reliable and up-to-date when planning tug operations</li> <li>Obtain resources required to carry out tug operations in accordance with recognised procedures</li> <li>Inform personnel of agreed tug operational</li> </ul>	<ul style="list-style-type: none"> <li>Select most appropriate tugs for planned manoeuvres</li> <li>Place tugs in optimum position for planned manoeuvres and prevailing conditions</li> <li>Communicate warnings and notice of intentions to tug masters</li> </ul>		

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		<p>maintain planned track in prevailing conditions</p> <ul style="list-style-type: none"> <li>• Maintain vessel propulsion, power and steering systems within safe operating limits</li> <li>• Manoeuvre the tug in heavy weather in accordance with recognised guidelines</li> <li>• Maintain communication with towed vessel</li> <li>• Make radio communications in accordance with regulations</li> <li>• Maintain records of communications</li> <li>• Make emergency manoeuvres to minimise risks to tug operations</li> </ul>	<p>plans in accordance with recognised procedures</p> <ul style="list-style-type: none"> <li>• Supervise implementation of tug operational plans to ensure safe operations</li> <li>• Direct connection and disconnection of the tow</li> <li>• Maintain link with towed vessel in accordance with recognised procedures</li> <li>• Ensure safe working practices are maintained throughout the operations</li> <li>• Confirm equipment is shut down in accordance with requirements on completion of the operations</li> <li>• Apply contingency procedures in the event of malfunctions to minimise risks</li> <li>• Implement contingency plan procedures for emergency operations of towing equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Maintain ship's course and speed during tug connection/disconnection</li> <li>• Estimate safe working load of ship's towing equipment and fittings</li> <li>• Instruct ship's crew in the correct and safe handling of tug lines</li> <li>• Monitor connection arrangements to minimise damage to towing gear</li> </ul>		
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