

1. Title	Maintenance of and urgent repairs to vessels at port
2. Code	EMSRRM302A
3. Range	Apply the techniques and knowledge of repairs to ships and marine engines in provision of urgent overall repairs to and maintenance of ships at port so as to ensure the seaworthiness of ships.
4. Level	3
5. Credit	6
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Common wear and tear of deck units, and main and auxiliary engines</p> <ul style="list-style-type: none"> ◆ Know about the types of damages and their locations of the deck units and the main and auxiliary engines, such as oxidation, pitting, spalling, deformation, cracking, gapping, denting and bulging ◆ Know whether the fixed parts and moving sections of deck machinery and ship machine units, such as the jointing positions of the chassis, pedestal, foundation, shaft, main bearing, crankshaft neck and bushing, have developed defects of looseness, breakage , sinking, nipping and leaking ◆ Understand the concerns of general maintenance of and urgent repairs to the main and auxiliary sections, such as cylinders, sleeves, pistons, crosshead shafts and sliding bearing, of ship machine units, including: <ul style="list-style-type: none"> • Cracks, scratches, blowholes and grooves inside the cylinder • Appearance of pistons; and abnormal wear, strain and partial rubbing of crosshead shafts, crankshafts and main shaft neck • Spalling, denudating, elongating and cracking on the bush surface of sliding bearing <p>6.2 Methods of maintaining port vessels and providing urgent repairs at sea</p> <ul style="list-style-type: none"> ◆ Master the methods of protecting, repairing, reconditioning consumed or damaged fixed parts of deck units and the main and auxiliary engines ◆ Straighten or reshape damaged parts, such as frames and enhanced plates ◆ Conduct leakage tests after urgent repairs ◆ Perform the tasks of lubricating, washing, isolating, removing and assembling ship machine units according to approved practice and procedures and repair manual instructions

	<p data-bbox="375 987 719 1144">6.3 Professionalism in maintaining vessels at port and providing urgent repairs at sea</p> <ul style="list-style-type: none"> <li data-bbox="778 253 1449 320">◆ Master the general failures of and repairs to fuel injectors, fuel pumps and boosters <li data-bbox="778 338 1477 875">◆ Adopt appropriate measures for performing the following tasks according to actual situations and conditions and manufacturer’s maintenance instructions: <ul style="list-style-type: none"> <li data-bbox="836 465 1465 533">• Examining and repairing the damage of the inner wall of the cylinder <li data-bbox="836 551 1362 577">• Mending bearing bushing and grinding shaft <li data-bbox="836 595 1369 622">• Non-destructive tests and adjustment of links <li data-bbox="836 640 1318 667">• Repairing and replacing consumed parts <li data-bbox="836 685 1382 752">• Adjusting crankshaft and rectifying crank arm deflection <li data-bbox="836 770 1458 797">• Recasting or replacing the bush of the sliding bearing <li data-bbox="836 815 1477 882">• Fault identification and troubleshooting of general ship machine units <li data-bbox="778 898 1465 965">◆ Master the methods of repairing and replacing general deck machinery, such as anchor winches and other winches <li data-bbox="778 987 1465 1570">◆ Make the following preparations for site maintenance and urgent repairs and replacement of parts: <ul style="list-style-type: none"> <li data-bbox="836 1077 1283 1104">• Organizing and allocating manpower <li data-bbox="836 1122 1437 1234">• Selecting appropriate machines, materials and parts according to manufacturer’s instructions and repair requirements <li data-bbox="836 1252 1433 1319">• Referring to processing diagrams adopt reasonable maintenance layout <li data-bbox="836 1337 1449 1494">• Assessing the urgency of repair items, such as the required time, technical difficulties and material supply, and coordinating the work for urgent repairs and maintenance <li data-bbox="836 1512 1465 1579">• Allocating repair items and arranging implementation of works <li data-bbox="778 1592 1477 1704">◆ Examine the consumption of large parts, such as steel plates, castings and fixed parts and give advice on repairs if necessary <li data-bbox="778 1722 1145 1749">◆ Compile simple repair reports
--	---

7. Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none"><li data-bbox="379 309 1487 383">(i) Capable to select and use appropriate methods to inspect deck units and ship machinery and adopt appropriate measures to repair damaged sections; and<li data-bbox="379 412 1487 486">(ii) Capable to select and use appropriate tools, materials and parts to perform general tasks of maintenance of port vessels and urgent repairs at sea.
8. Remarks	<p>The credit value of this unit of competency is set on the presumption that the person already possesses basic knowledge of ship maintenance and main engine repairs and understands the application of ultrasonic thickness gauge.</p>