

## Minimum standard of competence able seafarer engine (STCW Reg III/5)

**Function: Marine engineering at the support level**

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to a safe engineering watch	<p>Ability to understand orders and to communicate with the officer of the watch in matters relevant to watchkeeping duties</p> <p>Procedures for the relief, maintenance and handover of a watch</p> <p>Information required to maintain a safe watch</p>	Assessment of evidence obtained from in-service experience or practical test	<p>Communications are clear and concise</p> <p>Maintenance, handover and relief of the watch is in conformity with acceptable practices and procedures</p>
Contribute to the monitoring and controlling of an engine-room watch	<p>Basic knowledge of the function and operation of main propulsion and auxiliary machinery</p> <p>Basic understanding of main propulsion and auxiliary machinery control pressures, temperatures and levels</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience;</p> <p>.2 approved training ship experience; or</p> <p>.3 practical test</p>	<p>The frequency and extent of monitoring of main propulsion and auxiliary machinery conforms with accepted principles and procedures</p> <p>Deviations from the norm are identified</p> <p>Unsafe conditions or potential hazards are promptly recognized, reported and rectified before work continues</p>
Contribute to fuelling and oil transfer operations	<p>Knowledge of the function and operation of fuel system and oil transfer operations, including:</p> <p>.1 preparations for fuelling and transfer operations</p> <p>.2 procedures for connecting and disconnecting fuelling and transfer hoses</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 practical training</p> <p>.3 examination</p> <p>.4 approved training ship experience</p>	<p>Transfer operations are carried out in accordance with established safety practices and equipment operating instructions</p> <p>The handling of dangerous, hazardous and harmful liquids complies with established safety practices</p> <p>Communications within the operator's area of responsibility are consistently successful</p>

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Contribute to fuelling and oil transfer operations <i>(continued)</i>	.3 procedures relating to incidents that may arise during fuelling or transferring operation  .4 securing from fuelling and transfer operations  .5 ability to correctly measure and report tank levels	Assessment of evidence obtained from practical demonstration	
Contribute to bilge and ballast operations	Knowledge of the safe function, operation and maintenance of the bilge and ballast systems, including:  .1 reporting incidents associated with transfer operations  .2 ability to correctly measure and report tank levels	Assessment of evidence obtained from one or more of the following:  .1 approved in-service experience  .2 practical training  .3 examination  .4 approved training ship experience  Assessment of evidence obtained from practical demonstration	Operations and maintenance are carried out in accordance with established safety practices and equipment operating instructions and pollution of the marine environment is avoided  Communications within the operator's area of responsibility are consistently successful
Contribute to the operation of equipment and machinery	Safe operation of equipment, including:  .1 valves and pumps  .2 hoists and lifting equipment  .3 hatches, watertight doors, ports and related equipment  Ability to use and understand basic crane, winch and hoist signals	Assessment of evidence obtained from one or more of the following:  .1 approved in-service experience  .2 practical training  .3 examination  .4 approved training ship experience  Assessment of evidence obtained from practical demonstration	Operations are carried out in accordance with established safety practices and equipment operating instructions  Communications within the operator's area of responsibility are consistently successful

**Function: Electrical, electronic and control engineering at the support level**

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Safe use of electrical equipment	<p>Safe use and operation of electrical equipment, including:</p> <ul style="list-style-type: none"> <li>.1 safety precautions before commencing work or repair</li> <li>.2 isolation procedures</li> <li>.3 emergency procedures</li> <li>.4 different voltages on board</li> </ul> <p>Knowledge of the causes of electric shock and precautions to be observed to prevent shock</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 practical training</li> <li>.3 examination</li> <li>.4 approved training ship experience</li> </ul>	<p>Recognizes and reports electrical hazards and unsafe equipment</p> <p>Understands safe voltages for hand-held equipment</p> <p>Understands risks associated with high-voltage equipment and onboard work</p>

**Function: Maintenance and repair at the support level**

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to shipboard maintenance and repair	<p>Ability to use painting, lubrication and cleaning materials and equipment</p> <p>Ability to understand and execute routine maintenance and repair procedures</p> <p>Knowledge of surface preparation techniques</p> <p>Knowledge of safe disposal of waste materials</p> <p>Understanding manufacturer's safety guidelines and shipboard instructions</p>	<p>Assessment of evidence obtained from practical demonstration</p> <p>Assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 practical training</li> <li>.3 examination</li> <li>.4 approved training ship experience</li> </ul>	<p>Maintenance activities are carried out in accordance with technical, safety and procedural specifications</p> <p>Selection and use of equipment and tools is appropriate</p>

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Contribute to shipboard maintenance and repair <i>(continued)</i>	Knowledge of the application, maintenance and use of hand and power tools and measuring instruments and machine tools  Knowledge of metalwork		

**Function: Controlling the operation of the ship and care for persons on board at the support level**

<b>Column 1</b>	<b>Column 2</b>	<b>Column 3</b>	<b>Column 4</b>
<b>Competence</b>	<b>Knowledge, understanding and proficiency</b>	<b>Methods for demonstrating competence</b>	<b>Criteria for evaluating competence</b>
Contribute to the handling of stores	Knowledge of procedures for safe handling, stowage and securing of stores	Assessment of evidence obtained from one or more of the following:  .1 approved in-service experience  .2 practical training  .3 examination  .4 approved training ship experience	Stores operations are carried out in accordance with established safety practices and equipment operating instructions  The handling of dangerous, hazardous and harmful stores complies with established safety practices  Communications within the operator's area of responsibility are consistently successful
Apply precautions and contribute to the prevention of pollution of the marine environment	Knowledge of the precautions to be taken to prevent pollution of the marine environment  Knowledge of use and operation of anti-pollution equipment  Knowledge of approved methods for disposal of marine pollutants	Assessment of evidence obtained from one or more of the following:  .1 approved in-service experience  .2 practical training  .3 examination  .4 approved training ship experience	Procedures designed to safeguard the marine environment are observed at all times

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Apply occupational health and safety procedures	<p>Working knowledge of safe working practices and personal shipboard safety, including:</p> <ul style="list-style-type: none"> <li>.1 electrical safety</li> <li>.2 lockout/tag-out</li> <li>.3 mechanical safety</li> <li>.4 permit to work systems</li> <li>.5 working aloft</li> <li>.6 working in enclosed spaces</li> <li>.7 lifting techniques and methods of preventing back injury</li> <li>.8 chemical and biohazard safety</li> <li>.9 personal safety equipment</li> </ul>	<p>Assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 practical training</li> <li>.3 examination</li> <li>.4 approved training ship experience</li> </ul>	<p>Procedures designed to safeguard personnel and the ship are observed at all times</p> <p>Safe working practices are observed and appropriate safety and protective equipment is correctly used at all times</p>