

Table A-III/5

**Specification of minimum standard of competence for ratings as able seafarer engine  
in a manned engine-room or designated to perform duties  
in a periodically unmanned engine-room**

**Function: Marine engineering 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 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> |

| Column 1  | Column 2   | Column 3   | Column 4  |
|---|--|--|---|
| Competence  | Knowledge, understanding and proficiency   | Methods for demonstrating competence   | Criteria for evaluating competence  |
| Contribute to fuelling and oil transfer operations<br>(continued) | .3 procedures relating to incidents that may arise during fuelling or transferring operation<br><br>.4 securing from fuelling and transfer operations<br><br>.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:<br><br>.1 reporting incidents associated with transfer operations<br><br>.2 ability to correctly measure and report tank levels               | Assessment of evidence obtained from one or more of the following:<br><br>.1 approved in-service experience<br><br>.2 practical training<br><br>.3 examination<br><br>.4 approved training ship experience<br><br>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<br><br>Communications within the operator's area of responsibility are consistently successful |
| Contribute to the operation of equipment and machinery            | Safe operation of equipment, including:<br><br>.1 valves and pumps<br><br>.2 hoists and lifting equipment<br><br>.3 hatches, watertight doors, ports and related equipment<br><br>Ability to use and understand basic crane, winch and hoist signals | Assessment of evidence obtained from one or more of the following:<br><br>.1 approved in-service experience<br><br>.2 practical training<br><br>.3 examination<br><br>.4 approved training ship experience<br><br>Assessment of evidence obtained from practical demonstration | Operations are carried out in accordance with established safety practices and equipment operating instructions<br><br>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  |
|----------------------------------|---|--|---|
| <b>Competence</b>                | <b>Knowledge, understanding and proficiency</b>   | <b>Methods for demonstrating competence</b>  | <b>Criteria for evaluating competence</b>   |
| 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  |
|--|--|--|---|
| <b>Competence</b>                              | <b>Knowledge, understanding and proficiency</b>  | <b>Methods for demonstrating competence</b>  | <b>Criteria for evaluating competence</b>   |
| 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> |

| Column 1   | Column 2  | Column 3                                    | Column 4                                  |
|--|---|---|---|
| <b>Competence</b>  | <b>Knowledge, understanding and proficiency</b>   | <b>Methods for demonstrating competence</b> | <b>Criteria for evaluating competence</b> |
| Contribute to shipboard maintenance and repair<br>( <i>continued</i> ) | Knowledge of the application, maintenance and use of hand and power tools and measuring instruments and machine tools<br><br>Knowledge of metalwork |   |   |

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

| Column 1  | Column 2   | Column 3   | Column 4  |
|---|--|--|---|
| <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:<br><br>.1 approved in-service experience<br><br>.2 practical training<br><br>.3 examination<br><br>.4 approved training ship experience | Stores operations are carried out in accordance with established safety practices and equipment operating instructions<br><br>The handling of dangerous, hazardous and harmful stores complies with established safety practices<br><br>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<br><br>Knowledge of use and operation of anti-pollution equipment<br><br>Knowledge of approved methods for disposal of marine pollutants | Assessment of evidence obtained from one or more of the following:<br><br>.1 approved in-service experience<br><br>.2 practical training<br><br>.3 examination<br><br>.4 approved training ship experience | Procedures designed to safeguard the marine environment are observed at all times   |

| Column 1   | Column 2   | Column 3   | Column 4   |
|--|--|--|--|
| Competence   | Knowledge, understanding and proficiency   | Methods for demonstrating competence   | Criteria for evaluating competence   |
| <p>Apply occupational health and safety procedures</p> | <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> |

