



Australian Government  
Australian Maritime Safety Authority

# Master (Inland Waters)

Skills and Knowledge  
Required for Marine Order 505  
(Certificates of competency  
— national law) 2022





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The tables in this document are taken directly from AMSA 730 Skills and Knowledge Required for NSCV Certificates of Competency Part D Crew Competencies. Only those tables specific to this certificate of competency are included in this document.

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## TABLE 1 – SAFETY AND EMERGENCIES

Outcome	Content	Standards for evaluating competence
<b>Elements of Shipboard Safety</b> Safety and emergencies	<b>Meet operational and emergency safety requirements</b> <ul style="list-style-type: none"> <li>Apply basic survival skills in the event of vessel abandonment</li> <li>Follow procedures to minimise and fight fire on a vessel</li> <li>Meet Workplace Health and Safety (WH&amp;S) requirements</li> </ul>	<ul style="list-style-type: none"> <li>Practice survival techniques</li> <li>Operate lifesaving and survival equipment</li> <li>Undertake and understand risk management processes including Safety Management System (SMS) operational practices</li> <li>Follow safety procedures and take action</li> <li>Understand and follow fire minimisation procedures</li> <li>Respond to and fight fires with portable and other firefighting appliances including correct use of vessel closure and shutdown systems</li> <li>Identify and respond to risks associated with confined spaces</li> </ul>

## TABLE 3 – FOLLOW SOUND ENVIRONMENTAL WORK PRACTICES

Outcome	Content	Standards for evaluating competence
<b>Environment</b> Follow environmental work practices	<b>Environmental Responsibilities</b> <ul style="list-style-type: none"> <li>Follow environmental workplace practices</li> <li>Contribute to improved environmental work practices</li> <li>Maintain environmental records</li> <li>Precautions to prevent pollution</li> <li>Sensitive sea and restricted sea areas</li> <li>MARPOL</li> <li>Oil spill equipment and its limitations</li> </ul>	<ul style="list-style-type: none"> <li>Identify safe and environmentally acceptable practices for:                             <ul style="list-style-type: none"> <li>Refuelling</li> <li>Cleaning up fuel or oil spills</li> <li>Understanding garbage, sewage, noise, anchoring or marine life and other environmental type maritime responsibilities</li> <li>Antipollution procedures and equipment</li> </ul> </li> </ul>

## TABLE 8 – SHIP CONSTRUCTION

Outcome	Content	Standards for evaluating competence
<p><b>Outcome 8.1</b></p> <p>Understand principle structural components of a small vessel and their functions</p>	<p><b>Design and Construction</b></p> <ul style="list-style-type: none"> <li>• Principal parts of a vessel</li> <li>• Basic methods of design</li> <li>• Construction material (steel, aluminium, FRP and wood)</li> <li>• Regulations governing structure</li> </ul>	<ul style="list-style-type: none"> <li>• Identify structural components from ship's drawings and plans, locate on a vessel and ascertain the relevant regulation governing the structure</li> <li>• Understand the function of structural components and compliance with conventional maritime design</li> <li>• Identify samples of construction material</li> </ul>
<p><b>Outcome 8.2</b></p> <p>Maintain the watertight integrity of a vessel</p>	<p><b>Watertight Integrity</b></p> <ul style="list-style-type: none"> <li>• Watertight and weathertight integrity</li> <li>• Design characteristics preserving watertight integrity</li> <li>• Maintenance to sustain watertight integrity</li> <li>• Regulations affecting watertight integrity</li> </ul>	<ul style="list-style-type: none"> <li>• Identify watertight features and structural components from ship's drawings and plans and be able to locate them on a vessel</li> <li>• Understand the function of watertight features and structural components in compliance with conventional maritime design</li> <li>• Identify deteriorated hull and fittings and demonstrate knowledge of the reason for the deterioration, in accordance with maritime engineering procedures</li> <li>• Examine a vessel and detail the maintenance procedures required to test and to ensure watertight integrity in compliance with maritime engineering and inspection procedures</li> <li>• Apply regulations affecting watertight integrity</li> <li>• Identify the dangers of working in confined spaces and list precautions and procedures for doing so in compliance with Australian Standards and WH&amp;S</li> </ul>
<p><b>Outcome 8.3</b></p> <p>Operate the fuel, fresh and ballast water, bilge and fire pumping systems installed in a vessel</p>	<p><b>Pumping Arrangements</b></p> <ul style="list-style-type: none"> <li>• Fuel, fresh and ballast water, bilge and fire pumping arrangements</li> <li>• Sounding and venting facilities</li> <li>• Safety features incorporated in systems</li> <li>• Maintenance requirements to ensure operational readiness</li> <li>• Regulated requirements</li> <li>• Refuelling</li> </ul>	<ul style="list-style-type: none"> <li>• Identify pumping systems on vessel drawings and identify and trace them onboard the vessel</li> <li>• Operate pumping equipment to comply with manufacturer's specification</li> <li>• Identify procedures to avoid contamination of fuel or drinking water</li> <li>• Ensure bilges are clean and dry</li> <li>• Provide fire fighting whilst maintaining stability of the vessel and without environmental contamination</li> <li>• Maintain and test pumping equipment according to manufacturers', vessel, or regulatory specifications</li> <li>• Safety precautions and pollution prevention measures during refuelling are applied according to legislative requirements, supplier's requirements and vessel operating procedures</li> </ul>

Outcome	Content	Standards for evaluating competence
<p><b>Outcome 8.4</b></p> <p>Use and maintain deck machinery installed on a vessel</p>	<p><b>Deck Machinery</b></p> <ul style="list-style-type: none"> <li>• Mechanical deck equipment</li> <li>• Safety features incorporated in systems</li> <li>• Maintenance requirements to ensure operational readiness</li> <li>• Precautions to be observed when using deck machinery</li> <li>• Regulated requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Operating procedures are in accordance with manufacturers' specification and/or vessel operating procedures</li> <li>• Regulatory requirements are applied</li> <li>• Maintenance procedures comply with manufacturer's requirements</li> <li>• Safety procedures and precautions followed are in accordance with WH&amp;S and maritime safety regulations</li> </ul>
<p><b>Outcome 8.5</b></p> <p>Operate steering gear arrangements</p>	<p><b>Steering Systems</b></p> <ul style="list-style-type: none"> <li>• Steering gear arrangements</li> <li>• Safety features incorporated in systems</li> <li>• Maintenance requirements to ensure operational readiness</li> <li>• Regulated requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Operating procedures are in accordance with manufacturers' specification and/or vessel operating procedures</li> <li>• Regulatory requirements are applied</li> <li>• Maintenance procedures comply with manufacturer's requirements</li> <li>• Faults are identified promptly and emergency procedures are implemented according to operating procedures</li> <li>• Safety procedures and precautions followed are in accordance with WH&amp;S and maritime safety regulations</li> </ul>
<p><b>Outcome 8.6</b></p> <p>Manage hull deterioration</p>	<p><b>Vessel Maintenance</b></p> <ul style="list-style-type: none"> <li>• Characteristics and causes of deterioration</li> <li>• Methods to minimise and remedy deterioration</li> <li>• Maintenance management</li> </ul>	<ul style="list-style-type: none"> <li>• Deteriorated hull and fittings are identified in accordance with maritime engineering examination procedures</li> <li>• Regulatory requirements are applied</li> <li>• Maintenance procedures and safety precautions comply with manufacturer's recommendations and warnings</li> <li>• Maintenance schedule is (as minimum) as per manufacturer's requirements</li> </ul>
<p><b>Outcome 8.7</b></p> <p>Demonstrate knowledge of various methods of slipping a vessel</p>	<p><b>Slipping</b></p> <ul style="list-style-type: none"> <li>• Procedures for slipping a vessel.</li> <li>• Undertake an industry visit to witness a vessel being slipped</li> <li>• Safety precautions (ship and personnel) onboard a vessel whilst out of the water</li> <li>• Maintenance to ensure operational readiness</li> <li>• Working in confined spaces</li> <li>• Regulated requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate knowledge of slipping procedures as per vessel and engineering practices</li> <li>• Deteriorated underwater fittings are identified</li> <li>• Workplace Health and Safety procedures are observed</li> <li>• Regulatory requirements are interpreted correctly</li> <li>• Maintenance procedures comply with manufacturer's requirements</li> <li>• Safety precautions and procedures comply with vessel operating procedures</li> <li>• The precautions for putting a vessel back in the water conform to marine safety regulations and engineering principles</li> </ul>

## TABLE 8A – STABILITY

Outcome	Content	Standards for evaluating competence
<p><b>Outcome 8.8a</b></p> <p>Use simplified stability information to maintain the stability of a vessel</p>	<p><b>Stability</b></p> <ul style="list-style-type: none"> <li>• Principles of stability</li> <li>• Terms and definitions</li> <li>• Basic physics of stability</li> <li>• Equilibrium</li> <li>• Impact of design and hull shape on stability</li> </ul> <p><i>Note: Stability knowledge to include basic calculation</i></p> <p><b>Operating Conditions</b></p> <ul style="list-style-type: none"> <li>• Adding and removing weights</li> <li>• Water on deck</li> <li>• Slack tanks</li> <li>• Roll period</li> <li>• Stiff and tender vessel</li> <li>• Additions and alterations to vessels</li> </ul>	<ul style="list-style-type: none"> <li>• Information obtained from a vessel's simplified stability data book is applied to maintain the stability of a vessel</li> <li>• Demonstrate knowledge of stability, including interpretation of diagrams, principles and content of a vessels simplified stability book</li> <li>• Demonstrate how to improve stability for heavy weather considerations</li> </ul>



## TABLE 8D – NAUTICAL KNOWLEDGE AND LEGISLATION

Outcome	Content	Standards for evaluating competence
<p><b>Outcome 8.11d</b></p> <p>Use Commonwealth, local, State &amp; Territory Acts, Legislation, Codes and other publications relevant to the safe operation of a vessel</p>	<p><b>Marine Legislation</b></p> <ul style="list-style-type: none"> <li>• Duties and responsibilities</li> <li>• Certificates onboard a small vessel</li> <li>• Procedures manuals onboard a small vessel</li> <li>• Operational areas and classification of vessels</li> <li>• NSCV Part E and C Section 7</li> <li>• Contents of Marine Notices, Annual Notices to Mariners</li> <li>• Log Book or Vessel Record Book</li> <li>• Workplace Health and Safety Legislation</li> <li>• Marine Pollution</li> <li>• Local, State, Commonwealth &amp; Territory Marine Legislation</li> <li>• Certificates to be carried onboard</li> <li>• Safety management systems or plans</li> <li>• Induction and shipboard training programs</li> </ul>	<ul style="list-style-type: none"> <li>• Apply current information obtained from Commonwealth, local, State and Territory Acts, Legislation, Codes and other publications relating to the safe navigation of a vessel</li> <li>• The duties and responsibilities of the Master are identified</li> <li>• Understand and apply safety management systems, safety management plans, standard and emergency operating procedures and the requirement for inductions for all crew</li> <li>• Determine and understand risk management techniques</li> <li>• Source information on the various State waterways management regulatory requirements, for example: areas of operation, bar crossings, port authority requirements</li> </ul>
<p><b>Outcome 8.12d</b></p> <p>Obtain and interpret meteorology information relevant to a voyage</p>	<p><b>Meteorology</b></p> <ul style="list-style-type: none"> <li>• Elements of meteorology</li> <li>• Terms and definitions</li> <li>• Weather systems</li> <li>• Pressure systems and circulation</li> <li>• Sources of weather forecasts and information</li> <li>• Synoptic charts</li> <li>• Instruments for onboard observations</li> <li>• Tropical revolving storms (TRS)</li> </ul>	<ul style="list-style-type: none"> <li>• Weather information obtained is applicable to the intended voyage</li> <li>• Information obtained from observations, reports and instruments is analysed and included in the voyage planning</li> <li>• Actions taken by a small vessel to avoid severe weather are identified</li> </ul>
<p><b>Outcome 8.13d</b></p> <p>Maintain a safe navigation watch</p>	<p><b>Watchkeeping</b></p> <ul style="list-style-type: none"> <li>• Content, application and intent of the International Regulations for the Prevention of Collision at Sea (as amended)</li> <li>• Watchkeeping standards and principles at sea, anchor and in port</li> <li>• Bridge communication</li> <li>• IALA buoyage system “A”</li> </ul>	<ul style="list-style-type: none"> <li>• International Regulations for the Prevention of Collision at Sea (as amended) are interpreted and applied</li> <li>• Watchkeeping practices comply with accepted standards and procedures</li> <li>• Defined wheelhouse communication and reporting procedures are adopted</li> <li>• The vessel log/record book is maintained in accordance with the National Law</li> <li>• Situational awareness is maintained</li> </ul>

Outcome	Content	Standards for evaluating competence
<p><b>Outcome 8.14d</b></p> <p>Respond to emergency situations</p>	<p><b>Emergency Procedures</b></p> <ul style="list-style-type: none"> <li>• Collision, grounding, damage to the vessel</li> <li>• Protection and safety of all persons onboard</li> <li>• Abandoning the vessel</li> <li>• Rescuing persons in distress</li> <li>• Assisting a vessel or aircraft in distress</li> <li>• Assisting a vessel or aircraft in Search and Rescue (SAR)</li> <li>• Musters and Drills</li> <li>• Tropical revolving storms</li> </ul>	<ul style="list-style-type: none"> <li>• The emergency situations are identified expeditiously and responded to appropriately</li> <li>• Procedures are appropriate and comply with NSCV Part E and current practices</li> </ul>
<p><b>Outcome 8.15d</b></p> <ul style="list-style-type: none"> <li>• Demonstrate knowledge of the various features of a vessel, which relate to its handling characteristics</li> <li>• Manoeuvre a vessel</li> </ul>	<p><b>Vessel Handling and Manoeuvring</b></p> <ul style="list-style-type: none"> <li>• Effects of rudders and propellers</li> <li>• Berthing and unberthing in various conditions</li> <li>• Manoeuvres to approach an anchorage</li> <li>• Effects of narrow channels and shallow water on manoeuvring</li> <li>• Effects of interaction</li> <li>• Management of a vessel in heavy weather Crossing a bar</li> <li>• Manoeuvres to launch boats or liferafts</li> <li>• Manoeuvres and procedures for person overboard</li> <li>• Towing and being towed</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate knowledge of handling characteristics of a vessel and the significance of the characteristic relative to manoeuvring related to engineering and design principles</li> <li>• Vessel is manoeuvred within its performance parameters</li> <li>• Launch and retrieve liferaft/boat according to vessel procedures</li> <li>• Vessel is manoeuvred to pick up simulated person overboard using internationally recognised practices</li> <li>• Turn a vessel across the tide across the wind</li> <li>• Williamson turn, turning short around</li> <li>• Berthing and leaving a berth in various wind and tide conditions</li> <li>• Berthing and unberthing; berthing in a pen</li> <li>• Coming to and leaving a mooring</li> </ul>

Outcome	Content	Standards for evaluating competence
<p><b>Outcome 8.16d</b></p> <p>Demonstrate seamanship skills and techniques</p>	<p><b>Practical Seamanship</b></p> <ul style="list-style-type: none"> <li>• Knots, hitches and bends using fibre and synthetic rope</li> <li>• Eye splice and short splice in fibre and synthetic rope</li> <li>• Precautions when using rope, wire and chains</li> <li>• Breaking strain and safe working loads of ropes</li> <li>• Maintenance and care of rope, wire and chain</li> <li>• Rigging gear, cranes and maximum loads</li> <li>• Winches and windlasses</li> <li>• Safe handling of moorings and hawsers</li> <li>• Stowing and securing anchors for sea</li> <li>• Securing for rough weather and maintenance of watertight integrity</li> <li>• Lashing and securing equipment</li> <li>• Towing and being towed</li> </ul>	<ul style="list-style-type: none"> <li>• Workplace health and safety procedures are observed</li> <li>• Identify rope types and common uses</li> <li>• Tie common knots such as reef knot, bowline, sheet bend, clove hitch, round turn and 2 half hitches and understand their use</li> <li>• Eye splice a fibre/synthetic rope end join two ends complying with the rope manufacturer's recommendations</li> <li>• Whip an end</li> <li>• Techniques and skills used to perform tasks are in accordance with manufacturers' specifications and industry standards</li> <li>• Maintenance procedures comply with authorised requirements</li> </ul>

