BoatSafe RMDL Competency Standard

September 2016

Queensland Government

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Effective date

This policy will take effect from the 1 September 2016.

Introduction

The *BoatSafe RMDL Competency Standard* outlines the skills and knowledge a candidate requires to obtain a Recreational Marine Driver Licence (RMDL) to operate certain powered recreational vessels in Queensland.

The standard quantifies what evidence should be seen by the BoatSafe Training Provider (BTP) when assessing competency of the candidate, what the candidate must be able to do and how well it must be done.

A BoatSafe Training Organisation (BTO) must comply with the *BoatSafe RMDL Competency* Standard when developing and delivering a BoatSafe course. During the competency assessment, or a Recognised Prior Learning (RPL) assessment, all of these competencies must be assessed.

1. Unit 1 – Trip planning

1.1 Learning outcomes

At the completion of this unit, the learner will be able to:

1. Understand the important aspects of safety equipment and maintenance.
2. Understand the law as it relates to carrying safety equipment and the legal obligations of the ship's master.
3. Ensure the vessel is seaworthy and suitably equipped for a trip.

1.2 Assessment criteria

1. Understand the important aspects of safety equipment and maintenance	
1.1	Identify the main parts of a recreational vessel and its equipment.
1.2	Explain the importance of maintenance to vessel safety.
1.3	List the safety equipment required.
1.4	Determine the serviceability of safety equipment.

2. Understand the law as it relates to carrying safety equipment and the legal obligations of the ship's master	
2.1	Identify suitable lifejackets and their location on board the vessel.
2.2	Understand the obligations of operating a recreational vessel in Queensland.
2.3	Determine if the vessel is fitted in accordance with the provisions of the *International Regulations for Preventing Collisions at Sea* (COLREGS).

3. Ensure the vessel is seaworthy and suitably equipped for its intended operation	
3.1	Inspect vessel for seaworthiness.
3.2	List the tools, spares and equipment required for the vessel for its intended operation.
3.3	Calculate the fuel required for a particular trip.
3.4	Inspect the vessel's battery for useability.

1.3 Teaching and learning strategy

This unit is concerned with the safety aspects of the vessel that should be considered in the planning stage of a trip. The three elements are essentially about the equipment you need to take, the legislation that covers the equipment and the master's obligations and the seaworthiness of the vessel.

The consequences of not being prepared should be stressed and reference should be made to real life tragedies and incidents to reinforce the theme.

Any equipment demonstrated in the theory component training environment should be reinforced by viewing the same equipment and its placement on the vessel. This will contextualise the theory and increase the apparent relevance of the material. A discussion on-board relating to this unit is required.

1.4 Resource requirements

The following minimum teaching resources must be available:

1. Lifejackets for smooth, partially smooth and open waters
2. EPIRB (Emergency Position Indicating Radio Beacon) (dummy unit is acceptable)
3. Anchor, chain and rope
4. Flares: red, orange and rocket (dummy units are acceptable)
5. V-sheet
6. 27MHz and VHF radios (functioning or non-functioning)
7. Bilge pump
8. Illustrations of other forms of safety equipment
9. General illustrations of faults and instances of unseaworthiness.

1.5 Content outline

Content	Time (see note *)
1. Obligations of a ship's master • general safety obligation • obligations of ship's master • application of standard road rules: DUI and drugs.	60 mins*
2. The main parts of a small recreational vessel and why they are there: • hull (shape and depth) • motor • controls • steering • fuel tank • anchor well. • battery • safety equipment stowage • bow • stern • deck	
3. Parts of the vessel that require maintenance and what maintenance should be performed and how often: • motor pivot • motor hydraulics • control cables • electrical cables • ignition switch • motor control unit and cables • shackles • ropes.	
4. Safety equipment – recommended items: • EPIRB • Lifejackets (types and where they are appropriate) • V-sheet • flares • bilge pump/bailing buckets (and lanyard) • anchor • paddles • lights • fire extinguisher	
5. Seaworthiness of the vessel: • what is seaworthiness • Australian Builders Plate (ABP) • hull integrity • engine reliability • freeboard • positive flotation • common tools and spares carried on board • serviceability of motor, battery, safety equipment.	
6. Fuel consumption: • relationship between engine speed and fuel used • approximate fuel use rate figures for a range of engines • simple calculations involving fuel, distance and time.	

*** Note:** Minimum training time

1.6 Assessment strategy:

This unit is assessed by written assessment using the Common Assessment Tool (CAT) (i.e. BoatSafe Assessment sheets provided by the Department of Transport and Main Roads (the department).

2. Unit 2 – Navigation

2.1 Learning outcomes

At the completion of this unit, the learner will be able to:

1. Apply International Association of Lighthouse Authorities (IALA) buoyage system 'A' and use aids to navigation not covered by IALA.
2. Use a GPS navigation system.
3. Identify and apply collision and water traffic regulations relevant to the activity area.
4. Pollution.

2.2 Assessment criteria

1. Understand the IALA buoyage system 'A' and use aids to navigation not covered by IALA	
1.1	Knowledge of the following buoys, marks and beacons and how this is applied to safe navigation: • lateral and cardinal marks • isolated danger marks • special marks • safe water marks • middle channel marks • leads • speed signs • cable crossings.
1.2	Recognition of lights used for navigation at night and how these are identified on a chart.
1.3	Problems associated with lights at night in a metropolitan area.
2. Use a GPS navigation system	
2.1	Briefly describe how the Global Positioning System (GPS) system works.
2.2	Operate a chart plotter and determine position.
2.3	Describe the limitations of a GPS installation.
3. Apply the COLREGS to ensure safe navigation	
3.1	Recall the main COLREGS.
3.2	Apply the COLREGS when navigating a recreational ship.
3.3	Recall the rules for speed, drugs, alcohol.

4. Pollution	
4.1	Define pollutants.
4.2	State the rules relating to marine pollution.
4.3	Understand the effects of pollution on the marine environment.

2.3 Teaching and learning strategy

This unit relates to the safe operation of a recreational ship. To operate a ship safely the 'rules of the road' need to be known and understood. While these are largely based on common sense, the buoyage system is counter-intuitive requiring a person to apparently drive on the wrong side of the road. This needs to be stressed during the learning process.

The content is directly relevant to vessel operation.

Models and photographs of buoys and beacons are invaluable aids and can effectively be used to present the reality of navigational marks to the learner.

A video produced by Maritime Safety Queensland (MSQ) or a suitable equivalent visual presentation, will be shown to all candidates and will cover the specific topics of night navigation and the use and limitations of a GPS navigation system.

2.4 Resource requirements

The following resources must be available as a minimum:

1. Photos of displays from chart plotters
2. MSQ charts that show navigational buoys and beacons
3. Slides or pictures of actual buoys and beacons
4. Models of ships to demonstrate COLREG requirements.

2.5 Content outline

Content	Time (see note *)
1. COLREGS: • responsibility • power • sail • underway • proper look out • safe speed • risk of collision • action to avoid collision • narrow channels. • sailing vessels • overtaking • head-on situation • crossing situation • restricted visibility • lights and shapes – power, sail, fishing and so on • sound signals • distress signals	
2. Obligations • rules for drugs and alcohol • rules for speed limits. • pollution	
3. The IALA buoyage system: • lateral marks • cardinal marks • special marks • safe water marks • night aspects of lights and how these relate to the chart (MSQ video).	105 mins*
4. Other navigational directions: • middle channel marks • lead lights • speed signs. • cable crossing • anchorage	
5. Use and limitations of a GPS navigation system (MSQ video): • How the GPS system works – satellites • Modes of operation of a chart plotter and suitability of use – compare with an in-car installation: – highway mode – course deviation index (road width and error) – chart mode. • Importance of up to date electronic charts • Use and abuse of zoom • Datum checking – fixed points at boat ramps.	

*** Note:** Minimum training time

2.6 Assessment strategy

This unit is assessed by written assessment using the CAT. It must also be assessed on water by reference to appropriate buoys and beacons or in an appropriate simulation.

2.7 Practical assessment

The theory from this unit can be verified on water where marks and buoys are present; however this will not always be the case. To overcome this, a number of scenarios need to be posed to the candidates in the training room based on actual charts where such navigational aids will be seen. This can be further enhanced by using an oversized chart and models of boats and marks to demonstrate the rules.

During the practical training component, floating debris may be designated by the instructor as an appropriate mark or buoy and require the candidate to respond accordingly.

3. Unit 3 – Weather and tides

3.1 Learning outcomes

At the completion of this unit, the learner will be able to:

1. Access and interpret weather information
2. Interpret tide tables.

3.2 Assessment criteria

1. Access and interpret weather information	
1.1	Locate up to date weather charts and forecasts from a variety of sources.
1.2	Interpret the information on a chart and compare it to the published forecast.
1.3	Predict the likely local conditions based on the forecast and local geography.

2. Interpret tide tables	
2.1	Distinguish between a tide and a tidal stream.
2.2	Interpret a set of tide tables for a standard port to determine the high and low tides.
2.3	Estimate the tide height and strength of flow at different times between high and low tide using the law of 12^{th}s.
2.4	Explain how tidal flow affects handling of small boats and anchorage requirements.
2.5	Determine the time of high and low tide at a secondary port.

3.3 Teaching and learning strategy

This unit relates to weather and tides. When operating a small vessel it is necessary to be able to access appropriate weather information. An understanding of how weather is generated and how it affects the marine environment are important aspects of boating safety. The candidate should be able to locate a current synoptic chart and interpret it to a level where the main features on the chart can be assigned to particular weather events - such as fronts that are associated with storms and ridges associated with strong winds.

Likewise, the nature of tides and how they affect a small vessel, particularly at a boat ramp are important for safety and the comfort of all on board a vessel. The candidate should practice looking up tidal information at primary ports, and making appropriate adjustments for secondary ports.

3.4 Resource requirements

The following resources must be available as a minimum:

1. A range of synoptic charts showing the various weather events as demonstration of the reality of these.
2. Copies of the current synoptic chart for interpretation and validation against observed weather on the day, if practicable.
3. Tide tables for the current year.
4. A model to demonstrate the effect of tidal flow on anchoring characteristics.

3.5 Course outline

Content		Time (see note *)
1.	Weather: • Sources of weather information: television, papers, internet, BOM. • The main features of a weather chart: – isobars – highs and lows – troughs and ridges. • How to interpret a chart: – strength of wind and isobar spacing – circulation about highs and lows to give wind direction – weather associated with troughs and cold fronts – weather associated with highs and lows – winds and coastal ridges of eastern Australia. • Effect of a forecasting on trip planning.	50 mins*
2.	Tides: • Basic causes of tides • Chart datum and high and low tides • Spring and neap tides • Rule of 12ths • Looking up tides in a tides book • Working out tides at secondary locations.	

*** Note:** Minimum training time

3.6 Assessment strategy

This unit is assessed by written assessment using the CAT.

3.7 Practical assessment:

The candidate will use the daily synoptic chart, to validate the current weather observations and they must be familiar with the current tides book or similar publication to be able to look up tides for their location and a nearby secondary port.

4. Unit 4 – Emergencies

4.1 Learning outcomes

At the completion of this unit, the learner will be able to:

1. Define and report a marine incident
2. Respond to a fire on board
3. Understand the importance of an EPIRB
4. Use appropriate emergency radio calls.

4.2 Assessment criteria

1. Define and report a marine incident	
1.1	Describe a **marine incident** as defined in the *Transport Operations (Marine Safety) Act 1994* (TOMSA) (s123) and what it means.
1.2	List the obligations on ships' masters when a collision occurs (s124).
1.3	Recall that a report must be made, to whom and by when (s125).
1.4	Explain the seriousness of marine incidents and the importance of reporting them.

2. Respond to a fire on board	
2.1	• List the causes of fire on a small vessel • Things to reduce risk of fire.
2.2	Recall what to do when you abandon vessel.

3. Understand the importance of an EPIRB	
3.1	Describe the features of a functioning EPIRB.
3.2	Activate a dummy EPIRB.

4. Use appropriate emergency radio calls	
4.1	Recall the radio frequency to use.
4.2	Simulate a 'securité' call.
4.3	Simulate a 'pan pan' call.
4.4	Simulate a 'mayday' call.

4.3 Teaching and learning strategy

The quantity and nature of electrical and mechanical equipment on a recreational vessel will vary considerably so this unit is based on the equipment being available on the 'average' recreational vessel.

4.4 Resource requirements

The following resources must be available as a minimum:

1. Portable fire extinguisher
2. Dummy EPIRB.

4.5 Content outline

	Content	Time (see note *)
1.	Define and report a marine incident: • Section 123 of the Act defines what a marine incident is - the list gives a good indication as to what else could be considered a marine incident. • Section 124 describes the duties of the master when an incident happens that involves two or more ships - the reasons for these are fairly obvious when referred to large ships. • Section 125 explains what must be done to report an incident, who the report is to be given to and when it must be made after the incident.	50 mins*
2.	Respond to a fire on board: • Probable causes of fire: oily rags, short circuits, petrol/engine • When to use a fire extinguisher and when to abandon ship.	
3.	Understand the importance of an EPIRB: • When an EPIRB must be carried (legislative requirements) • Registration with AMSA (Australian Maritime Safety Authority) • How to activate an EPIRB • When you should activate an EPIRB (circumstances).	
4.	Use appropriate emergency radio calls: • What the emergency radio calls are: – ‘securité’, ‘pan pan’ and ‘mayday’ • The circumstances under which they should be made.	

***Note:** Minimum training time

4.6 Assessment strategy

This unit is assessed by written assessment using the CAT.

5. Unit 5 – Manoeuvring

5.1 Learning outcomes

At the completion of this unit, the learner will be able to:

1. Leave and return to launching facility or berth.
2. Bring a recreational vessel alongside a floating object.
3. Moor and anchor a recreational vessel.
4. Manoeuvre a recreational vessel underway.

5.2 Assessment criteria

1. Leave and return to launching facility or berth	
1.1	Organise the passengers and cargo to maintain stability.
1.2	Control the vessel while departing the launching facility.
1.3	Control the vessel while approaching the launching facility.

2. Bring a recreational vessel alongside a floating object	
2.1	Control the vessel to approach a floating object from the lee side taking the effects of wind, currents and tide into consideration.

3. Moor and anchor a recreational vessel	
3.1	Control the vessel on approach to a fixed platform, jetty or pontoon, if practicable, to prevent physical damage to either the vessel or pontoon or distress to passengers.
3.2	Secure the vessel with a bowline.
3.3	Control the vessel to approach a floating mooring to avoid collision.
3.4	Anchor the vessel to prevent drift.

4. Manoeuvre a recreational vessel underway	
4.1	Engage forward and reverse gears.
4.2	Control power to smoothly accelerate onto the plane.
4.3	Control power smoothly to bring the vessel off the plane.
4.4	Perform an emergency stop.
4.5	Control the trim and tilt of the engine.
4.6	Control the vessel in a figure of eight turn at speed and at low speed.
4.7	Perform a ‘man overboard’ drill and manoeuvre the vessel to collect the person.

5.3 Teaching and learning strategy

This is a practical unit that concerns the physical control of the vessel. It requires the candidate to practice those things most necessary when in command of a small vessel. The instructor is to demonstrate all tasks first with an explanation as to why a task is done in a particular way. An example: 'forward gear is engaged quickly to prevent damage to the gearbox and costly repairs'.

Candidates learn in a variety of ways which include doing it themselves and observing others doing it. Both these forms of learning are important in boat handling.

After being shown how to do the task, the candidate is to practice the task themselves a number of times, before then watching other candidates do the same thing.

Tasks should be sequenced so that easier ones precede more difficult ones. This will build the confidence of the candidate and give them a better foundation for the more difficult skills.

5.4 Resource requirements

The following resources must be available as a minimum:

1. A commercially certified vessel, appropriate for training for a recreational licence (for example a vessel with a Certificate of Operation for a Class 2E).
2. Access to a pontoon, jetty or similar platform to moor the vessel, if practicable.
3. A spare fender or float to be used as a man overboard.
4. A float to use as a fixed mooring or a standard fixed mooring.

5.5 Practical assessment

Refer to Maritime Safety Queensland Common Practical assessment tool provided at the time the BTO's authority was issued.

There are time frames for the practical assessment which must be adhered to. These times are minimums and it is expected that practical delivery and assessment may take longer to determine a candidate's competency. These time frames are contained in the *BoatSafe Management Standard*.

6. Alternative training delivery

The department will consider alternative training tools or methods such as on-line delivery, for theory components of the *BoatSafe RMDL Competency Standard* and *BoatSafe PWCL Competency Standard*.

Such alternative tools or methods must be approved by the department prior to its use. In approving an on-line or alternative training delivery package, the department would expect the package to deliver an equal or greater quality training experience than that offered through a face to face training environment.

For further information see section 11 of the *BoatSafe Manual*.

If for example on-line delivery is used, minimum training times will be replaced by the appropriate time it takes to complete the on-line training tool.