Queensland Government

Transport and Main Roads

Recreational Boating Safety Improvements

Report

July 2011

Connecting Queensland

www.tmr.qld.gov.au

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1 Introduction

1.1 Purpose of this report

With the number of people using Queensland's waterways increasing each year it is imperative that marine safety programs keep pace with emerging trends and issues in boating to maintain a continued high level of marine safety into the future. Maritime Safety Queensland is committed to ensuring recreational marine safety programs are relevant and address emerging safety issues.

In September 2007 Maritime Safety Queensland released a discussion paper presenting broad policy options about several recreational boat safety reforms. Extensive consultation regarding these reforms was conducted with recreational boat users, peak bodies from industry and compliance partners.

In 2009 a record number of marine incident fatalities occurred, ending a downward trend over the previous three years. By years end, 20 people had died as the result of a marine incident, 12 more than in the previous year of record low fatalities.

Then in 2010 there were another 14 fatal marine incidents resulting in 14 deaths. The same number of incidents as recorded in 2009, but there were 30 percent fewer deaths. There were no multiple fatality incidents, unlike in 2009 when five marine incidents each resulted in multiple deaths.

On 28 May 2010 the Deputy State Coroner delivered recommendations in relation to the death of a passenger in a recreational boat that collided at night with the rock seawall at the mouth of the Brisbane River. The Coroner found that the current recreational boat licensing regime was insufficient to equip a licence holder to safely navigate at night.

The Coroner has also recently commenced an inquest into the death of four passengers of two recreational boats that collided at sunset at the mouth of the Brisbane River in 2007.

Since the completion of the consultation for the 2007 discussion paper, Maritime Safety Queensland has undertaken extensive planning to develop detailed proposals that respond to the consultation feedback, the Coroner's recent recommendations and other identified changes in recreational boating trends.

This report outlines the improvements to recreational boating safety Maritime Safety Queensland will implement in response to these issues.

2 Background

Maritime Safety Queensland fosters safe boating as a way of life for operators and a core boating value within the commercial, fishing and recreational sectors of the boating industry and community.

Recreational boating safety reforms in recent years include:

- The BoatSafe recreational boat licence training and assessment scheme (2004).
- Personal watercraft driver licensing and operating restrictions (2005).
- The 'under 12, under 4.8 metres, underway' mandatory personal flotation device (PFD) wearing initiative (2005).
- The Australian Builders Plate safe loading and buoyancy limits for new recreational boats (2006).
- Upgrading the type of emergency position indicating radio beacon (EPIRB) that must be carried when boating offshore (2008).
- The integration of recreational marine licences onto the new Queensland driver licence (2010).

Maritime Safety Queensland drives and maintains Queensland's marine safety performance in collaboration with a range of stakeholders and partners including all waterway users, boat manufacturers, maritime training sector, enforcement agencies, insurance industry, media and others. The role of enforcement agencies and public education are fundamental and complementary to Maritime Safety Queensland's role as regulator of marine safety.

2.1 Recreational boating profile

By the end of June 2010, Queensland had around 233 600 registered recreational boats (including 15 100 personal watercraft), the largest number of any Australian state. Around 676 000 people held some form of Queensland recreational marine driver licence. This equates to 1 in 17 Queenslanders aged 16 years or older owning a registered recreational boat and around one in every five people in the same age group holding some form of recreational marine licence.

Over the past five years the registered recreational fleet has grown 20 percent or around 39 600 additional registered boats using our waterways. Over half of this growth has been in the Brisbane and Gold Coast regions. By the end of June 2010, these two regions contained 55 percent of all registered recreational boats in Queensland.

While the overall fleet has grown 20 percent the rate of growth is not consistent across boat length categories. Growth in the numbers of boats 12 metres or over in length is around 1.5 times that of boats less than 12 metres.

2.2 Reasons for recreational boating safety improvements

Reducing the potential for marine incidents will provide a cost benefit for the community. By applying road based costs for fatal injury, the average cost of a boating fatality is estimated to be $2.4 million (refer Bureau of Infrastructure, Transport and Regional Economics *Cost of Road Crashes in Australia Report 118,* Canberra 2006).

Based on this figure, the 49 recreational marine incident fatalities that occurred in Queensland from 1 July 2005 to 30 June 2010 (not including personal watercraft) have cost the community an estimated $128 million. For the same period there were 80 serious injuries and a total of 1760 marine incidents for recreational boats.

Although search and rescue operations and responding to people injured in marine incidents was not calculated in this road cost report, it would be considered a component of the overall cost to the community comparable to cost involved with road emergency services.

2.2.1 Marine incident report (2009)

Historically, there has been a variation in the annual count of fatal marine incidents in Queensland. Between 2001 and 2009 fatal incidents ranged from eight to 14 per year. However, the year 2009 was marred by a record number of marine incident related fatalities, ending a downward trend over the previous three years. By years end, 20 people died as the result of a marine incident, 12 more than in the previous year of record low fatalities.

Marine incident data found half the boats involved in marine incidents were being used recreationally. When comparing marine incidents in 2009 with the previous four year average, the largest increase in boat involvement in incidents was among recreational motorboats (45), whereas on a percentage basis the most significant gain was among recreational personal watercraft (43 percent). There were 14 fatal marine incidents resulting in 20 deaths. Of the 14 fatal incidents, seven incidents (11 deaths) involved a recreational boat.

2.2.2 Coroner's report (2010)

On 28 May 2010 the State Coroner delivered recommendations in relation to the death of a passenger in a recreational boat that collided at night with the rock seawall at the mouth of the Brisbane River. The coroner's recommendations encompassed both the introduction of enhanced night and electronic navigational skills and knowledge revalidation for boating rules and navigation. Factors contributing to the collision included navigational error and inappropriate use of electronic navigational aids.

2.3 Summary of improvements

The reforms will improve boating safety by:

- lessening the likelihood of a marine incident by introducing licensing and operational improvements
- increasing the likelihood of surviving a marine incident by introducing safety equipment improvements
- addressing several minor miscellaneous improvements.

Improvements	Section
Licensing improvements include: • Requiring a higher standard of boat operator skills for new licence holders of large recreational boats. • Introducing enhanced night and electronic navigation training in the existing BoatSafe course.	3 4
Operational improvements include: • Additional operating requirements for personal watercraft to lower the likelihood of collisions.	5
Safety equipment improvements include: • Extending the list of coastal bars over which personal flotation devices must be worn on small open boats. • Additional safety equipment requirements for personal watercraft operating offshore similar to that required for other recreational boats.	6 7

Miscellaneous improvements include: • Requiring an owner of a recreational boat to ensure a master is appropriately licensed. • Introducing the recognition of particular types of international boating licences. • Requiring the registration sticker for an Emergency Position Indicating Radio Beacon (EPIRB) to be affixed to the EPIRB. • Clarifying interstate registered recreational boats on an interstate voyage do not require Queensland registration when in Queensland waters. • Introducing new stowage requirements for safety equipment to enable immediate access in the event of an emergency. • Updating referenced standards to include the new Australian Standard 4758 for personal flotation devices as an appropriate standard for use.	8

The improvements are primarily focused on recreational boat drivers; however some of the improvements will impact commercial and fishing ship operators, specifically:

- Extending the list of coastal bars over which personal flotation devices must be worn on small open boats.
- Additional safety equipment requirements for personal watercraft operating offshore similar to that required for other recreational boats.
- Additional operating requirements for personal watercraft to minimise the likelihood of collisions
- Requiring the registration sticker for an EPIRB to be affixed to the EPIRB.

3 Advanced recreational marine driver licence

Under current legislation a person who holds a recreational marine driver licence (RMDL) or an equivalent licence from another state can operate a recreational boat of any length in Queensland. To obtain an RMDL a person must be 16 years of age and have successfully completed a BoatSafe training program with a Maritime Safety Queensland accredited training provider.

The BoatSafe program teaches the candidate the basic elements of safe navigation and boat handling, as well as the identification of beacons and buoys. The type of boat that can be used to train candidates is a motorised boat up to eight metres in length but is most commonly a smaller boat approximately five metres in length.

An amendment to the legislation will require new operators of recreational boats 12 metres or over in length, to hold an advanced recreational marine driver licence endorsement (ARMDLE). The advanced licence endorsement is intended to ensure operators of larger recreational boats have the advanced skills necessary to safely operate their boat.

3.1 Rationale for an advanced recreational marine driver licence

The percentage of recreational boats 12 metres or over in length is growing at more than 1.5 times that of recreational boats less than 12 metres. Over the past five years the number of registered recreational boats less than 12 metres has increased 20 percent, from 190 620 boats to 229 216. In contrast the number of recreational boats 12 metres or over in length has increased 31 percent for the same period and numbered 4337 as at June 2010.

Traditionally people have progressed in boat ownership and experience from smaller boats to larger boats, acquiring additional experience and knowledge as their boat size increased. Evidence suggests first time owners are purchasing larger boats.

Queensland boat registration data reveal that, of the people who currently own a registered recreational boat 12 metres or over in length, around 52 percent have not previously owned a registered boat in Queensland. While some owners may have previously owned a boat registered in another state it is likely that majority of large boat owners in Queensland have not previously owned a boat less than 12 metres in length.

From 1 July 2005 to 30 June 2010, 2014 recreational boats (not including personal watercraft, paddle or row boats) were involved in marine incidents. Of these boats 447 (23 percent) were recreational boats 12 metres or over in length. Given recreational boats 12 metres and over in length represent less than 2 percent of the Queensland registered recreational fleet they are significantly over-represented in marine incidents. This disproportionate level of involvement in reported marine incidents of larger boats could be attributed to a number of factors including the lack of skills and experience of operators as well as insurance claims or greater hours of exposure on the water.

The most common incident types for boats 12 metres and more between 1 July 2005 and 30 June 2010 were collision between boats (33 percent), unintentional grounding (16 percent), boat adrift (7 percent) and fire (6 percent).

The operating and handling characteristics of larger boats differ to those of smaller boats due mainly to extra weight and power, the surface area above and below the water, the pivot point for steerage and the propulsion systems. The extra weight and power of larger boats means that they have the potential to cause serious damage to other boats and infrastructure if involved in a marine incident.

Large boats also generally have a greater passenger carrying capacity and can be operated vast distances offshore where the marine environment can change quickly. The potential for loss of life in these situations increases when the master of the boat lacks experience or training in the key areas of seamanship.

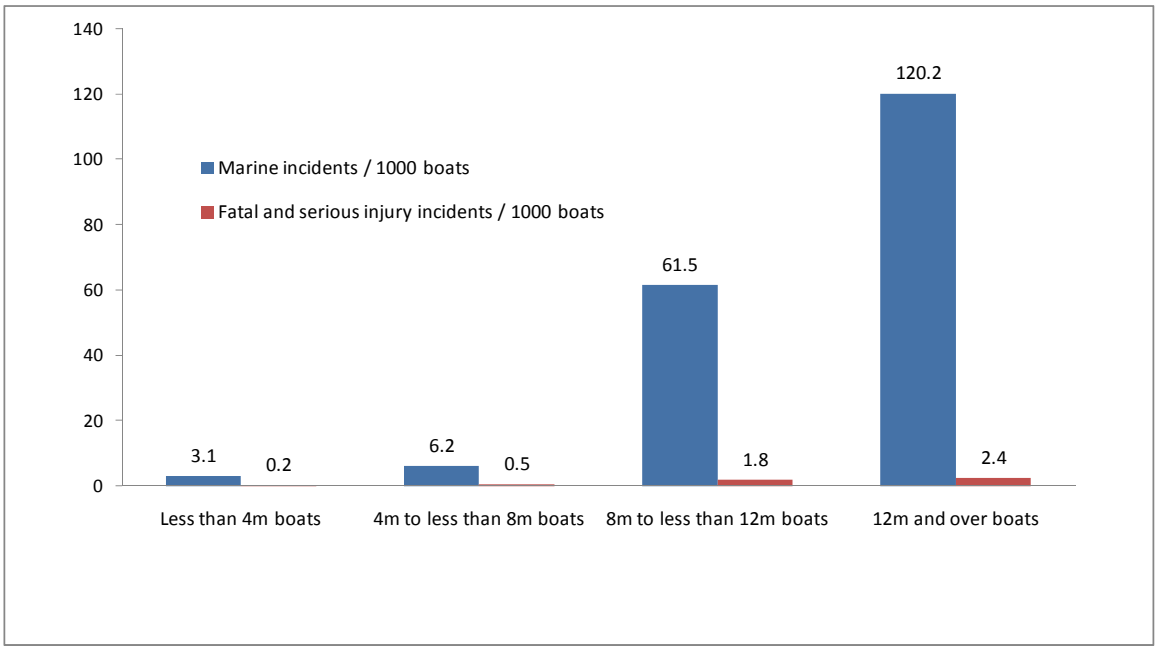
In Queensland's increasingly congested waterways the wash from larger boats threatens the safety of people on board smaller boats and causes damage to marine infrastructure and shorelines. A significant number of complaints received by Maritime Safety Queensland, Queensland Boating and Fisheries Patrol and the Water Police each year are related to the dangerous effects of wash created by larger recreational boats.

Maritime Safety Queensland believes the standard BoatSafe training program is insufficient to prepare a person to operate a larger boat, as higher level boating skills appropriate for operating larger boats are not explicitly covered by the existing BoatSafe training course. Introducing a new licence endorsement customised specifically for larger boats, will ensure operators have the ability to effectively master their boat. Improved boat handling and management skills will reduce the risk of harm to their boat and passengers as well as marine infrastructure, the marine environment and other waterway users.

3.1.1 Voluntary training

Advanced boat handling training is not new. Maritime Safety Queensland has examined the alternative for a voluntary scheme. A range of courses have been available in Queensland and across Australia for many years. Yachting qualifications such as Coastal Skipper and Yachtmaster have been available in Australia for more than 25 years. There is also a range of organisations that provide powerboat handling courses. While the courses are readily available participation is very low.

Figure 1: Marine incident rate by length of boat (financial year 2005/06 – 2009/10)



3.2 Consultation feedback

There was strong agreement from respondents to the 2007 discussion paper that larger recreational boats require advanced knowledge and operational skills (89 percent) and that Maritime Safety Queensland should introduce an advanced licence (83 percent).

Of the respondents who thought an advanced licence was required, 41 percent thought an advanced licence should be required for boats over 10 metres, 17 percent for boats over 12 metres and 18 percent for boats over 15 metres. The remaining 24 percent did not stipulate a length to which an advanced licence should apply.

There was 79 percent support from respondents that certain prerequisites be met before being eligible for an advanced licence. However, there was mixed support as to what the pre-requisites should be. Forty-five percent of respondents thought a person should complete a record of experience book, while 56 percent of respondents thought a person should first hold an RMDL for a set period.

3.3 New advanced licence endorsement

An ARMDLE will be required to operate recreational boats 12 metres or over in length and powered by an engine of more than 4.5 kilowatts. The advanced licence endorsement will be a new licence category within the existing BoatSafe framework.

The requirements for future licence holders to obtain an advanced licence endorsement will be:

- Holding a RMDL or equivalent from another Australian state or territory for at least one year.
- Minimum age of 18 years.
- The completion under the supervision of an advanced recreational marine driver licence holder or equivalent of a range of boating tasks required in an advanced BoatSafe Workbook.
- The completion of an advanced BoatSafe training course focusing on specific knowledge required to operate larger recreational boats.

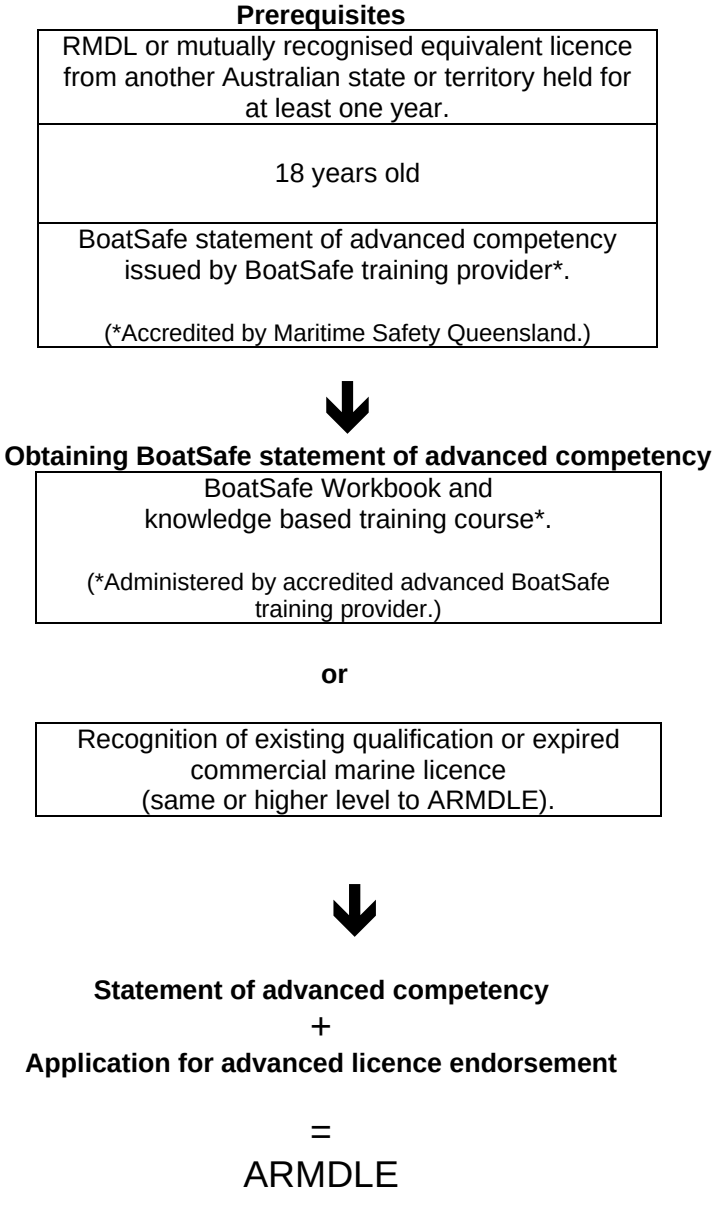
Assessment of the workbook and delivery of the training course will be done by Maritime Safety Queensland accredited advanced BoatSafe training providers. The applicant will be issued a BoatSafe statement of advanced competency by the training provider on completion of the workbook and training course.

Candidates for the advanced licence endorsement will then submit their statement of advanced competency to a Department of Transport and Main Roads customer service centre together with an application form and evidence of identity. The applicant will then be issued with an advanced recreational marine driver licence.

Existing RMDL holders will continue to be permitted to operate large recreational boats. Current commercial master licence holders will also continue to be permitted to operate any recreational boat. An advanced licence endorsement will be issued in recognition of an expired commercial marine licence or other marine qualification equivalent or superior to the advanced licence endorsement.

3.4 How to attain the ARMDLE

Figure 2: Attaining the ARMDLE



The statement of advanced competency and application form for the advance licence, including evidence of identity, is submitted to a customer service centre. Once processed, the applicant will be issued with an ARMDLE.

3.5 Training and assessment

3.5.1 Accredited BoatSafe training providers

Maritime Safety Queensland has a BoatSafe training scheme established for the RMDL and personal watercraft licence (PWCL). The ARMDLE will be a new category of licence within the existing BoatSafe framework.

To be eligible to become an accredited BoatSafe training provider to issue the BoatSafe statement of advanced competency, a person must hold a Restricted Master Class 5, Skipper 3 or higher licence

and have a level of experience in operating boats 12 metres or over in length acceptable to Maritime Safety Queensland. Training providers will also require a Certificate IV in Training and Assessment.

Notably, about 52 percent of existing BoatSafe training providers have a Restricted Master Class 5 or higher class licence. BoatSafe training providers who hold appropriate Yachtmaster qualifications and who satisfy the other required prerequisites would also be eligible for a Restricted Master Class 5 licence without the need for further sea time.

The introduction of an advanced licence endorsement will provide qualified BoatSafe training providers with a further business opportunity as an estimated 900 new large boat licence holders will require training each year.

3.5.2 BoatSafe Workbook

The benefit of boating experience versus demonstrated competency has been considered. While the amount of time spent on a boat can indicate a person's boating ability, it does not guarantee they have acquired the skills or participated in the tasks necessary to safely operate a larger boat. It is more important for a person to demonstrate their competency at accomplishing a task than just spending time on a boat.

Through completion of an advanced BoatSafe Workbook candidates will demonstrate their competency in a range of boating tasks. The advanced BoatSafe Workbook will prescribe a number of boating tasks that candidates must successfully perform while on a recreational boat 12 metres or over in length while under the supervision of an ARMDLE or commercial licence holder. The tasks would include:

boat handling and manoeuvring	anchoring and mooring
emergency procedures	watch keeping
marine radio operation	electronic navigation and position fixing
management of crew/passengers	electronic passage planning
boat handling in heavy weather	distress signals
watertight integrity	fire prevention and extinguishing systems
weather conditions	global positioning system (GPS) navigation

For each task, the supervising ARMDLE or commercial licence holder will be required to log:

- whether the task was completed successfully
- the date the task was completed
- their name and marine licence number
- registration number of the boat used.

The supervising licence holder will sign a declaration in the workbook stating the information provided is true and correct.

The workbook will also contain information to support the advanced BoatSafe training course.

Completed workbooks must be retained by the BoatSafe training provider for a period of three years.

3.5.3 Advanced BoatSafe training course

Candidates for the advanced licence endorsement will also complete an advanced BoatSafe training course focusing on specific knowledge required to operate larger recreational boats.

Maritime Safety Queensland accredited advanced BoatSafe training providers will deliver the training course. It is expected to be a one day course.

The training course will not feature a practical assessment. Boats typically used for RMDL training may be up to eight metres in length but are typically under six metres. It would not be financially viable

for BoatSafe training providers to acquire commercially registered boats 12 metres or over in length for the purposes of conducting practical advanced training and assessment.

3.5.4 Recognition of an existing qualification or licence

A person who holds an expired commercial marine licence (holders of a current commercial licence do not require a recreational licence to operate a recreational boat) or specific high grade yachting qualification may apply to Maritime Safety Queensland to have their licence or qualification recognised as being equivalent for the purpose of obtaining an ARMDLE. As mentioned previously a range of advanced boat handling courses have been available in Queensland and across Australia for many years.

These candidates will be issued a statement of advanced competency by Maritime Safety Queensland which they must provide to a customer service centre when making their ARMDLE application. The minimum age restriction of 18 years requirements will continue to apply.

3.6 Operators from interstate and overseas

No other Australian state or territory has an advanced recreational marine driver licence. While some states have introduced specific licences for younger operators none have a recreational licence that differentiates according to size of the boat.

As Queensland will be the first state to introduce an advanced licence endorsement consideration must be given to how the requirement for an advanced licence endorsement would apply to boat drivers from interstate. If an interstate or international licence holder becomes a permanent resident of Queensland for more than three months, they will be required to hold an advanced licence endorsement to operate a large recreational boat. This will be consistent with the requirement in every state for interstate vehicle licence holders to obtain a local vehicle licence after three months of taking up residency within a state.

Users of bare boats 12 metres or over in length registered as Class 1F ships and operating in accordance with the *Transport Operations (Marine Safety – Bareboat Ships) Standard 2007* will not need ARMDLE.

3.7 Training and licence fees

Based on existing fees for similar training and licence services, Maritime Safety Queensland expects the cost of the new advanced licence endorsement to be $68.50 (the same cost as the RMDL and PWCL).

An indicative cost for a BoatSafe training provider to review a completed workbook and conduct the advanced licence endorsement course is expected to cost between $195 and $225.

Cost summary

	Training fee	**Licence fee**
Workbook and training course	$195-$225	$68.50

Costs are indicative only and subject to change.

While the additional cost to larger boat owners is acknowledged it is considered that this initial small outlay will be offset by improved safety on Queensland's waterways. Safer operation of larger recreational boats will reduce the risk of incidents occurring and provide a safer boating environment.

4 Night and electronic navigation training

On 28 May 2010 the State Coroner delivered recommendations in relation to the death of a passenger in a recreational boat that collided at night with the rock seawall at the mouth of the Brisbane River. The coroner's recommendations encompassed both the introduction of enhanced night and electronic navigational skills and knowledge revalidation for boating rules and navigation. Factors contributing to the collision included navigational error and inappropriate use of electronic navigational aids.

4.1 Rationale for night and electronic navigation training

In summary, the Coroner recommended that:

> *"The recreational boat licence should be reviewed to add an additional certification for operation of a boat between sunset and sunrise. The certification must require sufficient theoretical and practical testing of night navigation knowledge and on water practical skills… consideration also be given to restricting existing recreational boat licence holders to daylight operation until their licence is upgraded with the night navigation certification."*

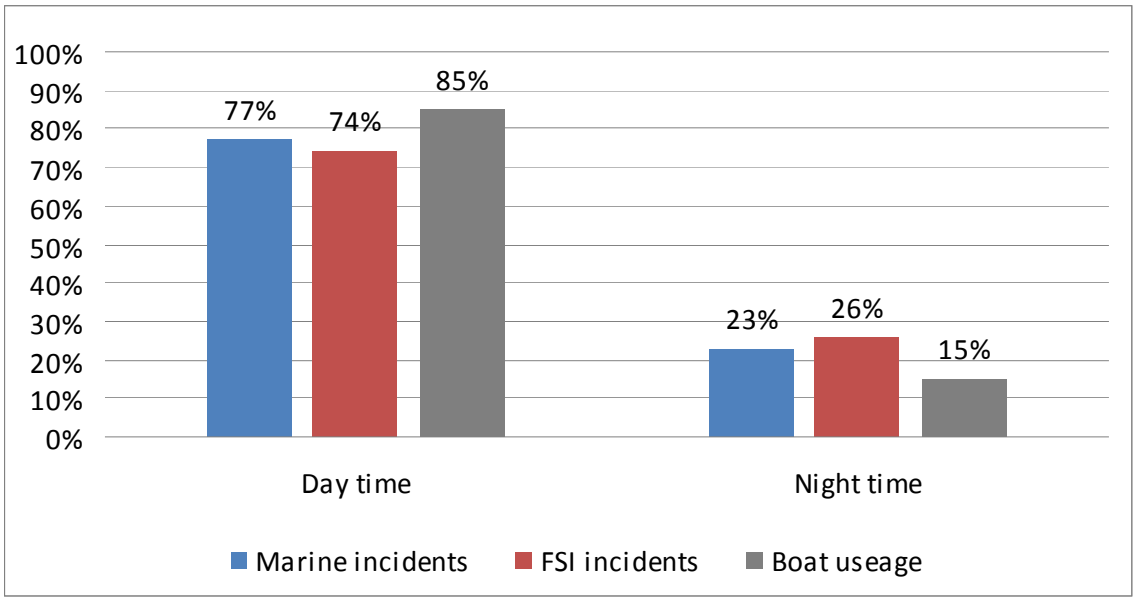
4.1.1 Night marine incidents

There were 1805 reported marine incidents and 104 reported fatal and serious injury marine incidents involving recreational boats (but not incidents involving only recreational personal watercraft) reported between 1 July 2005 and 30 June 2010.

Approximately 23 percent (423) of these reported marine incidents occurred at night and 26 percent (25) of fatal and serious injury incidents occurred at night. According to the National Marine Safety Committee's National Boating Usage Study only about 15 percent of respondents used their boat at night. This over representation of night time incidents indicates night time boating warrants greater attention in training.

Analysis of reported marine incidents that occurred at night indicates that navigational error was a contributing factor in only 15 percent of incidents. Other contributing factors were inattention (11 percent), insecure mooring (7 percent) and operational error (5 percent). This highlights that navigational error is not the only significant contributing factor to night time marine incidents.

Figure 3: Marine incident percentage V boat usage



4.1.2 Electronic navigation

The use of electronic navigation devices or GPS systems onboard vessels can be beneficial. However, the accuracy of the GPS system is essential for safe navigation. The concerning aspect of a GPS system is that not every unit is completely accurate, either due to being set in the wrong datum or having outdated software. These inaccuracies can mean that map coordinates may be out by up to several hundred metres.

Maritime Safety Queensland has initiated a GPS project to assist boat owners to check whether their GPS coordinates displayed on screen are accurate. The project rolled out verified checking points at various boat ramps and on-water locations around Queensland. Each checking point displays a sign with the correct coordinates for its exact position. This provides a point of reference for boat drivers to check their own GPS systems against, showing them how accurate (or not) their system is. Armed with this knowledge, boat drivers will then be aware that either their datum needs changing or their software needs upgrading.

As part of the project, an information flyer was distributed to alert boat owners of the location of the verified checking points and suggestions for correcting their GPS units. Additional information was also provided on correctly using GPS for navigation and the dangers of relying solely on the electronic systems. Boat drivers are encouraged to always ‘keep a lookout’ and to also consult navigation charts and publications such as Beacon to Beacon in addition to using their GPS.

4.2 New night and electronic navigation training requirement

Maritime Safety Queensland is upgrading the content of the prerequisite BoatSafe course that must be completed by RMDL candidates to enhance the night and electronic navigation component.

A BoatSafe course is typically comprised of classroom theory followed by an on water practical training and assessment undertaken in daylight hours. Candidates are assessed for competence in applying the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) buoyage system, use of aids to navigation and the *International Regulations for the Prevention of Collisions at Sea*.

While the current course requires these competencies to be demonstrated in daylight hours it is not practical to require the more than 31 000 new RMDL candidates each year, to undertake on water competency assessment at night.

If only those licence holders operating at night were required to hold a night endorsement at least 101 400 people (about 15 percent of 676 000, existing licence holders) would need to obtain that endorsement. Face-to-face training through an expanded BoatSafe scheme is unlikely to be able to accommodate the volume of existing licence holders needing to upgrade their licence. Introducing endorsements or new licence classes in addition to the basic RMDL will also create mutual recognition issues preventing interstate visitors from operating recreational boats at night in Queensland.

Instead Maritime Safety Queensland will upgrade the content of the current BoatSafe training course to include a night and electronic navigation training video that must be viewed by recreational marine driver licence candidates.

5 Operational requirements for personal watercraft

Personal watercraft (PWC), often referred to as jet skis, are a popular and widespread past-time in Queensland. Therefore it is important to ensure PWC users are safe. This is particularly important given the community interest PWC incidents attract and the integral role recreational boating plays in Queensland's tourism industry and domestic lifestyle.

5.1 Rational for additional operational requirements for personal watercraft

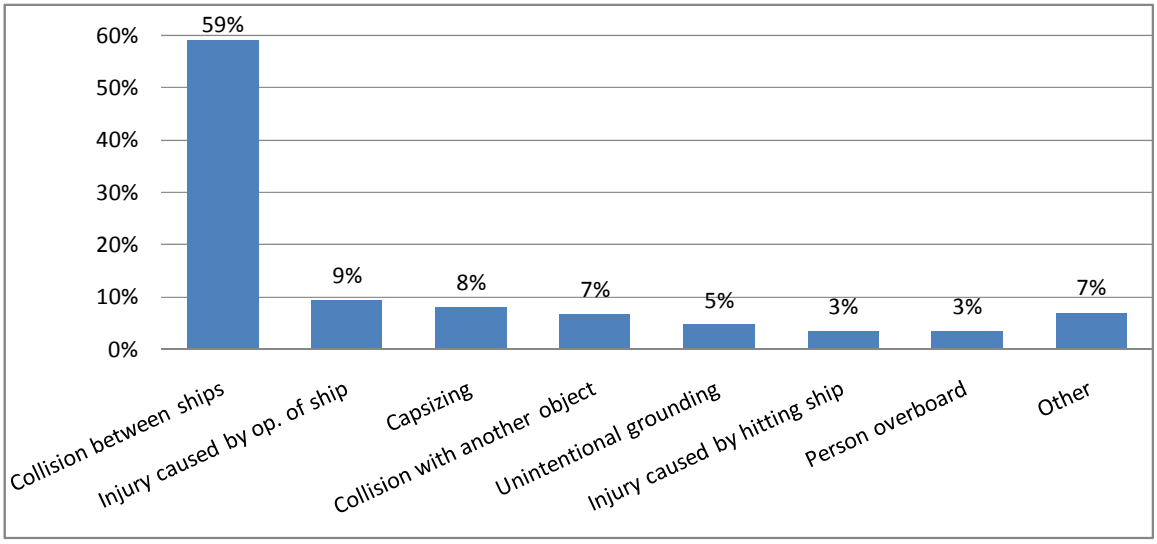
5.1.1 Safe distance between PWC

Incident statistics and observations of driver behaviour indicate that many PWC drivers travel too close to other boats, particularly other PWCs, to allow for the unexpected.

Queensland hospitalisation data shows that in the period July 2003 to June 2009, for all PWCs (including recreational, hire and commercial) there were 167 hospital admissions as the result of a PWC incident. Marine incidents reported to Maritime Safety Queensland indicates that there were 154 marine incidents involving recreational PWCs for the period July 2003 to June 2009, leading to 27 serious injuries and three fatalities.

By far the most prevalent type of PWC incident is a collision between boats (59 percent) and more often than not this involves a collision between two PWCs.

Figure 5: PWC incidents



5.1.2 Kill switch safety lanyard

The nature of jet skiing includes an expectation that the driver and passenger/s may fall overboard, and that the boat may capsize and right itself on a regular basis. For these reasons, most models have a safety lanyard kill switch which can be attached to the rider. The PWC will stop if the driver pulls away from the handle bars and falls off. When an unlicensed driver is controlling the PWC, it is important that an unlicensed driver is not left alone on the PWC should the supervising licence holder fall off. Consequently, the safety lanyard should be connected to the supervising licence holder even when the unlicensed person is driving.

5.1.3 Unlicensed learner drivers carrying passengers

PWCs are powerful, high-speed, highly manoeuvrable machines that require more advanced skills and experience than a dinghy or small recreational boat. Because of their acceleration, speed and difficulty to manoeuvre at low speed driving a PWC requires quicker responses, more refined judgement and skills, and a degree of maturity in reasoning skills to avoid hazardous situations.

Many people learn to operate a PWC through supervised tuition from family and friends. It is common practice for a licensed PWC master to sit behind a learner driver while the learner driver controls the craft. This is a lawful and acceptable practice that Maritime Safety Queensland does not want to preclude, provided the licensed supervisor wears the safety lanyard.

Inexperienced drivers are at particular risk on PWCs due to their unfamiliarity with the lack of 'off throttle' steering, a handling characteristic that is counterintuitive and which can be problematic in situations of potential collision. Some manufacturers have introduced steering fins and rudders to address this operational issue. However, it is not the industry standard and only partially effective.

Due to the advanced skills required to safely control a PWC, and a learner driver's inexperience at handling unexpected circumstances, Maritime Safety Queensland believes no passengers should be exposed to risk while a person is learning to drive. Consequently, unlicensed PWC learner drivers should be prohibited from carrying passengers other than the supervising PWC licence holder.

5.2 Consultation feedback

Responses from the 2007 discussion paper reveal that 80 percent of respondents agreed that PWC drivers should remain an appropriate distance from other moving boats when 'at speed' with 30 percent of respondents agreeing that a PWC should remain at least 30 metres from another moving boat if the PWC is travelling at more than 10 knots.

Furthermore, 81 percent of respondents believe that the kill switch safety lanyard should be attached to the supervising licence holder when an unlicensed person is driving.

Also, 80 percent of respondents agreed that unlicensed learner drivers should be prohibited from carrying passengers other than the supervising PWC licence holder.

5.3 New PWC operational requirements

To improve marine safety and reduce injuries from collisions involving PWC the following changes will be made:

- PWC driver to maintain a distance of 30 metres from other moving boats when travelling at more than 10 knots unless the PWC is involved in an official aquatic event.
- PWC licence holder to wear the kill switch safety lanyard when the PWC is being driven by an unlicensed driver.
- Prohibiting a unlicensed learner PWC driver from carrying passengers other than the supervising PWC licence holder.

Riders of PWCs operating in accordance with the *Transport Operations (Marine Safety – Hire and Drive Ships) Standard 2007* will not need to comply with last two points.

6 Coastal bars where personal flotation devices must be worn

Personal flotation devices (PFDs), often referred to as a life jacket, improve the survival rate of incident victims, particularly after an incident such as capsizing, sinking, swamping or falling overboard.

Under the current legislation, a PFD must be worn by:

- persons under 12 years of age when underway in an open boat less than 4.8 metres in length if the boat is required to be equipped with PFDs
- all persons travelling on an open boat less than 4.8 metres in length when the boat is crossing a designated coastal bar if the boat is required to be equipped with PFDs
- all persons travelling on a personal watercraft.

6.1 Marine incident statistics

Boats up to 4.8 metres in length are more unstable because of the need to balance the boat at all times by carefully distributing the weight to avoid capsizing or swamping. These boats are involved in the greatest number of non-fatal marine incidents where the occupants unexpectedly enter the water.

A study commissioned by the National Marine Safety Committee, National Assessment of Boating Fatalities in Australia 1999–2004 identified that person overboard and boat capsize were the most common events resulting in a boating fatalities. Open motorboat dinghies were involved in 36 percent of all fatal incidents.

The national study revealed the main event for incidents involving dinghies was person overboard. Loss of stability was a more frequent event for dinghies than for other boats. In 90 percent of dinghy related fatalities the deceased were not wearing a PFD. Overall, PFDs were found to be worn by only 12 percent of all people killed in boating incidents. The study identified that people who survived a boating incident were twice as likely to have been wearing a PFD.

More recently, the MSQ 2009 Marine Incident Report revealed that of the 14 fatal incidents that occurred in the year, 31 people ended up in the water and 19 died. Only 11 of the 31 people were wearing a PFD at the time of the incident, with 8 of the 11 PFD users surviving (73 percent), whereas 4 of 20 non-users survived (20 percent). The likelihood of survival would have been increased for eight persons had they been wearing a PFD.

6.2 Consultation feedback

A key finding from the 2007 discussion paper survey was that a mandatory requirement for all persons to wear a PFD on small boats at all times is not practical and was rejected by 85 percent of survey respondents. However, 52 percent of survey respondents supported adults having to wear a PFD in certain high risk situations. Only moderate support of 46 percent was received for extending the length of boat on which PFDs must be worn in high risk situations. The most prominent high risk situation identified was boating alone in restricted visibility, including at night which received 28 percent support.

Feedback from the 2007 discussion paper was also looked at in determining whether the Mooloolah River mouth and Gold Coast Seaway should be included as designated coastal bars where a PFD was required to be worn. There was 63 percent support for Mooloolah River mouth and 68 percent support for Gold Coast Seaway. These bars were originally not included due to the greater depth of their water. However, a range of factors including increased traffic volumes, variable conditions and strong survey support, indicated they should be included.

6.3 New PFD wearing requirements

The Mooloolah River mouth, Gold Coast Seaway and Round Hill Creek will be included as bars where a PFD must be worn. A range of factors, including increased traffic volumes, at times variable

conditions and strong support shown in the 2007 discussion paper feedback, indicate Mooloolah River mouth and Gold Coast Seaway should be included.

The third, Round Hill Creek bar, is constantly changing in depth and direction and is also open to the sea when the wind direction changes to the north. There have also been a number of reported marine incidents involving bar crossings that occurred there. The increased boating population is evident in this area and is used all year by recreational fishers as well as commercial operators.

7 Safety equipment for personal watercraft

With the advances in technology and design, personal watercraft (PWC) are able to travel great distances off-shore where conditions can change rapidly. In addition to this, the activities (such as wave jumping) undertaken by these watercraft often result in the rider falling off. Enforcement agencies have expressed concern about the potential for PWC drivers to be stranded on the water without adequate safety and rescue equipment, particularly in offshore waters. Maritime Safety Queensland believes a PWC should carry the same safety equipment as other registered recreational boats operating in the same environment.

7.1 Rationale for extra safety equipment on personal watercraft

Recreational boats, operating in partially smooth and beyond waters are required to carry a v-sheet, two hand-held red flares and two hand-held orange smoke signals. These boats are also recommended to carry an anchor, drinking water, oars/paddles, chart, compass and bailing equipment to satisfy their general safety obligation under the *Transport Operations (Marine Safety) Act 1994*.

Recreational PWCs are currently exempt from carrying most of the safety equipment required to be carried on other registered recreational boats. Exceptions include if operating at night, a PWC must carry a signalling device such as a torch and be fitted with navigation lights, and if operating more than two nautical miles from land when outside smooth or partially smooth waters, a PWC must also be equipped with an EPIRB. PWC drivers and passengers must also wear a PFD at all times.

The current requirements that exempt PWCs from carrying most safety equipment were established in the mid-1990s when most PWCs were single-seat, stand-up models with little storage space and limited operating range (known as pole skis). Since then, advances in the design of PWCs have resulted in larger stowage areas for most models and increasing use of PWCs in offshore waters.

The safety equipment required will be the same required for a recreational boat, except for the need to carry bailing equipment and oars or paddles. As PWCs have a fully enclosed hull that will not take on water if the craft is capsized, bailing equipment is considered to be not necessary. A PWC may also be equipped with a handheld electronic navigation device instead of a chart or compass.

As the current exemption is due to the previous lack of storage space, a design factor that has now been overcome, these boats should be required to carry the same equipment that other boats operating in the same vicinity carry.

The cost of the additional safety equipment for PWC to operate offshore is approximately $250.

7.2 Exemption for pole skis

Pole skis, the original smaller stand up PWCs, have limited or no storage space. Consequently, these PWCs will be exempt from the requirement to carry the additional safety equipment. However, to minimise the safety risks to their drivers, the use of pole skis that do not carry the extra safety equipment will be limited to smooth waters (as defined in schedule 13 of the *Transport Operations (Marine Safety) Regulation 2004*) or half a nautical mile from land. Half a nautical mile equates to nearly one kilometre, which is where most smaller PWCs used for recreation purposes operate, and therefore will not be disadvantaged.

7.3 Consultation feedback

When raised in the 2007 discussion paper, 67 percent of those who responded supported the requirement for PWCs to carry the same safety equipment as other registered recreational boats.

7.4 New PWC safety equipment requirements

To ensure PWC riders have adequate safety equipment should an incident occur when operating in beyond smooth waters, PWCs will:

- With the exception of pole skis, carry a V sheet and flares under the *Transport Operations (Marine Safety) Regulation 2004*. They will also carry an anchor, drinking water, chart and compass or handheld electronic navigation devices under the *Transport Operations (Marine Safety—Recreational Ships Miscellaneous Equipment) Standard 2006*.
- Where the operation of pole skis are unable to carry the additional safety equipment be limited to smooth waters, aquatic events or within half a nautical mile from the land due to their inability to carry safety equipment.

Class 1F registered PWCs operated in accordance with the *Transport Operations (Marine Safety – Hire and Drive Ships) Standard 2007* will not need to carry the additional safety equipment if operated under the direct line of sight supervision of the hirer of the PWC.

Figure 9: PWC operation by water location

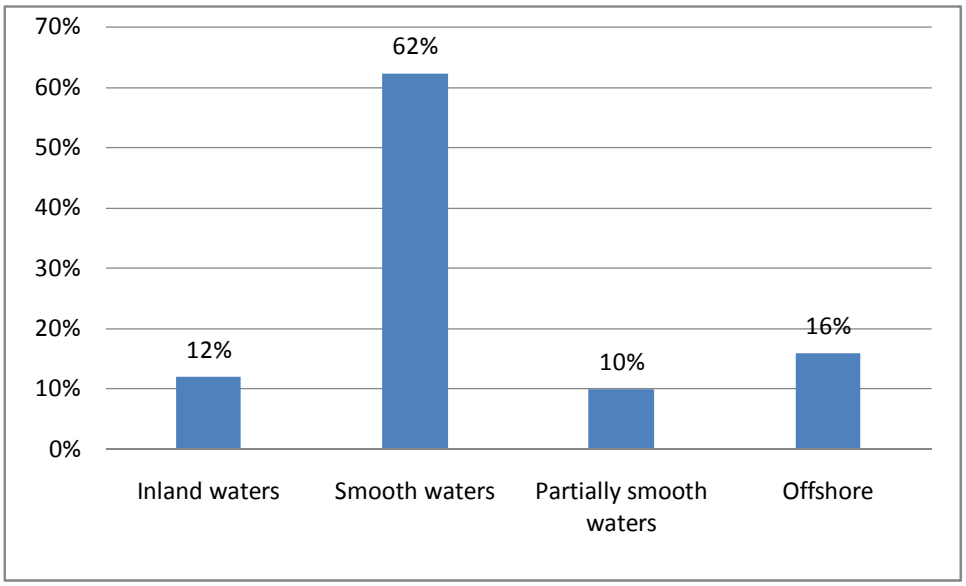


Figure 10: PWC with safety equipment in place

Table 1: Safety equipment for PWC

Smooth waters	PWC	Partially smooth waters	PWC	Beyond partially smooth waters	PWC
Must carry under *Transport Operations (Marine Safety) Regulation 2004*					
Personal flotation device	✶	Personal flotation device	✶	Personal flotation device	✶
Signalling device if operating at night (for example torch, lantern)	✶	Signalling device if operating at night (for example torch, lantern)	✶	Signalling device if operating at night (for example torch, lantern)	✶
Capacity label	✶	Capacity label	✶	Capacity label	✶
		V-sheet	✓	V-sheet	✓
		Flares (two red hand-held and two orange smoke)	✓	Flares (two red hand-held and two orange smoke)	✓
				EPIRB (406 MHz) when operating more than 2nm from land	✶
Should carry under *Transport Operations (Marine Safety – Recreational Ships Miscellaneous Equipment) Standard 2006*					
Anchor with 18 m cable		Anchor with 27 m cable	✓	Anchor with 27 m cable	✓
Oars or paddles		Oars or paddles		Oars or paddles	
Drinking water		Drinking water	✓	Drinking water	✓
Bailing equipment		Bailing equipment		Bailing equipment	
		Chart	✓	Chart	✓
		Compass	✓	Compass	✓
		Handheld electronic navigation device (if not equipped with chart or compass)	✓	Handheld electronic navigation device (if not equipped with chart or compass)	✓

(✶ indicates the equipment already required to be carried on a PWC.)

(✓ indicates the additional equipment required to be carried on a PWC.)

Note: pole skis unable to carry the additional safety equipment listed above will be limited to smooth waters, aquatic events or within half a nautical mile from the coast.

8 Miscellaneous improvements

8.1 Owner to ensure master appropriately licensed

8.1.1 Issue

Boat owners do not always verify that a person holds an appropriate licence before allowing them to use their boat. If a recreational boat is lent for use by another person, there should be an obligation on the owner similar to that required for commercial and fishing boats, to ensure that the person operating the boat holds the appropriate licence.

8.1.2 New requirement

The regulation will require the owner of a recreational boat to verify that a person who is to be the master of the boat holds an appropriate licence to operate that boat.

8.2 Recognition of international licences

8.2.1 Issue

International visitors often have a licence or qualification to operate boats as a master issued by overseas marine safety administrations. The current regulation is very specific concerning the licences that are recognised in Queensland as appropriate to operate a recreational boat. These include an RMDL issued in Queensland, a current equivalent interstate recreational licence or a current Queensland or interstate licence to operate a commercial boat or fishing boat.

Unlike commercial licences, there is no internationally agreed minimum standard for recreational licences making the determination of equivalency difficult.

8.2.2 New requirement

The regulation will exempt masters holding an appropriate overseas licence or qualification from the need to obtain a RMDL to operate a recreational boat until three months after taking up residence in Queensland similar to car driver licence requirements. A list of licences or qualifications issued by overseas marine safety administrations considered equivalent to a RMDL will be published on the Maritime Safety Queensland website and relevant publications.

8.3 EPIRB must have registration sticker attached

8.3.1 Issue

The current requirements to carry an EPIRB makes registration of the EPIRB with the Australian Maritime Safety Authority (AMSA) mandatory but does not require the display of the registration sticker.

National Marine Safety Committee members agreed to include a requirement to affix a registration sticker to the EPIRB in legislation. This will enhance the ability of enforcement officers to monitor EPIRB registration compliance.

8.3.2 New requirement

The regulation will require the registration sticker issued by AMSA to be affixed to the EPIRB.

8.4 Registration of boat on interstate voyages

8.4.1 Issue

Currently interstate registered boats on an intrastate voyage within Queensland waters do not require Queensland registration. The same interstate registered boats on an interstate voyage through Queensland waters are required to be Queensland registered.

8.4.2 New requirement

The regulation will be amended to clarify that a recreational boat registered in another state or territory that is on an interstate voyage does not require Queensland registration while in Queensland waters.

8.5 Stowage of safety equipment

8.5.1 Issue

Current legislation requires that safety equipment, on a commercial and fishing boat, to be located, and storage space to be clearly marked, so as to be readily available for its purpose in the event of an incident. However, this requirement does not apply to recreational boats.

8.5.2 New requirement

The regulation will require the accessible stowage of safety equipment requirement on recreational boats as well.

8.6 Update reference to new Australian Standard for PFDs

8.6.1 Types of personal flotation devices

Marine safety legislation requires that PFDs comply with certain standards and are serviced on a regular basis according to the manufacturer's recommendations. For a PFD to comply with a particular standard, certain information required under that standard must be displayed. This information can be used to identify the standard. Currently, a PFD must comply with Australian Standards AS 1512 (PFD Type 1), AS 1499 (PFD Type 2) and AS 2260 (PFD Type 3).

PFD type 1 has sufficient flotation to support a person's body and head. The flotation collar keeps a person's head above water and is suitable for offshore boating. (SOLAS – Safety of Life at Sea) and coastal life jackets are also accepted as a PFD type 1 for recreational safety equipment purposes.)

PFD type 2 keeps a person afloat but does not have a collar to keep a person's head above water. This PFD is good for waterskiing, PWCs, sailing boats and dinghies.

PFD type 3 has the same buoyancy as PFD type 2 although colours are not as visible. The PFD may be a specified buoyancy wet suit.

The types of PFDs required are:

- PFD type 1, 2 or 3 for a boat operating in smooth waters.
- PFD type 1 or 2 for a boat operating in partially smooth waters.
- PFD type 1 for a boat operating beyond partially smooth waters.

Some commercial boats and commercial fishing boats are required to carry SOLAS or coastal lifejackets depending on their area of operation.

8.6.2 Issue

Current legislation requires that PFDs comply with Australian Standards particular to AS 1512, AS 1499 and AS 2260. Standards Australia recently published the new AS 4758 standard for PFDs, which takes into account advances in PFD design and manufacture, and to more closely align with international standards.

8.6.3 New requirement

The regulation will be amended to include AS 4758 as one of the Australian Standards acceptable for PFDs.

The new AS 4758 PFDs are marked differently as specified below:

- PFD type 1 – level 100 or 150
- PFD type 2 – level 50
- PFD type 3 – level 50S (special purpose).

The inclusion of the AS 4758 PFD will have no economic impact on stakeholders as PFDs made to the other Australian Standards will continue to be sold for some time. PFDs made to the previous

standards will be acceptable for use into the foreseeable future and stakeholders will not need to replace their existing PFDs provided they are serviceable. Eventual retirement of the other standards will be considered through national consultation.