Australian Government
Australian Maritime Safety Authority

Safety guidelines for marine adventure tourism operators

A guide for domestic commercial marine adventure tourism operators to support the development of their safety management system.

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Contents

Introduction

Scope of the guidelines

These guidelines are designed to assist operators (including owner operators) of marine adventure tourism vessels to develop, maintain and implement effective safety management systems (SMS). They have been developed with input from marine adventure tourism operators and associated professionals.

The guidelines set out recommended methods of achieving an acceptable safety standard.

Unless otherwise stated in these guidelines, these methods—or comparable methods that can be shown to produce the same safety outcomes—should be reflected in an operator's SMS. They should be read alongside the *SMS Guidelines* and *Marine Order 504 (Certificates of operation and operation requirements—national law) 2018*.

Application of the guidelines

These guidelines apply to all domestic commercial marine adventure tourism operators in Australia.

Marine adventure tourism operations are those that involve people participating in high-speed activities, aerial and towed activities attached to the vessel, or other heightened-risk situations.

In addition, for these guidelines to apply, the operation of the vessel must be in connection with a commercial activity such as tours or the letting of vessels for hire.

The types of operations that AMSA consider to be "marine adventure tourism operations" include, but not limited to:

- Air boat operations carrying passengers
- High speed adventure activities (including thrill rides). This may include activities on:
  - Fast craft
  - Jetboats
  - Ocean collared vessels
- Personal Watercraft or PWC operations. This includes:
  - Aerial activities on PWC with an aerial freestyle attached
  - PWC hire (licensed rider PWC hire, also known as 'take away PWC hire' or unlicensed rider PWC as part of a guided tour)
  - PWC tour operations
- Parasailing operations
- Towed watersports.

Purpose of the guidelines

These guidelines are intended to assist marine adventure tourism operators to:

- identify, understand and comply with their obligations under the *Marine Safety (Domestic Commercial Vessel) National Law Act 2012* (National Law)
- develop, maintain and implement an effective SMS, and
- deliver their activities safely.

Disclaimer

The information provided in this document is intended to be general guidance only and may not be applicable to every operation and situation. It is the responsibility of the operator to ensure that any actions taken are in accordance with applicable laws and regulations. AMSA assumes no legal liability or responsibility for the accuracy, currency or completeness of this information. This document is subject to change without notice.

Passenger safety

Passenger safety on marine adventure tourism vessels is of utmost importance. Safety considerations will differ depending on the type and operation of the vessel.

For marine adventure tourism vessels that travel at high speeds, passenger restraining methods (such as seatbelts) should be considered as part of the operation's documented risk assessment.

For a personal watercraft where there is generally only one user, an emergency cut out kill switch may be required, to safely stop the engine of the vessel if the person is thrown overboard.

Note: *National Standard for Commercial Vessels Part F Section 1 Sub-section C – Category F2 Fast Craft* provides operational performance, engineering and equipment standards for Class 1 fast craft <35 m or Class 1 vessels of any length operating in sheltered waters.

All passengers or participants should be provided with a safety briefing on the vessel's emergency procedures so they can quickly respond to any safety issues that arise (see *Marine order 504—Certificates of operation and operation requirements—national law* for details).

It is particularly crucial for marine adventure tourism operations to have a comprehensive safety briefing based on the operations' risk assessment.

Passenger safety considerations

Operators should do a comprehensive risk assessment that includes the following passenger safety considerations:

Age: Some marine adventure tourism operations may have age restrictions for passengers. This is particularly important for children, as they may not be able to handle the high speeds, acceleration and rough water conditions that come with marine adventure tourism operations.

Height: Some passengers may experience difficulty meeting safety equipment requirements. Marine adventure tourism vessel operations may also have height restrictions for passengers to ensure that they can safely fit into the seats and are not at risk of falling out of the vessel.

Passenger capacity limits: Every marine adventure tourism vessel has a passenger capacity rating that should not be exceeded. Exceeding this limit can put the vessel at risk of capsize and other types of incidents.

Medical considerations: As far as is reasonably practicable, prior to engaging in the activity, the operator should provide passengers with sufficient information to be able to assess their own health and physical capabilities to take part in the activity. Operators should also give passengers an opportunity to disclose any medical or

pre-existing conditions that may pose a risk of injury or become exacerbated during the activity.

Note: *The National Law requires owners (including operators) of domestic commercial vessels to provide, so far as reasonably practicable, information, instruction, training or supervision to people on board the vessel as necessary to ensure their safety.*

Passenger safety equipment

All safety equipment and methods used to restrain passengers should be appropriate for the specific activity, considering factors such as:

- type of vessel and operation
- expected number of passengers
- passenger safety and comfort.

Safety equipment must meet either the *National Standard for Commercial Vessels (NSCV),* an Australian Standard, or another recognised standard. The relevant standard will depend on the item – equipment covered by the NSCV must comply with the standards specified in the NSCV. Items of safety equipment carried on or fitted to a marine adventure tourism vessel which are not listed in NSCV C7A, must meet an appropriate Australian or other recognised standard.

The design of the vessel (particularly the hull, seating and hand holds) should be carefully coordinated and tested as a complete system.

Operators should always prioritise passenger safety, use recommended safety equipment and appropriate restraining methods.

The determination of the appropriate passenger safety equipment and restraining methods for the vessel **must consider** the three items listed in the following table.

Passenger safety equipment that must be considered
Lifejackets Depending on the risk assessment, it may be necessary for all passengers on board to wear appropriate safety gear (such as lifejackets), at all times. *Lifejacket wear may be especially important on marine adventure tourism vessels, where accidents can happen quickly and without warning.* It is also important to ensure that all safety gear is properly fitted and in good working order. All vessels must carry appropriate lifejackets. The requirement for lifejacket wear must be addressed in the vessel's risk assessment and through a written procedure in the SMS.
Handholds or grip supports Depending on the risk assessment, it may be necessary to equip every seat with handholds or grip supports positioned in front of the passenger, enabling them to securely grasp with both hands. The operator should consider the most appropriate position for these supports and take into account the possibility of losing a solid grip in colder conditions. Additional thought may be required for cushioning the rear-facing portion of a seat and it's corresponding grip supports, to minimise the chance of facial harm to the passenger seated behind during sudden deceleration.
Guardrails In crafting the vessel's design, it is essential to minimise the structural elements that passengers might collide with or fall onto during a slam event, thereby lowering the potential for harm. Additionally, pay attention to the bulwarks or guardrail heights in comparison to the seat heights, to decrease the likelihood of passengers being ejected. Guardrails along the edge of the vessel can prevent passengers and crew from falling overboard and provide something to hold onto when near the edge of the vessel. ***Note**: See Marine Order 504 and the NSCV Sections C1 and C7A for further details.*

Additional passenger safety equipment and restraining methods that may be relevant to the vessel and its operation are listed on the next page.

Passenger safety equipment that may be relevant
Helmet Some activities can pose significant risk that can be managed in part through helmet wear. Wearing a helmet with the chin strap secured offers crucial head protection in the event of an impact, or coming into contact with the vessel, equipment, or other items.
Harnesses and jack-stays To prevent passengers from falling overboard or being separated from the vessel, safety harnesses may be used to physically connect individuals to the vessel. These harnesses can be separate pieces or may be combined with inflatable lifejackets for offshore use. Use tethers to clip individuals to fixed points, such as padeyes or jack-staye (ropes, webbing, or wires that run either fore and aft or athwartships). These jack-stays may be placed along the vessel's centreline, side deck, or cockpit. ***Note:*** *Harnesses used for parasailing are distinct from the conventional types mentioned here.*
Jockey seats Design seating arrangements so passengers can brace themselves against shocks and movements of the boat. Jockey seats with foam cushioning are one of the options for marine adventure tourism vessels. Regardless of seating type, the Master or crew should always operate the vessel appropriately in accordance with the sea conditions.
Emergency cut out kill switch (kill cord or safety lanyard) The kill switch is a safety feature that involves a cord connecting the rider to a switch, designed to stop the vessel’s engine in the event of an emergency, or if the rider falls off the vessel. All PWCs should have a kill switch.
Seat belt Passengers can wear a seat belt across their lap. It is designed to keep the passenger securely seated in the event of sudden deceleration or impact, reducing risk of injury. It is typically a strap made of a durable material that is fastened around the waist and buckled in place and has a quick release mechanism. Some suspension chairs may also have seat belts attached and are designed to withstand high G forces.

Seat cushion or seat suspension

When a vessel crests a wave, it is common for passengers to become momentarily separated from their seats. When the vessel makes contact again with the water, passengers may experience a forceful impact with the seat, raising their chances of injury.

Seat design elements, such as cushioning or padding, can help minimise this injury risk.

However, while a plush, soft seat pad may offer comfort when stationary or in calm waters, it can pose a problem in rough sea conditions. When vessels hit the water after cresting a wave, passengers sink down in their seat, compressing the cushion and causing impact to the passenger. Using seats that can withstand significant compression may reduce the impact on the passenger and reduce the risk of injury.

Suspension seats can also reduce severity of vibration and mechanical shock.

Seat position

Passengers seated in the front of the vessel are more likely to experience a greater shock load than those situated in the middle.

It is essential to position seats in an area where occupants can place their feet flat on the deck, avoiding any sloping bulwarks. The passenger seating position is a particularly critical consideration for vessels operating at high speeds.

These measures should be taken to ensure passenger safety and comfort while on board the vessel.

Managing the risks caused by vessel movement

Understanding the risks of vessel motion

The National Law and Marine Order 504 require operators to identify, document and manage all reasonably foreseeable hazards associated with the vessel and its operation in their SMS.

Unexpected or high rates of vertical or horizontal acceleration or deceleration can pose a risk to people onboard, particularly when the vessel is:

- operating at high speed
- making unexpected or fast turns
- hitting wash from another vessel
- transiting coastal bars
- navigating in open waters.

Operators should identify and manage hazards and risks (applicable to their operation) that could be caused by vertical and horizontal acceleration and deceleration in their risk assessments.

Techniques to monitor safe vessel acceleration

By using the appropriate tools and knowledge to measure vessel accelerations, operators can make informed decisions about safety equipment, seating arrangements, and the potential impact on passengers during vessel operations.

Accelerometers are valuable devices for accurately measuring and recording vessel accelerations.

Ways to monitor vessel acceleration include:

- accelerometer (including measurement of speed and G-Force through apps on smartphones)
- visual monitoring
- use of technology such as GPS
- communication with the crew
- communication with operators in the area
- speedometer.

Factors to consider when determining safe levels of acceleration

During the marine adventure tourism activity, the Master should be able to navigate various sea conditions and determine the safe level of vessel acceleration. Factors for operators and Masters to consider when determining safe levels of acceleration include:

- vessel speed and direction
- wave heights and sea state
- wind and current conditions
- size and type of vessel
- crew experience and skill level
- vessel's stability and manoeuvrability
- navigational hazards and obstacles
- other vessels in the vicinity
- impact on passengers.

Other passenger safety considerations

Passengers may encounter health risks due to high temperatures or cold weather.

High temperature and excessive sun exposure can lead to hyperthermia or heat exhaustion, and hypothermia can occur if the body temperature drops due to exposure to cold or windy conditions.

While exposure to high or low temperatures play a significant role in these conditions, factors such as age, health, type of clothing and hydration also contribute.

Operators should assess risks for passenger exposure to these conditions by providing clear instructions on how to minimise risk and supplying preventive measures like shade, hydration, and protective gear.

When promoting and assisting passengers, operators should consider the accessibility of their activities. This may involve offering appropriate boarding equipment and seating arrangements, accessible restroom facilities (depending on the voyage's location and duration) and providing multilingual information.

The Master and crew should be trained and available to assist passengers with disabilities, and safety equipment should be accessible and comfortable for all passengers.

Alternative communication methods should also be in place for passengers with hearing or visual impairments, as well as passengers from a non-English speaking background.

Safety briefings

Marine adventure tourism activities can be exciting for passengers but that comes with the inherent risk. Operators cannot assume that by choosing adventure tourism, an individual is already aware of the potential risks. Operators should explicitly inform every passenger of the risks before each trip. Although it can be assumed that those who sign up for such a journey understand the potential risks, it remains crucial to explicitly inform them.

It is the responsibility of the operator to provide to all passengers before setting out on a trip, thorough and detailed explanations regarding the vessel's safety features, and key potential hazards and what to do if the hazard becomes a safety risk. In operations where passengers

must wear a lifejacket, this should be included in the briefing (lifejacket wear requirements must be addressed in the operation’s risk assessment and SMS).

When a child participates in a marine adventure tourism activity, their responsible adult guardian should be notified of the risks and should provide permission for their participation.

At a minimum, passenger briefings should include the components listed on the next page.

Safety briefing components	*Tick if covered*
Introduction Provide a general overview of the activity including the type of operation and duration as well as location(s) of the trip.	
Passenger expectations Operators should clearly communicate the activities that will be undertaken and showcase the elements of a typical experience for the passengers, so they are fully aware of what awaits them.	
Communicating safely during the activity Passengers and crew should be familiar with how to communicate safely with each other whilst the activity is on-going. This could be hand signals or gestures to stay safe during the activity. Operators should ensure that the passengers understand and know these signals or gestures.	
Visual briefing Operators should present the briefing in a way that ensures it is understood by all passengers. This could include using written content, eye-catching visual presentations, and easily understandable safety signs in a variety of languages or visual representations.	
Passenger safety Guidance on the physical requirements of the activity and the intensity that passengers may encounter. Highlight the importance of possessing the physical strength to withstand sudden movement and other sudden changes during the activity.	
Passenger medical considerations It is the operator's duty to develop a best practice procedure to ensure that the passenger can make an informed decision that the activity is going to be suitable for their individual ability prior to the activity.	
Best posture and movement Guidance on the best posture, the intended function and utilisation of the handrail, the proper application of the lap seat belt or alternative restraining techniques (including how to fasten and unfasten them) and the importance of their use during transit to prevent injuries. Operators should provide clear instructions to passengers regarding when it is safe to move around the vessel.	

Operational safety

The owner, operator, Master, and crew should all be involved in carrying out the risk assessment and in developing, reviewing, and updating the SMS.

As well as being aware of specific hazards and having effective controls to manage them, operators can implement a range of steps to reduce the risks associated with a marine adventure tourism experience. These general steps are outlined below.

General operating restrictions

As many marine adventure tourism vessels are designed to operate with rapid changes in motion, it's important to maintain knowledge and control of the vessel's speed and acceleration.

The Master should be aware of other vessels, water conditions, such as waves and currents, and adjust their speed and acceleration accordingly. It is also important to be aware of aircraft and overhead structures in the area if undertaking parasailing or aerial freestyle operations, and to maintain a safe distance at all times.

General operating restrictions that are relevant to marine adventure tourism operations include the following.

Operating areas: Commercial vessels should operate within the operating limits assigned to them. Operators should also take into consideration proximity to canal or shoreline revetments, wharves, jetties, piers, buoys and channel markers when conducting their operations.

Local waterway rules: It is important to note that different states may have local rules in and around their local waterways. For example, operations may need to have permission to conduct 'beach buzzing' if included in the marine adventure tourism activity.

Safe speed and speed limits: Vessels are required to adhere to local regulatory speed limits in designated areas to prioritise the safety of people in the water, other vessels and wildlife. When deciding on an appropriate speed, it is crucial to consider multiple factors, including:

- visibility
- presence of other vessels
- possible obstacles in the water
- wind and wave conditions
- intensity and direction of the current
- width of the waterway
- vessel's manoeuvrability.

Vessel stability: Marine adventure tourism vessel operators should consider the distribution of passenger weight, as it can greatly influence the stability of the vessel. Passengers and load need to be distributed evenly to maintain appropriate freeboard, trim and heel. This means keeping enough distance between the water and the gunwale and operating within the vessel capacity limits.

Marine fauna: If a marine adventure tourism vessel is operating in areas where marine fauna is likely to be present, the risk assessment should include control measures to reduce the risk of contact with marine fauna.

Noise levels: Some marine adventure tourism vessels can be very loud, which can be disruptive to other waterway users, nearby residents and marine fauna. Most states have regulations in place which place limitations on noise levels of domestic commercial vessels.

Weather conditions: Some marine adventure tourism vessels can be difficult to control in rough weather conditions. It's important to check the weather forecast before heading out on the water and avoid operating during storms, high winds, or other adverse weather conditions.

Wind speed and wind direction: Marine adventure tourism vessels are affected by wind in different ways depending on their shape and size. Operating in windy and wavy conditions will affect the direction and steering of the vessel. Some types of vessels may struggle to operate safely in high winds.

Conditions on certificates: Some operators may have conditions specified on their certificates of survey and operation which must be complied with. These may include operating limitations such as maximum speed (for example, <25 knots) or limits on operating in certain wave heights or during high winds.

Operating limitations should be presented in a manner that provides simple and clear directions to the crew and should be posted in a prominent position in the operating compartment. The Master and crew of the vessel should have a copy of the current certificates readily available and accessible.

Vessel safety equipment

All safety equipment on the vessel should be appropriate for the purpose and the conditions it will be used in. Safety equipment should be installed, checked, maintained, and replaced according to the manufacturer's instructions (or, if necessary, to a higher safety standard).

This includes items such as seats and their attachments, seatbelts or other restraints, protective clothing, harnesses, lifejackets, and communication equipment.

Operators should not use any equipment that they know, or suspect, is unsafe. Examples of unsafe equipment include items that have been weakened by sunlight, are damaged or are not properly sized for the user.

It is crucial to securely store safety equipment onboard (the NSCV provides standards for safety equipment stowage).

Accidents can occur unexpectedly and having readily accessible and properly labelled and stored safety equipment can be a lifesaver.

Proper storage also prevents safety equipment from becoming a danger during high-speed manoeuvres and acceleration.

Equipment should be regularly inspected, and the inspection regime should be included in the planned maintenance system for the vessel and/or operation. Any repairs or replacements should be documented.

Special attention should be paid to any structural weaknesses in the hull, seats, handrail mounts, and seatbelt or other restraining mechanisms or harness.

The table on the next page contains a list of additional safety equipment that may be required based on the operator’s risk assessment. This equipment is additional to the safety equipment carriage requirements of the NSCV. It is also important to note that this is not a prescribed requirement and the list is not comprehensive.

Operators should consider any unique safety equipment requirements that may be necessary for their vessel operation, and what equipment may be required based on their risk assessment.

Vessel type	Additional safety equipment
Airboat	*An effective barrier* fitted between rotating machinery and passengers. It should not be possible for hands to come into contact with any rotating equipment.
	Propeller specifically manufactured for airboats and rated for the engine used. Maintenance procedure given by manufacturer should be strictly followed.
Collared vessels	*Lap seat belts* for collared vessels operating offshore or in rough, turbulent waters, lap seat belts are recommended (especially in high vertical acceleration areas of the vessel such as the forward quarter of the vessel).
Jet boat	*Lap seat belts* fitted to each seat to provide a secure restraining method for passengers in case of sudden stops or impacts (this can also assist in ensuring that passengers remain seated while conducting manoeuvres).
Parasail*	*An emergency sea anchor* is a useful piece of emergency / safety gear if a vessel loses power while at sea, particularly in strong winds and rough seas. If used correctly, a sea anchor will keep the vessel's bow into the wind and sea, limiting the amount of rolling and amount of water coming into the boat. It also reduces the distance a vessel will drift while awaiting assistance. It enables the Master to calmly assess the situation and, if needed, time to free and ready the anchor.
	Parasailing deflation device (such as a chute recovery device) can be attached to the back right side of the parasail, and once placed in the water, it will cause the parasail to come to a gradual halt.
	A parasail harness is a safety belt that connects the user to the parasail. It is important that the harness is correctly fitted and suitable for the user's body size in accordance with manufacturer's weight ratings and instructions.
	The parasail tow rope used for parasailing should comply with the manufacturer's specifications for safe working loads and limits, and the rope should be replaced periodically in accordance with the operator's risk assessment. The operator should keep records of rope inspections and manufacturer's specifications.

	Vessel winch the operator should ensure that a cut-out safety device is fitted to a winch (vessel winch) used for parasailing and regularly inspected and tested.
	*For more information, please refer to: *Parasailing safety guidance*
Personal water craft (PWC)	*Custom first aid kit* to provide immediate medical assistance in case of an accident or injury while riding the PWC. A custom first aid kit for PWCs should include sterile gauze, antiseptic wipes, bandages, scissors, and an aluminium foam splint. It is important to regularly check and restock the first aid kit to ensure that all necessary items are available in case of an emergency.
	Foot straps that are adjustable and can be tightened or loosened as per the requirement of the passengers. They provide stability and help prevent passengers from falling off the boat in rough waters or sudden movements.
	Kill switch (or kill cord) lanyard attached to both the PWC and the rider's wrist or lifejacket. This will automatically turn off the engine in case the driver falls off the PWC.
	A rescue board attached to the back of the guide's or instructor's PWC, which can be used to transport a person who needs help back to shore or to another vessel. The board provides a stable platform for the person in distress to hold onto and helps to keep them afloat until they can be safely rescued.
	Speed governing device which limits the PWC to a safe speed (this might be 35 knots for an open estuary with few other users).

Emergency response plans and procedures

The SMS must include effective plans and procedures for responding to emergency situations, even if the likelihood of these situations occurring is low.

The Master and crew should be familiar with and trained in emergency response and procedures. This should include regular drills to confirm the competence of the Master and crew in responding to an emergency.

There should always be at least one person (whether Master or crew member) onboard who holds a current first aid certificate (equivalent to at least *HLTAID011 - Provide first aid)* and is always available to provide first aid.

Before each trip, operators should ensure that all people onboard are aware of what to do in an emergency and that appropriate equipment is available on board. The operator's SMS should ensure that the contact details of the relevant local authorities and other relevant shore-based contacts are accessible and available to Master and crew to ensure efficient and quick coordination in case of an emergency.

Emergency response plans should:

- include a thorough medivac plan
- have a record of the emergency equipment and first aid kit carried on board the vessel
- provide for regular checks and maintenance of the equipment.

It is important that all vessels carry first aid supplies. Operators should assess the need for any additional supplies based on their operation.

The first aid supplies required will depend on:

- distance and time required to access medical aid (external professional medical aid)
- communication capability on board the vessel to access medical assistance and advice, and the likelihood that communication equipment will be effective given the location and remoteness of the area of operation
- type of operation and activities being undertaken (types and level of hazards likely to be encountered)
- level of first aid training of the crew, personnel and people on board, including in the first aid procedures and drills carried out on board the vessel
- prevailing or expected environmental conditions likely to be encountered on the voyage
- type of incidents and injuries that are known to have occurred in the operation or similar operations.

Examples of emergency procedures that are unique to marine adventure tourism operations

Retrieving people from the water onto a PWC

The first and most common method is to simply pull the person onto the back of the PWC. This works best if the person is close to the PWC and can grab onto the hand holds at the back of the PWC.

Another method is to use a rescue board attached to the back of the PWC. The rescue board will have grip holes that can be used for the person to hold onto while the tour guide drives to the person's PWC or ashore.

Responding to issues while undertaking parasailing operations

If a participant falls into the water, the parasailing operator should immediately stop the vessel and ensure that the participant is safely retrieved from the water. The operator should ensure that the parasail descends away from the participant to be safely retrieved from the water.

In the case of an equipment failure or malfunction, the parasailing operator should immediately bring the participant back to the vessel.

It is crucial to have a backup plan in place such as having a parasailing deflation device and ensure that all equipment is regularly maintained and inspected.

Preparing and responding to a passenger injury or other medical emergency

This recommended procedure provides a generalised framework for handling passenger injuries and other medical emergencies.

Before an incident

- *Emergency plan* — Ensure the emergency plan details what steps to take in the event of a passenger injury or other medical emergency.
- *Medical equipment* — Ensure that first aid kits are adequately stocked and readily available. A defibrillator should also be accessible if possible.
- *Training* — All crew members should be appropriately trained in first aid and emergency response procedures.

Responding to an incident

- *Act appropriately* — Assess and respond to the medical emergency that has occurred, as appropriate to the incident, according to the emergency plan and training, utilising available first aid and medical equipment.

- *Contact authorities* — If required, use the marine radio to make a distress call to the local authorities or marine rescue providing them with your location and the nature of the emergency.

After the incident

- *Document the incident* — Record all details of the incident, including the date, time, location, nature of injury, steps taken, and the names of all individuals involved.
- *Report marine incident* — Passenger injuries resulting from incidents must be recorded and reported to AMSA, click on link *How to report an incident (amsa.gov.au)*.
- *Review and improve* — After the incident, review the response to the emergency and identify any areas for improvement. Update the emergency plan as necessary.

Passenger safety should be the top priority for all marine adventure tourism operators. Regular training and reviews ensure that all crew members are prepared to respond effectively when emergencies occur.

Incident alert and reporting

Any event that **could** have resulted in an incident must be reported to AMSA. These might also be known as a ‘near miss’.

It is important to note that even if the operator managed to control the situation without any issues, it is still likely that under other circumstances the situation could have resulted in a consequential outcome.

After any incident, the operator should review their SMS to ensure that the incident has been considered and identified in their risk assessment.

Operators should also periodically review incidents and near miss information from other similar types of operations. This information can be useful to avoid the same incident occurring in their own operation.

Periodic review and inspection of vessels and equipment

It is essential for operators of marine adventure tourism vessels to establish and maintain a regular inspection and maintenance system that is suitable for each vessel, its machinery and equipment.

The system should have provisions for keeping records of all inspections and for addressing any deficiencies found during the inspection or review. These records can be maintained in the logbook.

Crewing considerations

Appropriate crewing

Appropriate crewing is a key component of a vessel's risk assessment.

Operators of marine adventure tourism vessels must ensure that the vessel operates with appropriate crewing in accordance with Marine Order 504.

The determination of appropriate crewing should be recorded in the vessel's SMS and be accessible to the Master and crew.

The operator should consider the following when determining appropriate crewing for marine adventure tourism vessel operations:

- risks to the safety of the vessel, the environment, and all people on or near the vessel
- consideration of crew working hours and rest periods to ensure they are not overworked (which can otherwise lead to fatigue and significantly impact crew performance and safe operation)
- characteristics of the operation, including:
  - vessel size
  - operational area
  - complexity of the operation
  - duration of the voyage
  - expected conditions
  - crew competency
- all other requirements outlined in Marine Order 504 to ensure compliance.

Crew-to-passenger ratio

One of the considerations when determining the appropriate crew for the vessel is the number of people to be carried on the vessel and the effectiveness and timeliness of arrangements for passenger monitoring. This can be described as the crew-to-passenger ratio.

When determining the appropriate crew-to-passenger ratio for different types of vessels, it is important to consider the specific operation and record this information in the SMS.

In some cases, such as when the Master or crew also functions as a tour guide, this should be clearly documented in the SMS and communicated to passengers during safety briefings.

For example, on PWC operations, a ratio of 1 crew (tour guide) for every 4 PWCs (hirers) may be appropriate. The crew-to-passenger ratio should be based on the operation's SMS and risk assessment.

Crew skills and experience

Efficiently and safely navigating marine adventure tourism vessels requires skilled and competent crew that can handle demanding situations.

This is especially true for vessels which operate in high-density areas or near the shore, where the navigators are under immense pressure.

The Master of such vessels has limited time to take appropriate action, which makes their job even more challenging than that of a conventional vessel.

It is important to note that navigating a marine adventure tourism vessel requires a unique set of skills that differs from navigating a conventional vessel.

When operating a marine adventure tourism vessel, technology can only assist to a certain extent. The safety of the vessel ultimately depends on the competence and good judgement of the person in control.

During the journey, it is important the Master and crew possess the ability to predict the outcome of their actions when increasing speed and executing unexpected manoeuvres on the vessel.

Crew training

Before the operator allows passengers to be carried, the Master and crew should complete training specific to the marine adventure tourism vessel and its operations.

The training program should ensure that all Masters and crew are able to competently carry out their duties on board the vessel in a safe manner and respond rapidly and effectively in an emergency.

The operator should also conduct emergency drills to test procedures and confirm the competence and ability of the Master and crew to respond.

Crew training should cover the following topics and each topic should be customised to include the specific and distinctive tasks of the operation.

All aspects of vessel operations, particularly at high speeds and in diverse wind and sea conditions: The crew should be well-versed and knowledgeable on the marine adventure tourism vessel operations and how to navigate the vessel, especially during turbulent and challenging weather conditions.

Passenger care and management: The crew should be trained to ensure passenger comfort and safety. This includes answering queries and resolving any issues the passengers face during the journey.

Safety briefings: The crew should have an in-depth knowledge of safety protocols and procedures and be able to provide thorough safety briefings to passengers before departure. All crew members should be able to communicate safety information clearly and concisely.

Emergency procedures including for a person overboard situation: The crew should know to handle operational emergencies and participate in regular drills. The crew should be familiar with, or have rapid access to, the contact details of relevant local authorities and emergency services.

Induction training and life-saving equipment training: New crew members should be provided with an induction training. Master and crew should complete life-saving equipment training.

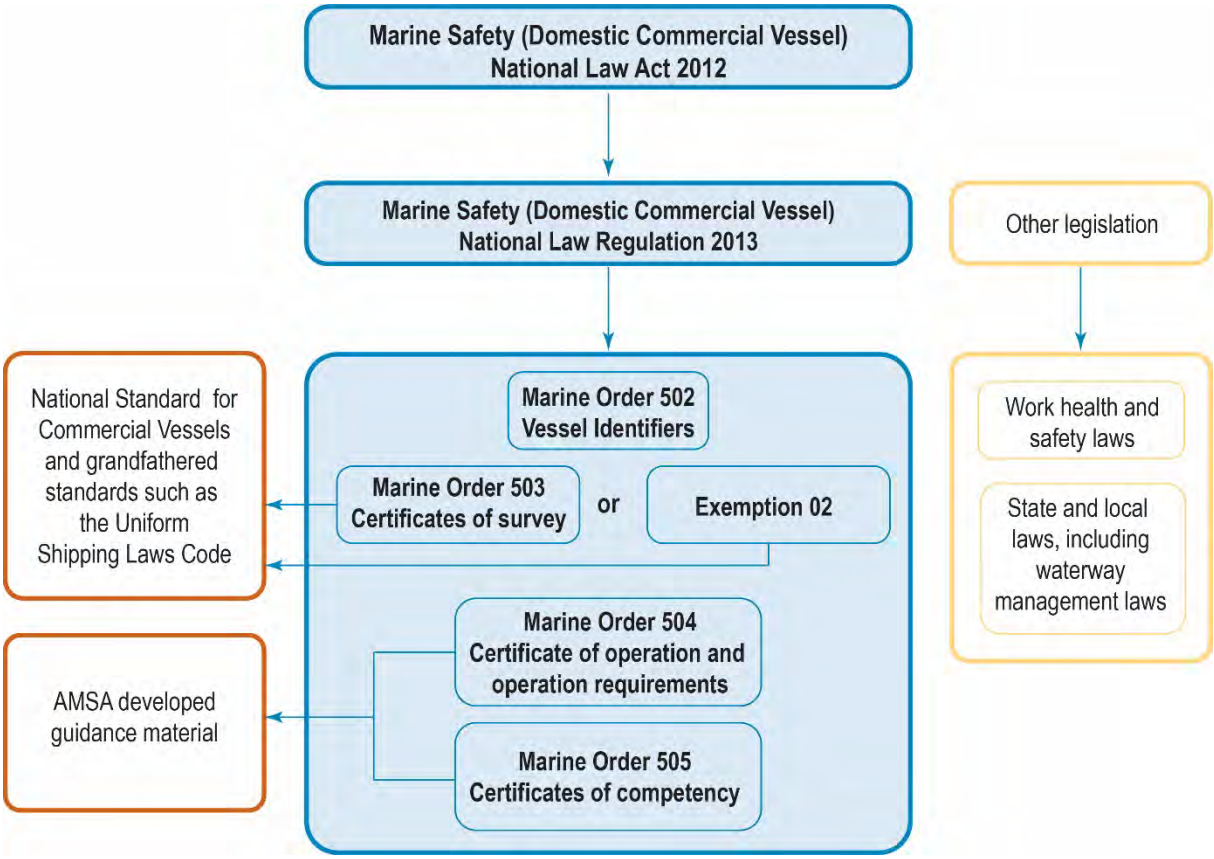
Operating and navigation rules including navigating at speed: Crew should the navigation and operating rules to ensure the safety of everyone on board. This includes knowledge of navigating at speed, in different weather conditions and on different waterways used by the operation.

Communications: The crew should understand the different communication protocols involved in the vessel operations. This involves establishing effective channels for navigation, and ensuring the ability to communicate effectively with other crew, the Master and passengers.

Familiarisation with vessel and operational area: The crew should be familiar with the vessel, the operational area and SMS. Ideally, the crew should have conducted several trips under the Master's supervision before embarking on their own.

The regulatory framework

The following figure provides an overview of the regulatory framework relevant to marine adventure tourism operations.



More information

- *Exemption 2 – Marine Safety (Certificates of survey)*
- *Marine Order 501 (Administration – national law) 2023*
- *Marine Order 502 (Vessel identifiers – national law) 2017*
- *Marine Order 503 (Certificates of survey – national law) 2018*
- *Marine Order 504 (Certificates of operation and operation requirements – national law) 2018*
- *Marine Order 505 (Certificates of competency – national law) 2022*
- *National Standard for Commercial Vessels (NSCV)*
- *National Standard for Commercial Vessels, Part C – Design and Construction, Section 1 – Arrangement, accommodation and personal safety*
- *National Standard for Commercial Vessels, Part C – Design and Construction, Section 7 – Equipment, Subsection C7A – Safety equipment*
- *National Standard for Commercial Vessels, Part F – Special Vessels, Section 1 – Fast craft, Subsection F1C - Category F2 Fast Craft*
- *Parasailing safety guidance*
- *Planned Maintenance*
- *Unique vessel identifiers*
- *Survey modifiers*
- *Work health and safety on domestic commercial vessels*

Contact us

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Feedback
AMSA strives to develop safety regulations and guidance documents that are effective, relevant and practical to implement. Your feedback is vital to the process of regulatory development. To provide feedback or report issues relating to this document, email *NSCVfeedback@amsa.gov.au*

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