



Australian Government  
Australian Maritime Safety Authority

# WORKING BOATS

Issue 20 | December 2020



## CONTROL RISK

stay safe, be prepared

Passenger safety  
Ramping up

Dealing with fire  
A skipper's account

Marine fauna  
Know the risks



Australian Government

Australian Maritime Safety Authority

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## Message from the CEO

The events this year have brought unimaginable challenges for our community and the commercial vessel industry as a whole. If we have learnt one thing this year, it's the value in working together, looking after each other and finding shared solutions. It's the people that drive the way forward and the people that matter.

That's why this edition of *Working Boats* focusses on risk assessment. Safety remains fundamental—if not even more important—in light of this year's events, and risk assessment is the starting point when planning the way you manage safety.

We spoke to Maritime Constructions in Adelaide and the Sydney Heritage Fleet about how they manage operational risk and the tools they use to keep track of their safety management.

Manly Fast Ferries and The Riverboat Postman share their take on managing passenger safety and we take a glimpse into the risk assessment Pacific Marine Group and Reef Ecologic undertook leading up to the installation of the Museum of Underwater Art on John Brewer Reef.

This twentieth edition of *Working Boats* is also the last edition of the publication in its current format. Earlier in the year we sought your feedback on the magazine—the stories and information, the design and how we can improve on the way we provide you with safety information. Your valuable response was loud and clear—keep the information coming, but move with the times—and this is exactly what we are doing. In the New Year, *Working Boats* will be solely digital on our website, allowing us to bring you quality safety information and stories about the people making up our industry, more frequently.

As AMSA reaches its 30-year anniversary in January we consider ourselves fortunate to have such an engaged industry. Your feedback is key to our vision of delivering relevant, practical and flexible safety regulation to stand the tests of time.

I look forward to working with you all to achieve this. But for now, I wish you all a safe and happy holiday season.

**Mick Kinley**

Chief Executive Officer





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# Welcome to the reef's *growing attraction*

The first Museum of Underwater Art (MOUA) located on the Great Barrier Reef fits naturally into its underwater setting. For such a unique installation in an environmentally sensitive location, the long days of planning and risk assessment have made the complex project worthwhile.

By Simon Enticknap

**Underwater installation:** A statue is lowered into position as part of the Museum of Underwater Art – *Image by Jason deCaires-Taylor*



**Inspirational:** Museum of Underwater Art on the Great Barrier Reef is an adventure for scuba divers – Image supplied by Jason deCaires-Taylor

When completed, the overall museum will encompass several sites both above and below the waterline in the Townsville region, including proposed installations on Palm Island and Magnetic Island.

One of the first stages of the project to be completed is located at John Brewer Reef, in the Great Barrier Reef Marine Park, about 75 kilometres east of Townsville.

A large underwater sculpture of a coral greenhouse, complete with human figures, work benches and a garden, now sits in 16 metres of water right next to the reef, creating a delightful underwater encounter for divers.

Installing such a large structure in a protected marine environment required

considerable pre-planning—not just in assessing the best location and any potential environmental impacts of the artwork, but also determining how to install it safely in an offshore location, and the impact that visitors may have on the area.

Dr Adam Smith, managing director of reef research group—Reef Ecologic—and MOUA deputy chair, played a lead role in the environmental impact assessment prior to the installation. He said a number of locations were assessed, but John Brewer Reef was chosen because it matched the criteria for having a relatively level, sandy seabed in a sheltered area, to provide protection against the weather for the artwork.

'We did really well to find a site with flat sand to put the artwork on that is also

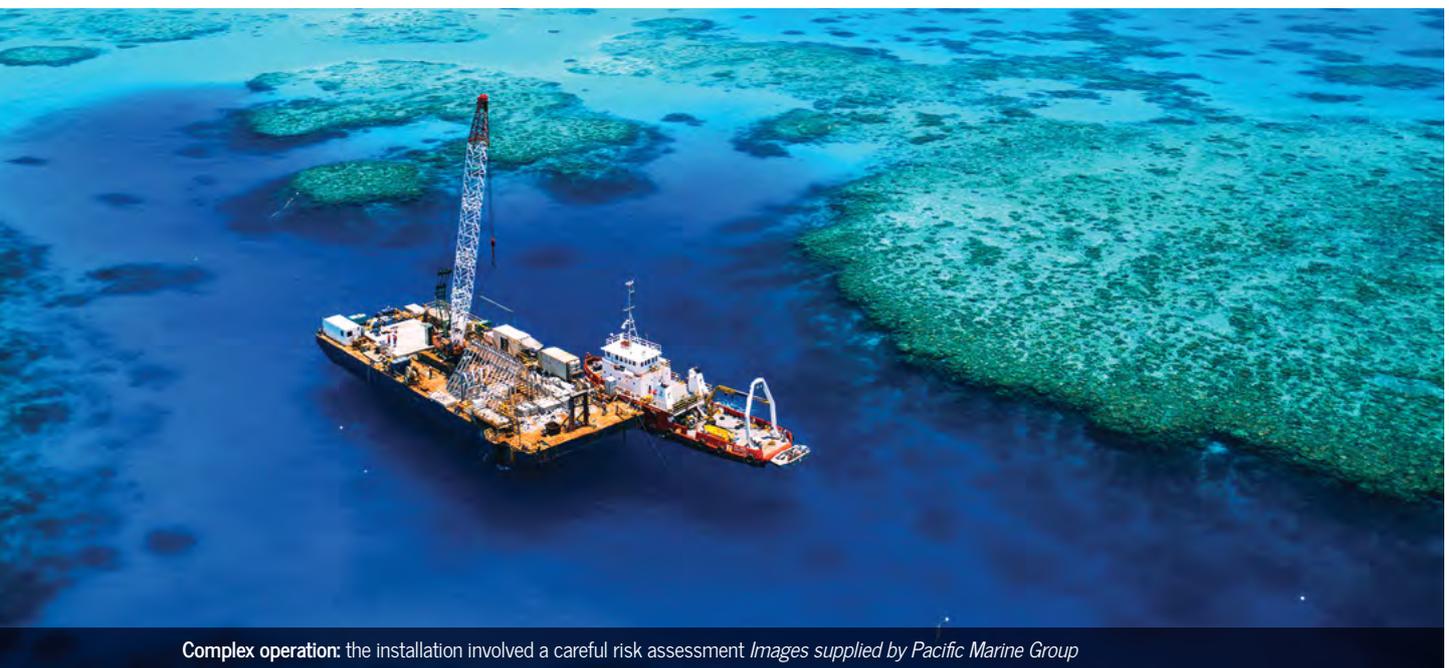
*The first of its kind in the Southern Hemisphere, the installation is designed to address issues of conservation and reef management, as well as functioning as a site for coral restoration and scientific research.*



**Nature takes hold:** where art and the marine environment meet – Image by Matt Curnock



**Mastermind:** Jason deCaires-Taylor at work – Image supplied by Jason deCaires-Taylor



Complex operation: the installation involved a careful risk assessment *Images supplied by Pacific Marine Group*

*Mitigation of these potential environmental risks included providing adequate buffer zone for vessels to anchor in, as well as building the artwork on land prior to installation, to minimise the construction time on the reef.*

**Dream build:** nature takes part in the setting – *Image by Matt Curnock*

surrounded by a fantastic healthy reef with a diverse fish community—people get to see world class art and a world class natural environment,’ Adam said.

Being so close to a healthy reef also posed challenges for the project team.

In preparation for the installation, site surveys were carried out to assess the potential impacts of the artwork and resulting visitors on the reef. These impacts included changes in natural lighting, noise, and water contamination such as oil spillage, in addition to the possible direct impact of vessel strikes. A magnetometry survey of the area also had to be carried out to look for unexploded ordnance leftover from World War II.

Mitigation of these potential environmental risks included providing adequate buffer zone for vessels to anchor in, as well as building the artwork on land prior to installation, to minimise the construction time on the reef.

The sculpture was created by British artist Jason deCaires Taylor, world-renowned for his underwater sculptures, including the first underwater museum comprising over 800 sculptures at the Cancún Underwater Museum off the coast of Mexico.

The first of its kind in the Southern Hemisphere, the installation is designed to address issues of conservation and reef management, as well as functioning as a site for coral restoration and scientific research.

Jason constructed the artwork out of stainless steel and concrete, which don’t leach out chemicals into the surrounding environment. Being lime-based, the concrete provides a settlement substrate for algae, coral and other invertebrates, which over time, will develop into an artificial reef and enhance the local marine habitat.

The artwork was also designed to withstand some of the most severe tropical storms in the region without disintegrating or being dislodged.

Local company Pacific Marine Group took the lead on installing the artwork. Using barge cranes, tugs and divers, the company planned to lower the greenhouse into the water in three stages, fixing it onto a concrete base.

It was a complex operation, supported by a comprehensive assessment of risks associated with different aspects of the operation, from lifting, vessel operations and the use of heavy machinery, to changing weather conditions, and even trips and falls. The mitigation approach was as extensive as the risk assessment itself, and included crew training, detailed briefing sessions and having qualified personnel on site at all times.



**Careful:** a worker secures the structure – *Image by Jason deCaires-Taylor*

The diving operations were also risk assessed to cover risks such as failure of breathing gas supply and possible shark encounters—all of which need to be monitored by deck crew.

According to Pacific Marine Group CEO Kevin Chard, the hardest risk to manage was the sea state—the combination of wind, waves and current, which impacted on safe anchoring in close proximity to the reef.

The barge and tugs were expected to be on the reef for up to a week, so it was important to have a period of calm weather with low winds in which to operate. Even then, the conditions were not always favourable.

'On occasions the tug and barge had to leave the installation site and anchor wide of the reef in case the anchors dragged and damaged the installed works or—in a worst case scenario—resulted in a grounding on the reef,' Mr Chard said.

The installation was completed in April 2020 and then officially opened in August with a small group of tourism operators licensed to take divers out to the site.

As part of the site's management plan, the site will continue to be monitored for any potential impacts on the reef, from either the artwork or visitors. In the event of the artwork being damaged—such as in the aftermath of a cyclone—MOUA has planned for such a contingency by getting quotes for salvage and paying a bond to cover clean-up operations.

The artwork has a design life of up to 25 years and at some stage in the future a decision will be made to either leave it there or remove it. By that time, the greenhouse will be a very different place indeed.

Adam Smith said fish life started moving into the greenhouse from the beginning and it is already home to algae and soft sponges. Looking to accelerate the process of colonisation, MOUA has permission to collect up to 500 samples of dislodged coral and plant them in the greenhouse to encourage further development.

It is hoped then that over time, the Coral Greenhouse will truly live up to its name as a place of growth and regeneration.

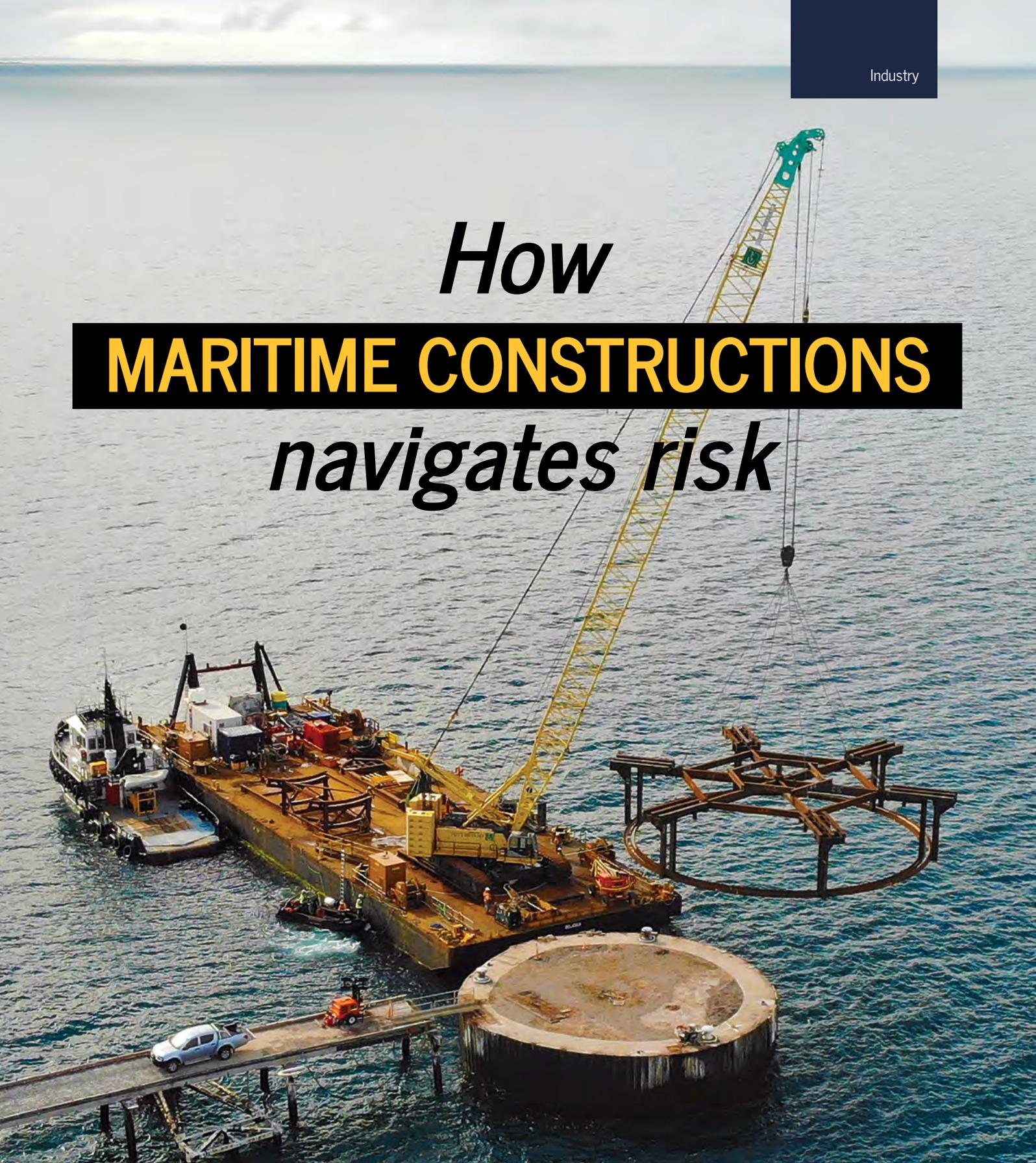
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Learn more about the Museum of Underwater Art at: [moua.com.au](http://moua.com.au)



**Above:** a diver explores the installation; a section of the installation is carefully lowered to the seafloor – *Images by Jason deCaires-Taylor*

# *How* **MARITIME CONSTRUCTIONS** *navigates risk*



Marine construction work involves a set of risks not encountered when doing onshore construction work. Justin Phillips, Asset Manager for Maritime Constructions, talks to *Working Boats*.

By Ron Aggs



**Monitoring risk:** (clockwise) Jack up barge *Resurgent* driving a pile at Thevenard, SA; Daily toolbox with the team; Cutter suction dredge *Pilbara Sawfish* dredging at Onslow, WA; Cutting pile to height Barmera Waste Station Murray River, SA – Images supplied by Marine Constructions



Based in Port Adelaide in South Australia and with a branch office in Perth, Maritime Constructions designs, constructs and maintains marine infrastructure—including dredging, navigation aids, jetties and wharves, sub-sea intake and outfall pipelines, boat ramps and marine fabrication.

Justin explained that working from floating plant introduces a broad range of risks in their line of work.

'Sea conditions coupled with limited geotechnical information and environmental sensitivities (marine life—fish, birds, plants and water quality) can also be dynamic and difficult to control,' he said.

'Oil or fuel spills or hydraulic hose bursts pose the greatest environmental risks, having a potential to impact marine life and water quality. We manage and mitigate these risks through the use of proprietary marine spill kits, biodegradable oils, and industry best practice risk assessments.'

'Then there are the weather conditions, which can change very quickly—for example, random wind gusts when pitching sheet piles, or changing seas during towing,' he added.

Justin said Maritime Constructions monitors daily and long-range weather forecasts, but they also rely on a jack-up barge that provides a safer, stable work platform.

Used on around ten per cent of projects, the barge has workable deck space of 24 by 17 metres on four legs that can extend down to the sea floor and be jacked up to raise the deck clear of the water.

Justin explained that even with the increased stability that the jack-up barge provides, the physical construction risks—such as crane lifts from barges—require extensive risk assessment and safety management.

'Some construction jobs are simple, light and easily executed, while others are large, heavy and complicated,' Justin explained.

'We manage the risks by understanding what we are lifting and the location,

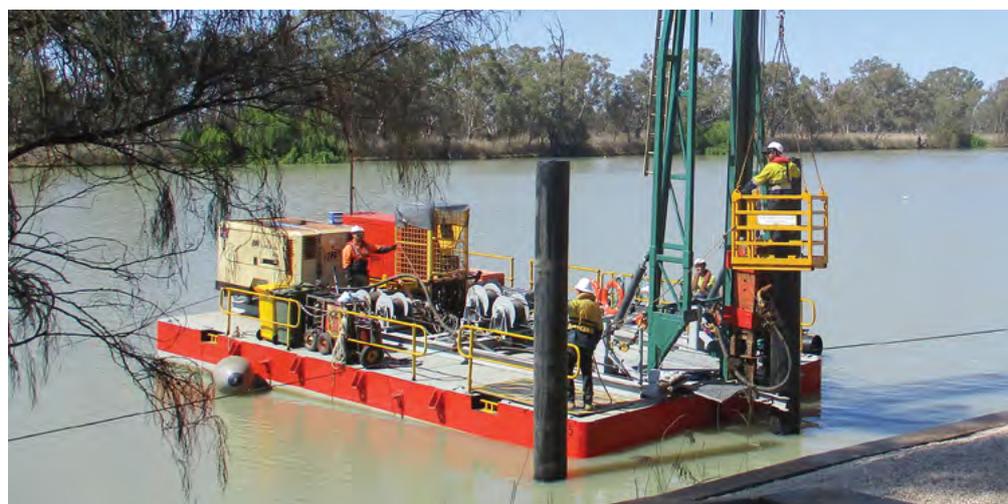
how the barge will react to weight distribution, and by carrying out trim and stability checks on the lift,' Justin said.

Maritime Constructions uses a risk matrix and hierarchy of controls to identify and mitigate risk.

When assessing each risk they look at the degree and type of impact each risk carries—for example whether it could result in injury or loss of human life; structural, social or environmental impacts; contractual implications; financial loss; legislative impacts or even reputational damage for the company.

Leading up to each project, managers, site and construction teams use these methods to assess the risks and jointly prepare safe work method statements, including safe work procedures and crewing competencies required for the job. These risk assessments and safety management plans also complement the safety management systems of each vessel being used on the job.

To ensure their safety practices stay relevant to the task at hand, each week the work method statements are



*Even with all the planning that goes into making sure they have identified and mitigated all the risks for a job, individual workers' misperceptions that working conditions are safe still tests this daily agenda.*

reviewed and updated by employees who meet before work to discuss the day's activities.

However Justin said that even with all the planning that goes into making sure they have identified and mitigated all the risks for a job, individual workers' misperceptions that working conditions are safe still tests this daily agenda.

Last November, while loosening a pipeline flange from an awkward position on the edge of a dredge, a worker lost balance and fell overboard when his spanner slipped off a bolt.

Fortunately, he was wearing a lifejacket and colleagues quickly pulled him back on board, but everyone agreed the danger of awkward positioning could have been averted by doing the job from a small tender, and the safety management system was updated to reflect this.

The incident also reinforced the value of their take-5 system, which

encourages workers to pause before any major or high-risk task to reassess better or safer ways of going about it.

'We also ask crew members to complete hazard observation cards during a job. It is not unusual to be working off a ninth revision of a safe work method statement by the end of an activity,' Justin said.

Reporting near misses helps AMSA improve safety across industry. Read more on page 38.

Maritime Constructions also recently implemented what they call 'quarterly focus areas' to increase attention to detail and surveillance.

Senior management and health and safety officers decide which risk areas need additional attention—in the last quarter the focus has been on lifting equipment, lift plans, chemical storage and emergency drills.

However Justin knows all too well that

developing an effective safety culture involves more than having all the safety documentation in order and conducting frequent checks.

To encourage safety practices from the ground up they encourage friendly competition between project sites to be the first in the quarter to achieve focus-area goals, and Justin says the teams quickly rise to the challenge.

'When you start pitting site against site they become quite competitive and there's a quick response to whatever the quarterly focus area is—the following week we start getting responses from teams,' Justin said.

'In addition to the pride of winning the quarterly challenge, the winning team gets a company-paid BBQ. Irrespective of whether there are five or fifty people on the winning site, they are catered for appropriately.'

[maritimeconstructions.com.au](http://maritimeconstructions.com.au)



# Keeping our seas safe and clean

People power: marine debris collected by volunteers – Image source iStock.com/NoDerog; Dean Jones, dedicated volunteer with Tangaroa Blue – Image supplied

The Tangaroa Blue Foundation is an Australia-wide not-for-profit organisation dedicated to the removal and prevention of marine debris—a major environmental issue worldwide. AMSA and Tangaroa Blue have been collaborating to address marine debris since 2007. Grace Boglev spoke to Dean Jones, a coxswain who has worked in the commercial fishing and diving industries in Western Australia for almost 40 years and is one of the foundation's original volunteers.

## How did you get started with Tangaroa Blue?

CEO and co-founder of Tangaroa Blue Heidi Tait started the initiative back in 2004. At the time we were working together. Heidi would go scouting for rubbish on the beach, and she'd talk about how much rubbish there was, and I joined her from there.

I spend a lot of time on, and in, the water and I often come across beautiful beaches polluted with rope, nets and plastic bottles. Plastic bags don't just choke and kill sea animals, they get wrapped around outboard motors and props, so it's dangerous for us as well as the environment.

## In your time with Tangaroa Blue have you seen much of a change in how people in the maritime industry view environmental sustainability?

I've seen a lot more focus from business owners. I think they understand that it's part of their future to try and keep these places clean. When you do your qualifications there's a big focus on

making sure you're not going to pollute and if you get caught putting something in the water, there's a penalty.

The next big priority for Tangaroa Blue is finding who is responsible for abandoning the waste we clean up. Heidi's trying to track down the origins of a lot of this rubbish—such as where nets come from, who has been dropping bottles over the side—that's a big job.

I think we need to increase penalties for people—especially commercial people—who are found polluting. We have training about waste management and we have to pass tests. I don't think there's any excuse for people working in the commercial industry who pollute.

## Is there a particular instance that stands out while you've been volunteering with Tangaroa Blue?

A lot of drift nets that are set way out to sea end up on our coasts. I remember a great big net was pulled off Wyadup beach in Western Australia. Heidi coordinated the effort and the Navy took

on the removal because it was so big—I think it was one kilometre or so of net. It would have been incredibly dangerous if someone had run over that in their boat.

## What would you tell someone considering volunteering with Tangaroa Blue?

Stop thinking about it and do it! I've been passionate about it since I started, and I've tried to instil that in my two boys as well. We've made a family rule that whenever we go to the beach, we make sure we pick up rubbish before we leave.



Interested in joining Tangaroa Blue?  
[tangaroablue.org/about-us/get-involved](http://tangaroablue.org/about-us/get-involved)

You can also help by reporting marine pollution directly to AMSA  
[amsa.gov.au/marine-pollution](http://amsa.gov.au/marine-pollution)

**NEW**

# STOW IT, DON'T THROW IT STICKER NOW AVAILABLE

All waste is particularly harmful in the marine environment. You can help by sorting and separating all types of waste on board your boat, so that each type of waste can be recycled or disposed of appropriately.

Contact your local marina, boat harbour, port or terminal office to find out what waste collection and disposal facilities are available.

Don't forget to report any marine pollution incident to help minimise damage to the environment. If you witness a vessel or seafarer polluting, or see pollution in the marine environment that you think might be from a vessel, you can make a general marine pollution report.

Call 1800 641 792 or visit [amsa.gov.au/marine-pollution](http://amsa.gov.au/marine-pollution)

## STOW IT, DON'T THROW IT

DISCHARGE OF GARBAGE INTO  
AUSTRALIAN WATERS IS PROHIBITED

KEEP GARBAGE ON BOARD  
UNTIL YOU REACH THE SHORE  
VIOLATIONS MAY RESULT IN PENALTIES

All discharge prohibited within 3nm from the nearest land, which includes the Great Barrier Reef (GBR) area and waters to 3nm from its outer boundary

Discharge prohibited outside 3nm from the nearest land and the GBR outer boundary

- except food wastes processed to less than 25mm

Discharge prohibited outside 12nm from the nearest land and the GBR outer boundary

- except unprocessed food wastes
- MARPOL Annex V details the limited exceptions that may apply to the discharge of other ships' garbage.

**REPORT ALL MARINE POLLUTERS**  
Call 1800 641 792 or visit [amsa.gov.au/marine-pollution](http://amsa.gov.au/marine-pollution)



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For more information on the nearest land under MARPOL, including the GBR area, please see [www.amsa.gov.au/nearest-land-under-marpol](http://www.amsa.gov.au/nearest-land-under-marpol)

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# General safety duties for vessel owners

Owners of commercial vessels are varied across the commercial vessel industry—from one-owner-operator scenarios, to corporations leasing vessels to other corporations. Irrespective of the arrangements in place, the legal responsibilities are the same for all owners.



Because no two operations are alike, various standards and requirements exist to address the basic safety requirements across the commercial vessel fleet around Australia.

The general safety duties recognise that operators, masters and crew are best placed to identify and manage risks on the vessel, and encourage

the development, maintenance and continuous improvement of a safety culture by all parties in the domestic commercial vessel industry.

The general safety duties also create a 'chain of responsibility' whereby obligations are placed on all persons who contribute to the safety of a vessel and its operation—from a boat or equipment designer, builder, manufacturer, to the operator, master,

crew, passengers, and any other person whose actions may place the safety of the vessel, or persons on board the vessel, at risk.

Owners of domestic commercial vessels must comply with the number of general safety duties set out in the national law. These duties are fundamental in ensuring the safety of the vessel and its operation.



Safety culture: crew conducting mandatory safety checks on board a fishing vessel – Images by Robert Lang

## Top five general duties of the vessel owner

### 1. Provide and maintain the vessel so that it is—so far as is reasonably practicable—safe.

Make sure the vessel meets construction and equipment standards, survey requirements and is well maintained. Grandfathered vessels may not be in survey, but these vessels must still be fit for purpose, and this must be addressed in the vessel's safety management system.

### 2. Provide information, instruction, or supervision to people on board the vessel as necessary to ensure their safety.

Ensure crew are appropriately qualified, are able to implement the vessel's safety management system, including safety drills and crew inductions. For vessels that carry passengers, a safety induction needs to be provided to each passenger about relevant operational and emergency procedures, as soon as practicable after the passenger boards the vessel.

### 3. Implement a safety management system that ensures the vessel and its operations are—so far as reasonably practicable—safe.

Assess the risks associated with the vessel and its operation and implement ways of eliminating or minimising those risks.

### 4. Do not operate the vessel, or cause the vessel to be operated if it is unsafe.

Ensure the vessel is fit for purpose and required maintenance is carried out before setting out on the water.

### 5. Do not prevent or restrict the master of the vessel from making or implementing a decision that, in the professional opinion of the master, is necessary for the safety of a person or the vessel.

While in many cases where the owner and the master are the same person, this is not always the case. Where this is the case, the owner must not prevent or restrict the Master's discretion to implement decisions that promote safety.

Separate general safety duties apply to the master of a vessel. In small operations where the owner and the master may be the same person, they must be aware of and meet the responsibilities that apply to both roles.

AMSA takes breaches of the general safety duties very seriously. It's up to each vessel owner to know their safety duties and how to comply with them.

Breaches can lead to infringements, court fines, or even prison sentences in the most serious cases.

Domestic commercial vessel owners are also required to comply with state, territory or commonwealth work health and safety laws, as well as local waterways management laws.

#### More information

Read more about the general safety duties for domestic commercial vessels at [amsa.gov.au/generalsafetyduties](http://amsa.gov.au/generalsafetyduties)

## Key concepts

The *general safety duties* are set out in Part 3 of the national law. The duties require each person who is engaged with a domestic commercial vessel and its operations to do all that is reasonably practical to ensure the safety of the vessel and its operation.

*Owner* of a vessel includes a person who has a legal or beneficial interest in the vessel (other than a mortgagee) and a person with overall general control and management of the vessel.

*Reasonably practicable* means what is, or was at a particular time, reasonably able to be done in relation to ensuring safety, taking into account and weighing up all relevant matters. What is 'reasonably practicable' is determined objectively. This means that a duty-holder must meet the standard of behaviour expected of a reasonable person in the duty holder's position.

*Unsafe vessel* means a vessel that is likely to endanger any person for any reason, including because of any of the following:

- the condition or equipment of the vessel
- the manner or place in which cargo or equipment on the vessel is stowed or secured
- the nature of the cargo
- the overloading of the vessel with people or cargo (including the submergence of the vessel's load line)
- the number of its crew or the qualifications of its crew or master.



# Supporting essential workers *delivering essential services*

Supported: Austral Fisheries crew – Image supplied

During the COVID-19 pandemic many seafarers have played an essential role in maintaining the vital flow of goods like food, despite the added pressures caused by the pandemic and what this means for them personally. *Working Boats* spoke to Oliver Krcoski at Austral Fisheries to find out how the pandemic has affected crew on their vessels and how Austral Fisheries mitigated the risks and concerns.

By Sarah Cameron

Based in Perth, WA, Austral Fisheries runs three separate operations—the Southern Ocean, Northern Prawn and Timor Reef fisheries.

Crew working the Timor Reef fishery out of Darwin are out at sea for eight or nine days at a time, but the Prawn seasons can keep crew away from their families for up to 16 weeks.

Austral Fisheries Health, Safety and Environment Advisor, Oliver Krcoski, said that when COVID-19 emerged the crew's immediate concern was their livelihood and getting out to sea.

'As COVID-19 came to Australia and started spreading before the start of the first prawn season of the year, there was a lot of anxiety amongst our

personnel about whether they would go out to sea at all,' he said.

'As a company, we really had to assess that risk. It was clear that the success of our operations depended on how well we could manage the COVID-19 threat.'

'We have a risk matrix and a severity matrix that we use to analyse the potential impacts of the risks in the business and our operations.'

'As we have learned more about the virus and increased testing, our risk management systems and processes have evolved, but when COVID-19 emerged we knew so little about it there were no test kits to give us any certainty, so it was a difficult risk to control initially,' he said.

Once Austral Fisheries made the decision to keep operating, they moved quickly to develop and implement policies and procedures to get crew out at sea without recording any cases of the virus.

They prepared COVID-19 information packs for crew, outlining the risk assessment that needed to be made before people boarded vessels, the boarding procedure, the required PPE, and information from the Australian Government Department of Health about COVID-19.

'We got in contact with everyone early on to inform them they would be flying in at least two weeks prior to departure, so that we could isolate and monitor them during that period,' Oliver said.



*All kinds of challenging situations out at sea have become a little bit more challenging with COVID-19.*

— Oliver Krcoski

'A couple of crew couldn't get there in time to quarantine and we unfortunately had to leave them behind to protect the rest of the crew and the operation.'

But once crew had done the quarantine and got out at sea where they knew the drill, the distraction generally turned to what was happening away from the vessel and how they would get home.

'At sea crew were worried about their family and friends back home—everyone has someone back home that might have lost a job or suffered in some way with the situation being so uncertain,' he said.

When various states closed their borders, this initially complicated matters for Austral Fisheries, which operated between the Northern Territory and Queensland, but because they were able to demonstrate their planning and risk mitigation, they had no trouble getting an exemption to cross into the Northern Territory.

As the end of 2020 approaches, the closing of borders as governments have struggled to deal with the pandemic is still a cause of anxiety for crew and shore-based staff working to support the crew.

'We have had examples of interstate crew being denied access back to their own homes, with nowhere else to go after completing a trip at sea, and crew not knowing whether they would be able to get home until just hours before arriving back in port,' Oliver said.

'A couple of the guys had newborns coming and were worried about whether they would get home in time and whether the hospitals would let them see their families,' he said.

'We have done our best to absorb as much of that stress as possible by taking care of the administrative work involved in crossing borders, such as writing letters from the employer to say they had been working in the essential services industry. I think the crew have found that quite reassuring—but most of the time this just shifts the burden from one person to another, which is stressful for all involved.'

Oliver said that despite the additional burden caused by COVID-19, none of the crew have showed signs of being stressed to the point of it impacting on the way they worked or the level of safety they exercised.

'We were very aware as a management team that it could impact their mental health and ability to stay focussed and we have done our best to alleviate this stress by getting exemptions for them to cross borders to get home,' Oliver explained.

'Last year we also gave formal safety training to all our skippers, which also looked at mental health impacts on crews, so our skippers are somewhat aware of when someone is concerned and they report that back to us. If people want to get off the vessel for whatever reason, we are able to arrange that quickly,' he said.

Oliver explained that all kinds of challenging situations out at sea have become a little bit more challenging with COVID-19—crew not being able to get off the vessel during port stops and dealing with general health problems requiring medical assistance—but he said the crew have handled it well.

He added that as an essential service, some government assistance has done

## Working with COVID-19

Being a seafarer can be demanding at the best of times, without added pressure from COVID-19.

The possible distraction, stress and fatigue brought on by unfamiliar and changing tasks, extended working hours, competing priorities, concern for crew, staff or relatives—who may be at risk or vulnerable in the face of COVID-19—can all have a negative impact on wellbeing and increase error and risk on the job.

Keep an eye out for crew and take action to provide support if you notice any of the following.

- Stress and signs of poor mental health
- Distraction and on-the-job error
- Fatigue.

Eating properly and getting adequate sleep is key to handling increased pressure

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Beyond Blue Coronavirus Mental Wellbeing Support Service:  
[coronavirus.beyondblue.org.au](https://coronavirus.beyondblue.org.au)

a lot to alleviate their concerns and that had a flow on effect for their crews and other personnel.

'At the start of the season we had to scale back some of our group training and information sessions to maintain social distancing measures but AMSA helped ensure our operational continuity by granting exemptions, including extending qualifications when people couldn't renew them on time, and exemptions for some low-risk survey requirements,' he said.

'Considering that when COVID-19 emerged one of the cards on the table was to call the season off all together, we are grateful we have been able to keep our crew out of harm's way and keep operating.'

# Tools of the SMS trade



Demonstrating the new Offshore SMS app: Steve Fraser of Offshore SMS (right) with Ian Melrose from MelShel Oysters on Tasmania's east coast.

Online tools are making it easier for busy vessel operators to stay on top of their safety management systems (SMSs). *Working Boats* looked at a couple of these SMS support aids to find out what they do and how they can help.

By Simon Enticknap

Do you have an SMS sitting in a folder somewhere gathering dust? A compliant SMS needs to be a living document, regularly updated in response to changes in work practices. That's not always easy with a paper-based document, requiring effort (as well as a printer) to incorporate new safety procedures, make updates or log any operational changes.

To address this issue, some commercial vessel operators are moving to cloud-based solutions where their SMS is kept online—accessible by all the crew at all times—and incorporates smart functions such as inspection alerts, checklists and real-time logs.

## Offshore SMS

One such system is *Offshore SMS*, developed by Hobart-based abalone diver, Steve Fraser. Struck by the amount of paperwork involved in maintaining an SMS, Steve started to look for alternative methods of record keeping. Fortunately, he is also a software developer so he decided to move his SMS online, creating a simple website where he could store and update it as needed.

Soon other fishers started to take an interest and so *Offshore SMS* was born

as a commercially-available cloud-based storage service. Today it is used by hundreds of vessels, offering a mix of free and paid-for plans suitable for operations ranging from single operators up to large fleets.

Features include a step-by-step guide for developing an SMS from scratch, pre-start checklists for daily safety routines, crew induction checklists and maintenance logs.

Offshore SMS is now available as an app from the Apple App Store or Google Play.

## A maintenance Fiix

Tracking vessel maintenance is a key aspect of any active SMS, not only recording when work is performed on a vessel but also ensuring that scheduled maintenance is carried out when required.

To assist with this task, the Commercial Vessels Association (CVA) developed an industry-specific template for use with the popular Fiix computerised maintenance management system (CMMS).

Fiix is a cloud-based service used by many companies around the world to manage their maintenance needs. It enables users to list their mechanical

assets, including spare parts, and log any maintenance work when it is carried out. It can also trigger alerts when scheduled servicing is needed and generate reports on machine utilisation.

The service ranges from a basic free option up to premium paid-for services. It is scalable from a single operator up to multiple sites.

The CVA pre-formatted template covers the regular maintenance schedules for machinery and equipment typically used on a commercial vessel, which can then be tailored to suit individual operators.

The template also includes a pre-populated list of safety equipment for commercial vessels. Used in conjunction with Fiix, this not only serves as a handy checklist of what's onboard, but also notifies users of upcoming safety inspections and expiry dates.

Such online tools can provide the foundation for building and reviewing your SMS, so long as they are tailored to address the safety requirements of your individual operation and not used as a one-size-fits-all solution.

[offshoresms.com.au](http://offshoresms.com.au)  
[commercialvessels.org.au](http://commercialvessels.org.au)

# Level flotation

The benefits of level flotation should make it an easy choice for those in the market for a vessel or looking to increase the safety of their existing vessel.

By Ron Aggs and Sarah Cameron

Based on an article published in the *Townsville Bulletin*, January 2020.



Vessels with level flotation have buoyancy installed to national standards high up in the extremities, allowing the vessel to float level with the waterline if it becomes swamped or flooded. Whether the vessel capsizes or stays upright, level flotation offers a number of advantages for people who find themselves in this predicament.

It's far better to be sitting up to your waist in water or on top of an upturned hull, than struggling to hold on to a submerged hull. It also reduces the risk of succumbing to dangerous marine fauna, ocean currents and hypothermia, as illustrated by the ordeal of Townsville residents Joe Goicoechea and Noel Hyde back in 1991.

Joe and Noel spent two days submerged to their hips, adrift in a borrowed three-metre dinghy they used to pursue their larger fishing boat after its mooring on a mango tree broke in White Rock Bay, Cape Cleveland.

After two hours' rowing, they almost got close enough to the runaway to

retrieve it but capsized the dinghy, then righted it but had lost the oars.

At this point, the dinghy's level flotation played a key role in the two men's survival as they drifted on the current from Cleveland Bay, wondering if they would make landfall.

If not for the refuge of the dinghy, fatigue could have rendered Joe and Noel incapable of holding on, causing them to float away, long before the onset of hypothermia.

The polyurethane flotation under the seats had done its job exactly as designed, keeping the flooded dinghy level. Although Joe and Noel sat half-submerged, the dinghy reduced their risk of drowning and provided a barrier against sharks and other marine life below.

Another advantage of level flotation is that from inside your vessel, you have better access to your safety equipment (flares, radio, distress beacon or torch) and perhaps even the chance to bail out water. If you have activated your emergency beacon or there's a search

operation underway, your vessel is also a much easier target for the response team to spot in the water.

In Joe and Noel's case, there was no safety equipment in the dinghy with which to call for help, but their families had alerted authorities when they didn't return home. Eventually, a search helicopter spotted them after they washed up on Acheron Island, approximately 80 kilometres northwest of their starting point.

If your vessel does not have level flotation, make sure you have thought about a situation like Joe and Noel's and be prepared for an emergency. Vessels without flotation can sink quickly if swamped, capsized, or flooded. At best, they will submerge stern-first with only part of the bow above the water.

Ensure your safety equipment is well maintained and accessible in a buoyant, waterproof container. And make sure you know how to use it. Difficult conditions, no light and competing priorities can put even the best safety equipment out of action.



# Counting on passenger safety

Every passenger counts: Manly Fast Ferry carries passengers safely across Sydney Harbour; Passengers embarking on Manly Fast Ferry – Images supplied

**Following changes to passenger safety requirements on 31 May 2020 *Working Boats* talked to the operators of two very different ferry services in New South Wales to find out how they manage the challenges of keeping an accurate count of passengers on board their vessels. Could any of these practices be applied to your operation?**

By Simon Enticknap

## Manly Fast Ferry

On Sydney Harbour, digital technology is playing a key role in monitoring passenger numbers on one of the busiest commuter routes in the country.

Every day, the Manly Fast Ferry service carries thousands of passengers on the 20-minute crossing between Manly and Circular Quay. During peak periods, there can be up to six departures an hour from the wharves, each ferry having just a few minutes in which to disembark and embark up to 400 passengers. It's a high speed, fast turnaround operation with little room for error.

Three years ago, the operators of the service, NRMA, introduced an onboard

electronic passenger number recording system that enables the vessels' Masters and designated person ashore to get an instant overview of how many passengers are on board each boat.

Gavin Cooper, Marine Safety Business Partner at the NRMA, explained that as passengers embark, a crew member near the gangway counts each person. The data is then entered into an online system in the wheelhouse and is immediately available to the skipper as well as shore-based personnel who can log into the system.

'As soon as we leave a berth we can instantly know how many people are on the boat. We've never had to use that information in an emergency but it's always there,' Gavin said.

The digital passenger number recording system has been standardised throughout the company's operations. In addition to the Manly-Circular Quay fast ferry service, NRMA also operates a number of other ferry services on the harbour, including a Manly-Darling Harbour service, a two-hour 'hop-on, hop-off' service around the harbour, as well as tourist cruises such as whale watching. Altogether, the fleet comprises 12 fast catamarans ranging from 19 to 33 metres in size.

On the tourist cruises, passengers are counted both on and off the vessel. In the unlikely event that the numbers don't tally after an offshore cruise such as whale watching, staff would follow a set of procedures that escalate from an immediate recount, up to what would eventually be a full AMSA search.



Fortunately, it's never come to that—typically, any discrepancy is the result of somebody still being on the boat somewhere or a miscount, which can be quickly resolved. Offshore cruises also have a passenger manifest that is matched to the passenger count for extra assurance.

Gavin explained that digital passenger number recording is just one part of the company's safety management system.

'The safety management system—which is extensive to capture the conditions of their complex operation—has also been digitised and made searchable so that in any situation, such as a man overboard, a crew member can type in the appropriate keyword and instantly find the correct safety or emergency procedure,' he said.

'This also makes it easier to update and to pass along new information for training purposes.'

'Taking everything online has really streamlined safety for us and made it accessible.'

*The safety management system ... has also been digitised and made searchable so that in any situation ... a crew member can ... instantly find the correct safety and emergency procedure.*

— Gavin Cooper

While technology is a useful tool in managing passenger safety, Gavin also highlights the importance of crew training in maintaining a safe operating environment.

'Nobody is allowed near operations until they've been through our own comprehensive training program, which we've developed over the years in conjunction with AMSA and other stakeholders,' he said.

A policy of promoting staff from within the company also helps to foster a shared safety culture, which extends from the general purpose hands all the way up through the ranks to the vessel Masters.

### The Riverboat Postman

North of Sydney on the Hawkesbury River there's a ferry service that runs at a very different pace compared to the Manly Fast Ferry.

The Riverboat Postman service based in Brooklyn, has been running since 1910, servicing the local communities on the Hawkesbury River only accessible by water. Every weekday, the ferry makes a three-hour round trip of the various remote villages, delivering mail and providing a vital communication lifeline to the 600 residents who live on the Hawkesbury.

As well as being an official Australia Post service, it is also a popular tourist cruise with up to 100 passengers going on the round trip to explore the Hawkesbury.

Since 2012, the service has been run by Hawkesbury Cruises, which also runs day cruises and other ferry services. The company operates three vessels, two catamarans and a monohull ranging from 15 to 25 metres.



**Accurate passenger numbers:** Riverboat Postman vessel *Zarapito* at the train bridge on the Hawkesbury; passengers embark on the vessel; passengers disembarking the ferry onto the wharf—*Images supplied*



For the transfers to Milson Island, Broken Bay camp and Dangar Island, managing passenger numbers is relatively straightforward. Everybody is click-counted on board and then remains seated at all times. It is a very controlled environment, making counting much easier.

However, for the Riverboat Postman run, the nature of the service poses a different challenge. With numerous stops along the way allowing people on and off, as well as up to 450 items of mail to deliver, there's the potential for crew to get distracted and miss someone.

'There's always going to be human error,' says Justin Pigneguy, Hawkesbury Cruises owner.

'Even if you have someone counting using a clicker counter, which is the method that's been used for years, it's not always 100 per cent accurate. You've only got to take your eyes off the gangway for two seconds and you can't be sure you've counted everyone,' he said.

To safeguard against such errors, the company uses a three-part system.

Passengers who buy tickets are given a numbered boarding pass which they hand over to a crew member on the gangway. At the same time, the skipper separately counts the number of passengers boarding.

Before departure, the number of passes handed out and received, plus the manual count must all tally, otherwise a recount takes place. The final number is recorded in the ship's log and the shore log. During the journey, passengers getting on and off at different stops are also recorded in the logbook.

'You have to be 100 per cent sure of how many people you have on the boat before you leave the wharf. We've found that this numbered ticketing system works really well,' Justin said.

To ensure all passengers are present at the end of the voyage, skippers have been trialling the use of a manual hand clicker to count passengers as they disembark.

'Skippers have reported that this system works well. They position themselves in the wheelhouse or other location that provides a good vantage

*You have to be 100 per cent sure of how many people you have on the boat before you leave the wharf. We've found that this numbered ticketing system works really well.*

— Justin Pigneguy

point, without getting in the way of passengers as they get off,' Justin said.

During the cruise, passengers remain seated during the initial safety briefing but are then free to move about the vessel. To date, there have been no incidents of passengers going missing but, in the event that it does happen, the crew have a set procedure to follow.

This includes quickly identifying who is missing and when they were last sighted, maintaining an open communication line with the shore-based manager at all times, retracing the route taken and informing the local water police and marine rescue of a potential man overboard.



Safety

Justin paid credit to his crew members for the fact that there have been so few safety incidents during his time on the Riverboat Postman, particularly given the advanced years of many of the passengers.

Training also plays an important role in this regard, with the company running monthly drills—either underway or at the wharf—for all skippers and deckhands. One of the most useful, says Justin, has been teaming up with local rural fire services to run training drills on the vessels.

‘We do training with them using portable fire extinguishers so the crew get an idea of what it’s like to fight a real fire. It’s been really invaluable to get that experience.’

**More information**

Regulatory changes aimed to improve passenger safety on domestic commercial vessels:

[amsa.gov.au/improve-passenger-safety](https://amsa.gov.au/improve-passenger-safety)

Learn more about operational areas at: [amsa.gov.au/service-categories](https://amsa.gov.au/service-categories)

**Regulatory requirements concerning passenger counts**

AMSA introduced a series of changes to regulatory requirements on 31 May 2020 to enhance passenger safety on domestic commercial vessels carrying passengers.

From 31 May 2020 passenger vessel operators must do the following:

- Have a procedure in their safety management system that provides an effective and verifiable means of passenger monitoring to ensure the master of the vessel is able to find out the number of passengers on board the vessel at any time.
- Have an emergency procedure in their SMS for responding to a situation where a passenger is unaccounted for.
- For certain types of operations, have a procedure for counting passengers at specified points to ensure an accurate number of passengers embarking and disembarking the vessel. This will include a count:
  - at or around the time passengers

embark and disembark the vessel at the start and end of voyage, or at an intermediate stop, and

- before departing any point where passengers have disembarked for a water activity such as diving, snorkelling or swimming

- Record passenger counts in the vessels logbook.

The types of operations where a passenger count is required to be undertaken at embarkation and disembarkation are:

- Class 2 vessel that is permitted to carry passengers or a Class 1 vessel that is permitted to carry no more than 75 passengers, and
- is engaged on a voyage of at least 30 minutes scheduled duration and no more than 12 hours scheduled duration, and the vessel is not scheduled to stop for embarkation or disembarkation in the first 30 minutes, and
- is operating in B, C or D water, or E waters outside of daylight hours.

# DEALING WITH **FIRE**

When Tasmanian Skipper Warwick Trelloggen set out on a week-long fishing trip off the North West Coast of Tasmania back in 2017, the last thing he expected to tackle was fire. Warwick and vessel owner Peter Smith spoke to *Working Boats* about the fire that broke out on board *Japara* and why being prepared is critical to your response. By Sarah Cameron



Before: Warwick and his 11-year-old son on the day of the fire — Image supplied

Seven days into a fishing trip beyond the North West tip of Tasmania into the treacherous Bass Strait, skipper Warwick, his two crew and his 11 year old son were making their way back home through Hope Channel with a good catch—when the unexpected happened.

'We were steaming between Hunter Island and Three Hummock Island and the vessel started to die down in revs, which I thought was a blocked fuel filter,' Warwick said.

At the same time Warwick's son had been watching TV and it had turned off, leading Warwick to deduce there had been a fuel issue, causing a problem with the genset and the mains.

'I threw the anchor over the side so we didn't drift ashore, just in case there was a fuel issue. By that time the engines had stopped—we had lost power as well,' he said.

Warwick radioed a mate skippering another vessel, which was travelling around the top side of Three Hummock Island to let him know they were experiencing issues.

*'My crew and I kept working to try to put the fire out using the fire suppression system. I thought I had the fire under control, but it had flared up again.'*

— Warwick Treloggen

Thankfully Mary Kay at Smithton Radio Base overheard the conversation and notified the Police, which is just as well because the situation that unfolded next left Warwick calling on all his knowledge, experience and cool headedness to keep them safe.

'I opened the engine room hatch and realised a fire had broken out—the engine room was full of smoke,' he recalled.

'The first thing that went through my mind was safety—to try to keep everyone calm. I told my son to put on a lifejacket, go up to the bow and stay there until I instructed him otherwise.'

'I went down the ladder into the engine room and sprayed the fire extinguisher around, but there was just too much smoke and I jumped back up and shut the engine room hatch.'

'I got the crew to help me take the life raft off the back of the wheelhouse

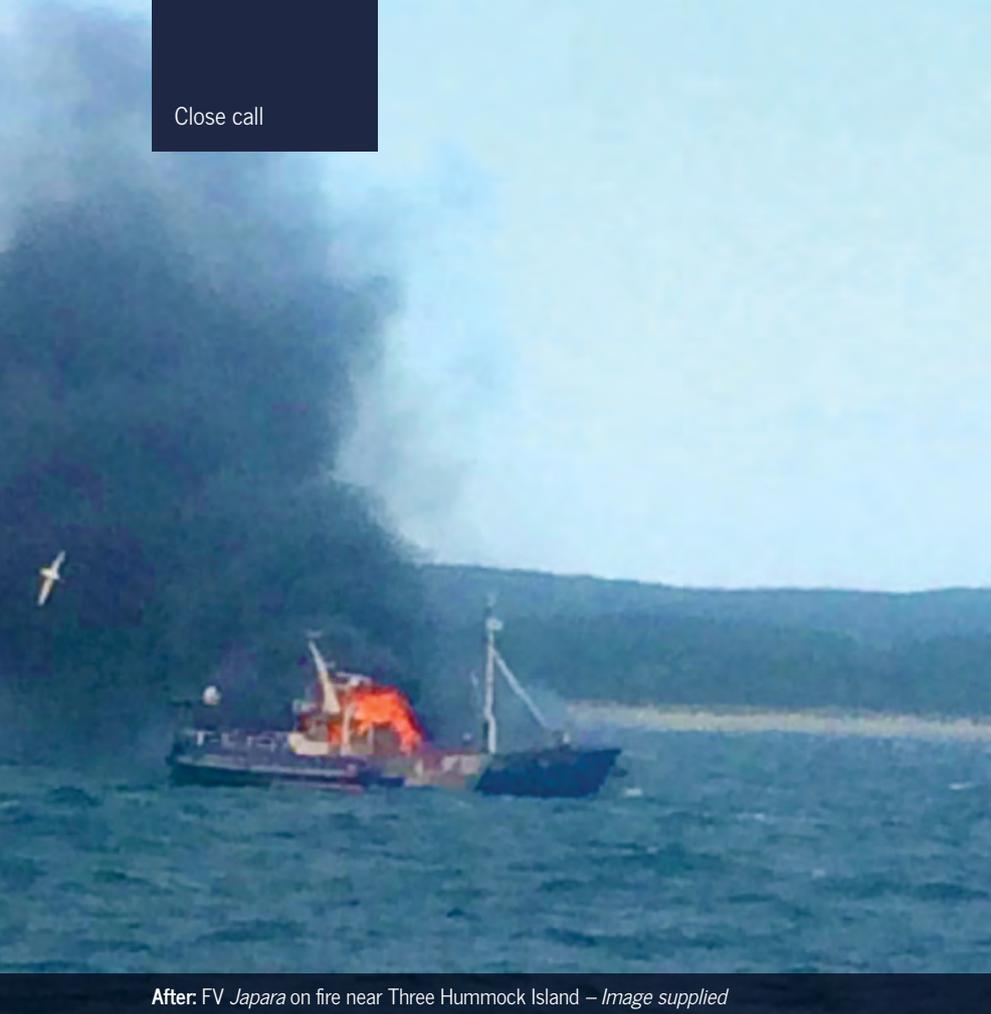
and sit it on the back deck in case we needed to evacuate,' he said.

'My crew and I kept working to try to put the fire out using the fire suppression system. I thought I had the fire under control, but it had flared up again.'

*Japara* had a long engine room that went all the way back under the galley and the fire had got in behind the fridges and the stoves where Warwick and his crew couldn't reach. By then the heat and smoke were getting hard to deal with.

Vessel owner Peter Smith was ashore the day it happened, anxiously taking any news he could get as the situation unfolded.

'They had four fire extinguishers plus the CO<sub>2</sub> on board. Warwick was convinced he had the fire out using the CO<sub>2</sub> system but then when I got to him on the phone he said he could still hear it crackling up in the cavity of the



After: FV *Japara* on fire near Three Hummock Island – Image supplied

wall in the galley—he was out of all options,’ Peter explained.

‘Photos were being sent back to me of the burning vessel from the other vessel that had just arrived on the scene after Warwick called—I could see the fire was intense at that stage.’

Meanwhile Warwick had determined the time had come to abandon ship.

‘It was too hot to stay on deck, the galley was engulfed in flame. It was time to get off,’ he recalled.

‘We had to run around to the back of the wheelhouse to grab the life raft and move it to mid-ship. The windows were cracking and popping out—if we hadn’t moved it when we did we wouldn’t have been able to get into it.’

Warwick’s primary concern while abandoning ship was getting his son in the life raft.

‘I said to him, “I’m going to grab you and throw you in, you don’t have to worry about trying to step in.”’

‘We put the life raft in the water on the opposite side of the boat to where the

wind was coming, but then we had trouble getting away. When we had untied everything and cut the rope, we started moving back through the smoke,’ Warwick said.

‘My son, who was on the back end of the raft, ended up in the smoke and he thought the raft would melt because of the heat as we drifted back down alongside the boat.’

But luckily the life raft then drifted away from the boat and they paddled their way to Three Hummock Island where they were rescued later that evening by the Westpac helicopter.

*Japara* was lost.

Warwick said the whole incident happened within about 40 minutes.

‘Until you get put in that situation you don’t really know or realise what it’s like and how you will react,’ he recalled.

‘Some people panic—you don’t know if this will be you. When all hell breaks loose, all that rote learning, drills and training you have done helps you go into autopilot,’ he added.

*‘Know your emergency procedures, stow your safety equipment in a location that’s easy to access and make sure your crew are aware of where its stowed and how to use it.’*

— Warwick Trelloggen

‘You have to keep calm and collected and think about what’s going on. Safety comes first in a situation like that—for your crew and yourself.’

Peter Smith credits the way Warwick went about dealing with the situation.

‘Priority number one is the protection of the crew—you can replace boats, but you cannot replace people’s lives,’ he said.

But he added how shocked they were that something like this would happen.

‘The boat was about 45 years old, but the surveys were up to scratch and the maintenance on the boat was second to none. Over the last eight or nine years we had replaced the galley and the wheelhouse, new wiring, new electronics ...’ he said.

‘If Warwick had a list of jobs to be done, we’d do the maintenance so we could get the boat back to work.’

Warwick said a lot of people have since asked what he recommends doing to avoid that situation, or to help in the event of a similar emergency.

‘You need to be as prepared as possible—you don’t know what can happen. Know your emergency procedures, stow your safety equipment in a location that’s easy to access and make sure your crew are aware of where it’s stowed and how to use it,’ he added.

‘Thankfully my son had a PFD on—I always made him wear one when on deck.’

Medical evacuation: VH-IPE holding position before winch pickup from container ship *Rio Madeira* – Images supplied

## Risk assessment in MEDEVAC operations

A risk assessment is carried out in all emergency response operations to ensure they are conducted safely. Medical evacuation—MEDEVAC—operations from vessels at sea are among the most complex. By Luke Brandley

On 6 May 2020, the AMSA Response Centre (ARC) received a request for a MEDEVAC from a foreign rescue coordination centre.

The master of the container ship *Rio Madeira* had contacted their national rescue authority requesting urgent medical evacuation of a crew member who had injured their hand during a Trans-Tasman voyage.

At the time of the request, the vessel was over 270 nautical miles east of Sydney, heading for New Zealand. The ARC engaged the Telemedical Advice Service (TMAS) to contact the ship to assess the clinical condition of the patient, and their needs.

The TMAS provides medical advice to contacts on board the ship and advises AMSA on the clinical risks associated with evacuation planning. On this occasion, the TMAS advised that the patient required urgent evacuation for medical treatment of a non-life threatening injury, in order to reduce future complications.

The ARC advised the vessel to divert towards Sydney and began planning the

evacuation. Due to the vessel's location and time of day, it would arrive at the Sydney anchorage after dark.

The risk assessment involved in medical evacuations takes multiple factors into account—each of which has to be prioritised and mitigated in order to carry out the rescue operation without unnecessary risk. With medical evacuation operations, the ARC must first assess factors such as the patient's clinical condition, the type of vessel the patient is on, the retrieval asset, proximity to land, and the environment.

In this case, the nature of the patient's injury meant a stretcher wasn't needed, but the container ship could only provide a winching point for the transfer to take place. If a helicopter was used, the patient would have to be recovered by winch, and at night, which would increase the risk significantly. A boat-to-boat transfer would be possible once the ship arrived at the anchorage, but the ability for the injured crew member to traverse a ladder at sea, at night, and with a hand injury, also had to be considered.

As the crew member's hand injury was not life threatening, the ARC prioritised the risk of conducting an evacuation at night—whether by winch operation or a boat-to-boat transfer—and decided it would introduce an unnecessary level of risk for the patient's clinical condition.

The ARC made the decision to delay the evacuation until the following morning, when the patient could be winched from the bridge wing and recovered to a Sydney hospital for medical treatment safely.



Winching down: rescuer with a stretcher

# Fire prevention & protection

**Fire outbreaks on board vessels are aggressive, quick moving and deadly. Are you, your crew and your vessel equipped to deal with fire?**

By Craig Elliot and Dr Brad Roberts

Since July 2018, in Australia there have been over 35 reported fire-related incidents on commercial vessels alone. Fortunately none have resulted in a catastrophic loss of life, but the risk is ever present.

## Common causes of vessel fire

Poor maintenance, poor housekeeping, electrical faults, fuel leaks and ineffective maintenance of fire protection equipment are contributors to serious vessel fires.

A recent AMSA inspection campaign to look at fire prevention on passenger vessels revealed 829 instances of poor fire system maintenance across 326 vessels. The most common issues inspectors found were:

- emergency fire pump could not supply adequate water pressure to fight a fire
- portable extinguishers not maintained in accordance with Australian Standard (1851–2012)
- lack of, or poorly maintained fire insulation, protection or suppression systems

- emergency shutoffs in engine rooms not working
- fire alarm strobe light in engine rooms not working
- assessment of fire risk not updated as part of the safety management system
- fire detectors not working
- poor or inadequate signage for fire flaps or emergency shut-off valves.
- planned maintenance of your firefighting, fire-containment and fire-prevention equipment
- fire emergency procedures
- training and induction for crew members on how to use the firefighting equipment
- standard operating procedures that address the risk of fire
- first aid training and supplies for burns and smoke inhalation.

AMSA's broader accident, incident and inspection data show that these deficiencies are actually common across all vessel types, not just passenger operations. Of the reported fire incidents in Australia since July 2018, over 45 per cent were on non-passenger vessels, including fishing vessels.

## Addressing the risk of fire in your safety management system

Consider the fire risks associated with your vessel and the type of operation you run, and then address how you plan to mitigate these risks in your safety management system.

Your safety management system must include:

## Passive fire protection

Passive structural fire protection can actually contain or slow the spread of fire at its point of origin, giving those on board more time to fight the fire or—in a worst case scenario—abandon the vessel before lives are lost.

Passive structural fire protection is the installation of fire-resistant material on the vessel structure, such as fire-resistant bulkheads, deck heads, decks and doors to help stop the transfer of heat, smoke and flame to other compartments in a vessel—especially high-risk zones like engine rooms, galleys and accommodation areas. It is commonly installed in new or existing

vessels made of steel, aluminium and fibre-reinforced plastic.

The type of material and the thickness needed for passive structural fire protection depends on the vessel construction material and the risk of the zone that requires protecting. Your accredited marine surveyor can advise you on what materials and specifications you need on your vessel.

### Preserving passive structural fire protection

Vessel owners, skippers and surveyors need to pay special attention to fire-rated divisions to make sure they are maintained to the original approved specification.

It's common to see a fire-rated division—such as the bulkhead in an engine room—penetrated during a modification, extended docking or a periodic survey. Electricians, plumbers and communications engineers, for example, can leave unintended holes in fire-rated divisions as they perform maintenance and upgrades, reducing its effectiveness.

If there's a fire, heat will be able to escape where the structural fire protection has been penetrated or compromised, allowing the fire to spread to the adjoining compartment.

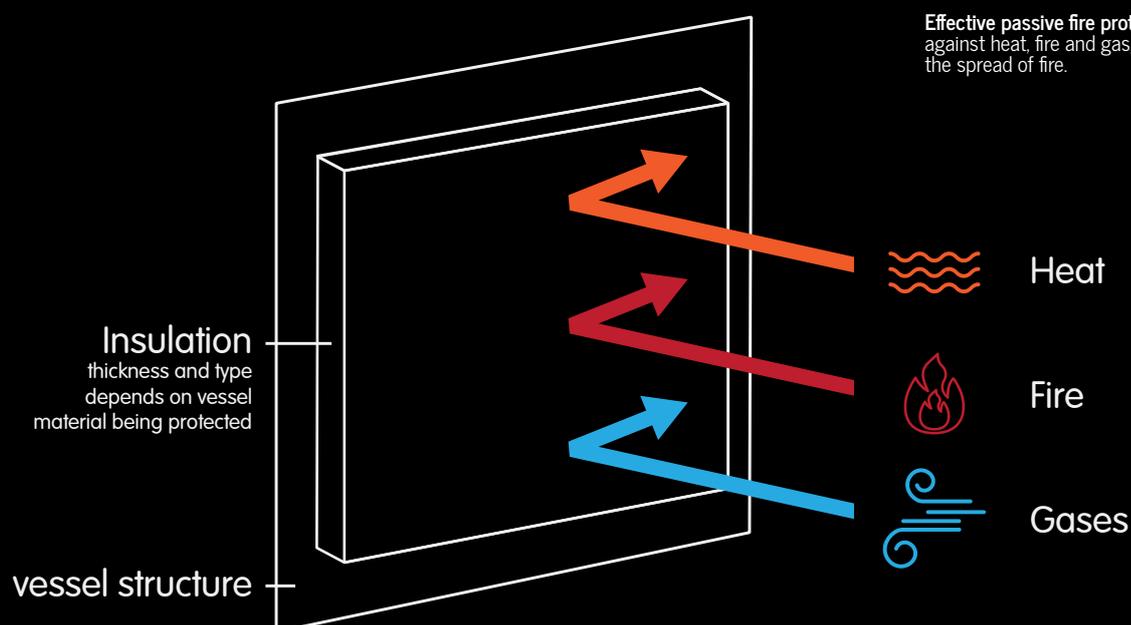
### More information

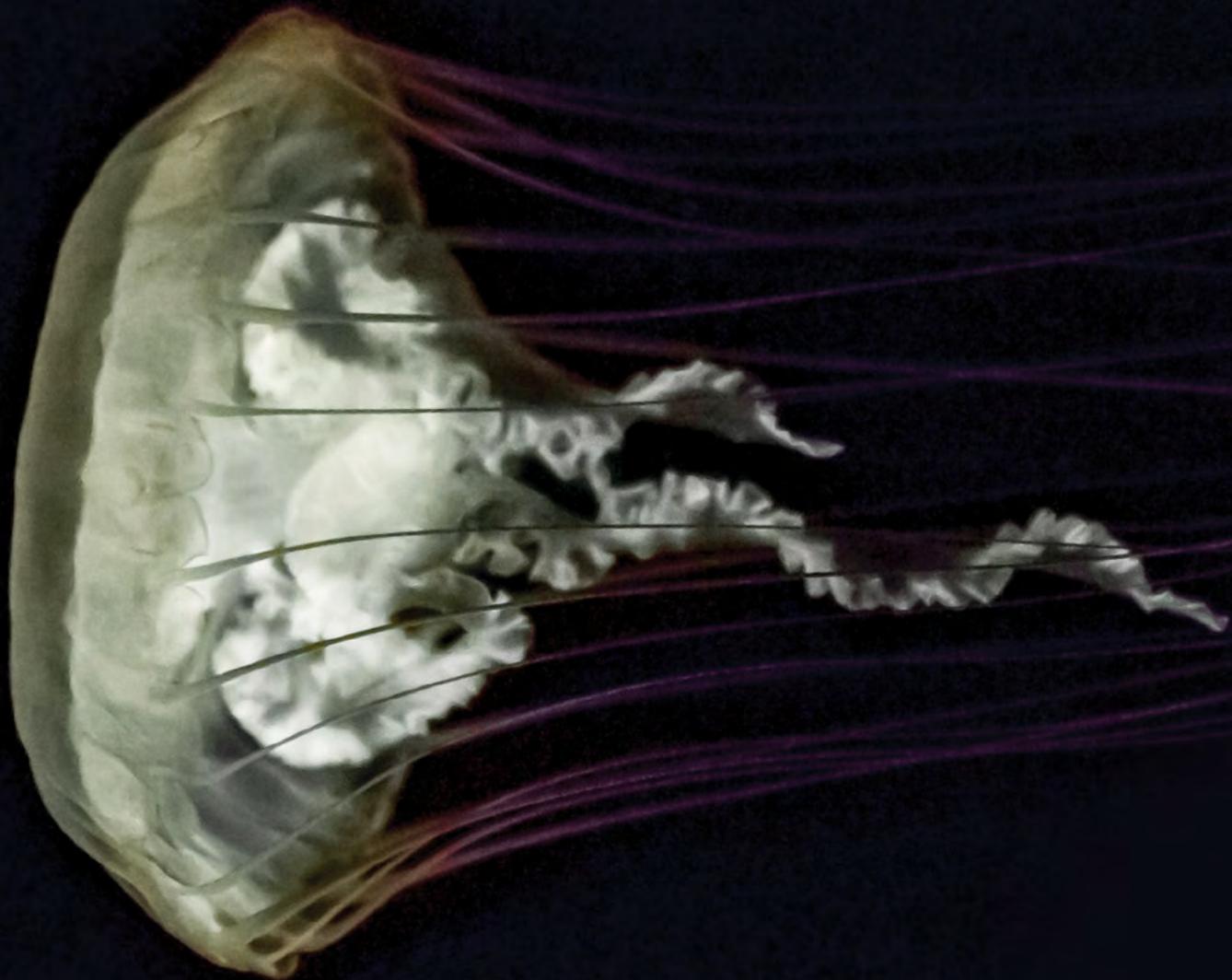
*Guidance notice – inspection of portable fire extinguishers (stored pressure type) (AMSA707):*

[amsa.gov.au/guidance-notice](https://amsa.gov.au/guidance-notice)

National Standard for Commercial Vessels, Section C4 – Fire safety:

[amsa.gov.au/nscv](https://amsa.gov.au/nscv)





# Australia's dangerous marine animals

Australian waters contain a range of creatures that secrete toxins, inject venom, release poison, or just have sharp teeth. An unwanted encounter with any of these creatures can happen quickly, so it is essential that you and your crew are prepared.

By Shontelle Chamtaprieo

## What kinds of dangerous fauna are we talking about?

### ■ Marine stingers

Australia's marine and estuarine environment is home to numerous types of harmful jellyfish, collectively known as marine stingers. A sting from any of these can be painful, but the sting of the irukandji or the box jellyfish can be lethal.

### ■ Sea snakes

At least 32 species of sea snakes inhabit Australian waters. A small dose of venom is highly toxic, resulting in muscle pain and stiffness, drooping eyelids, drowsiness and vomiting. If it is a serious bite it can cause total paralysis and death. Immediate medical assistance is critical.

### ■ Venomous, poisonous or spiny fish

A number of hazardous fish inhabit Australian coastal waters. The most dangerous include stonefish, stingrays, eel-tailed catfish, bullrout, scorpionfish and rabbitfish.

### ■ Blue-ringed octopus

Blue-ringed octopi are very small and inhabit tide pools and shallow reefs, but fishers sometimes haul them up on deck with the catch. Despite its small size, the bite of the blue-ringed octopus carries enough venom to kill 26 adult humans within minutes.

### ■ Crocodiles

Crocodiles can be found in both saltwater and freshwater around the northern regions of Australia from the Kimberly region in Western Australia, across the north and down the coast of Queensland, south of Mackay.

### ■ Sharks

A number of shark species are prevalent around Australia, including the white pointer, bull shark and tiger shark. Clearly an encounter with a shark can have dire consequences.

### ■ Cone shell

There are 80 species of cone shell in shallow water, sand flats and reefs all around Australia from north Western Australia to southern Queensland. A small number are potentially lethal to humans, with their fast-acting venom, which can cause intense pain and swelling at the sting site, numbness, tingling, nausea and vomiting.

### ■ Sea urchins and Crown of Thorns starfish

Sea urchins are found in all Australian waters and although only some are venomous, their spines can be long and sharp, along with those of the Crown of Thorns starfish. These spines can pierce the skin and snap off, requiring surgical removal and causing a painful infection. The Crown of Thorns starfish can also release a neurotoxin through its spines, causing a sharp stinging pain that can last for hours, as well as nausea and vomiting.



## Managing the risks

It is the owner's responsibility to identify the risks associated with dangerous fauna and develop ways of controlling and responding to these risks in the vessel's safety management system.

The master is responsible for implementing the safety management system, while crew and others on board the vessel are responsible for following the instructions of the master.

### ■ Is there a risk?

Get informed about the dangerous marine life in your region. Record the kinds of dangerous marine fauna that you could have contact with during your operation.

Assess the risk to you, your crew and others on board the vessel in all possible scenarios of your operation. What impact could the risk have if it became reality and how likely is it to happen?

### ■ Controlling the risk

The most effective control you can put in place, is to reduce the risk of a person coming into contact with dangerous marine fauna during your operations.

Document these controls in your safety management system and make sure you train and induct crew and others on board the vessel in what to do in each scenario.

### ■ Key preventative measures

Consider the danger to yourself before entering the water and whether tasks can be carried out another way.

Use personal protective equipment such as puncture resistant gloves (if there is a risk of contact with marine fauna with toxic or venomous stings, bites or spikes) and stinger suits (when entering waters where box jellyfish and other stingers are likely to exist).

Consider the use of other equipment to handle dangerous marine creatures, such as hooks or grabbers used to remove sea snakes from fishing nets.

Make sure new crew members joining the vessel, and to a certain degree passengers, are aware of the risks posed by dangerous marine fauna, and the risk controls in place. Induct and train your crew and ensure policies and procedures are being followed.

### ■ What happens if risk becomes reality?

Implement emergency procedures to ensure a rapid response where a person is stung or bitten by poisonous or toxic marine fauna. Know what symptoms to monitor for, so that you can effectively respond as soon as possible.

Make sure the first aid kit is stocked for all the types of bites and stings you could encounter and ensure the crew are appropriately trained and inducted,

so that that they are able to act in an emergency.

The New South Wales Poisons Information Centre provides some useful guidance on response strategies to bites and stings from dangerous marine fauna—refer to their website for further information.

Some dangerous marine fauna interactions will require emergency medical evacuation as soon as possible. Make sure you know who to call immediately for emergency assistance and have an effective means of communication to do so. This may include calling 000 if a mobile phone is accessible or radio for help on Channel 16 on VHF (distress calling channel).



## Reminder

- Reduce the risk of contact with dangerous marine fauna.
- Document the risk assessment in your safety management system.
- Ensure everyone on board the vessel is aware of the risks.
- Plan how you and your crew will respond in an emergency.



# A safety legacy

## FV *Cassandra*

## & FV *Dianne*

Avoid tragedy: assess the risks associated with your vessel – Image source: iStock.com/Andesign101

**When lives are lost at sea, the devastating and lasting effects ripple throughout communities and the wider industry. Coronial inquiries are important to the process of learning from the complex network of factors resulting in a tragic incident, so that we can take steps to protect lives in future.**

By Dr Brad Roberts

The coroner's inquiry into the loss of FV *Cassandra* and FV *Dianne* identified a number of safety measures to improve safety in fishing-vessel operations.

When *Cassandra* capsized off the coast of Bundaberg in Queensland on 4 April 2016, both crew members on board the 17-metre prawn trawler tragically lost their lives.

The coroner found that *Cassandra* likely capsized due to its trawl gear getting hooked up on the sea floor. When the crew attempted to free the trawl gear, they applied significant force to tension the gear and when it came free suddenly, the vessel capsized.

Then on 16 October 2017, six people lost their lives when *Dianne*—a sea cucumber harvesting vessel—capsized in heavy seas. Only one crew member survived.

The reason for the vessel capsizing is not entirely clear, with the coroner recording an 'open finding'. However there was sufficient information for the coroner to make a number of observations and recommendations.

### Stability

Both vessels had previously been modified in ways that may have reduced their stability. The vessels still had sufficient stability to comply with the requirements of the national law

at the time of their last assessment. However, the modifications may have reduced the ability for the vessels to recover from a major heeling event.

If you intend to modify your vessel, consult an accredited marine surveyor, and if necessary, carry out a stability assessment when the work is complete.

Modifications include moving, repositioning, installing or modifying parts of the vessel like lifting equipment, fishing gear configuration, any kind of tank, refrigeration equipment and towing points.

You should also consider how weights loaded on your vessel will affect its stability and ability to recover from a major heeling event.

*You need to assess the risks associated with your vessel hooking up, and how you would recover from such a situation.*

### Hook-up recovery

*Cassandra's* loss of stability was in part due to its trawl gear getting hooked up on the sea floor. The risk of capsize may have been reduced if different recovery techniques had been used to free the gear.

Assess the risks associated with your vessel hooking up, and how you would recover from such a situation. For example, a snatch block could have been used to pull the trawl gear to the side of the vessel—not the end of the boom—reducing the heeling forces applied to the vessel.

### Emergency position indicating radio beacons (EPIRBs)

In both events, the vessels' EPIRBs were not activated, leading to a delay in search and rescue operations. For *Cassandra*, this delay was about four hours, while for *Dianne* the delay was over 12 hours.

AMSA has introduced new requirements for float-free EPIRBs to be fitted on certain types of vessels. These changes take effect from 1 January 2021.

### Lifejackets

The coroner also recommended that crew on fishing vessels wear inflatable life-jackets fitted with personal locator beacons (PLBs).

PLBs are not a substitute for an EPIRB, but can still alert authorities that something has happened.

AMSA supports this recommendation and encourages vessel operators and crews to consider the safety benefit of wearing lifejackets with PLBs.

### Securing loose items

When divers inspected *Dianne*, they found that equipment had dislodged and fallen over, blocking exits from the wheelhouse.

Think about what items on your vessel could move in a major heeling event. A capsize can be sudden, so equipment needs to be effectively secured by restraining straps, or bolted down so they cannot move.

The *Cassandra* and the *Dianne* tragedies represent an irreplaceable

loss—to families, communities and the industry as a whole. These events should prompt everyone involved in fishing operations to work together to review their risks and put in place controls that prevent these tragic occurrences in the future.

#### **FV Cassandra**

Vessel: Prawn trawler  
 Capsized: April 2016  
 Location: Off the coast of Bundaberg, Qld  
 Cause: Likely a result of trawl gear getting hooked up on sea floor

#### **FV Dianne**

Vessel: Sea cucumber harvesting vessel  
 Capsized: October 2017  
 Location: Off the coast of 1770, Qld  
 Cause: Open finding

### More information

Queensland coroner's report into the loss of *FV Cassandra* and *FV Dianne*:  
[courts.qld.gov.au](https://courts.qld.gov.au)

Fishing vessel stability:  
[amsa.gov.au/stability](https://amsa.gov.au/stability)

Hook-ups response for trawlers:  
[amsa.gov.au/hook-up](https://amsa.gov.au/hook-up)

Choosing and installing a float-free EPIRB:  
[amsa.gov.au/safety-navigation/distress-beacons/choosing-and-installing-float-free-epirb](https://amsa.gov.au/safety-navigation/distress-beacons/choosing-and-installing-float-free-epirb)

AMSA Safety Alert—Coronial inquiry into the loss of *FV Cassandra* and *FV Dianne*:  
<https://mailchi.mp/amsa.gov.au/amsa-safety-alert-coronial-inquiry-fvcassandra-fvdianne>



Safety conscious: FV *Territory Leader* unloading catch; Float-free EPIRB secured to mast; Michael O'Brien speaks about on board training – Images supplied

# Australia Bay Seafoods puts safety first

**Australia Bay Seafoods General Manager and career fisherman Michael O'Brien, talks to *Working Boats* about how the tragic loss of life with the capsizing of FV *Dianne* and FV *Cassandra* prompted them to reinforce their approach to safety.** By Lauren Smit

Six men, all professional divers, died when their commercial beach-mer vessel *Dianne* overturned off the town of 1770 on the evening of 16 October 2017.

One survivor was rescued by a passing yacht the following morning and the alarm was raised. But that was hours after the capsize and, by then, *Dianne* had sunk to the seafloor, carrying with her any hope of rescuing the men trapped inside.

The coroner investigating this tragedy, and another involving the death of two men on the capsized prawn trawler *Cassandra*, highlighted the safety benefits of float-free EPIRBs for commercial fishing operations.

Float-free EPIRBs perform two important functions. Firstly, they automatically disconnect from the vessel and float free at a depth of 1 to 4 meters. Secondly, they automatically switch on and start to transmit a distress signal without the need for manual intervention by crew.

Float-free EPIRBs will be mandatory for certain commercial vessels, including many fishing and dive operations operating domestically in Australia from 1 January 2021.

Australia Bay Seafoods General Manager Michael O'Brien said *Dianne* was a turning point for industry.

'If professional divers couldn't handle that situation underwater, your average

fisherman was going to find it a lot more difficult,' Michael said.

Australia Bay Seafoods is Australia's largest tropical snapper fishing operation operating out of the Northern Territory in the Gulf of Carpentaria and beyond, close to the maritime border with Indonesia.

Michael described a sense of disbelief and heartbreak among the broader Australian fishing and diving community after *Dianne*, followed by a realisation that his company had to respond in its own way to the tragedy.

Australia Bay Seafoods installed float-free EPIRBs on all three of their vessels.



*'We looked at it logically, putting our [float-free] EPIRBs on our masts. Either way the vessel rolls, if that was worst-case scenario, it would be able to float up from the starboard or the port side roll.'*

— Michael O'Brien

'In a worst-case scenario, being a vessel capsizing, it's a very difficult thing if you're stuck inside and you've got to go looking for an EPIRB,' Michael said.

'We looked at it logically, putting our [float-free] EPIRBs on our masts. Either way the vessel rolls, if that was worst-case scenario, it would be able to float up from the starboard or the port side roll.'

The company also maintains secondary EPIRBs in the wheelhouses of all three boats as an additional safety measure.

But float-free EPIRBs weren't enough for Michael and after reading through the coroner's recommendations, made public nearly two years after *Dianne*, he took further steps to give his crews the best chance of survival if the worst happened at sea.

'We put in emergency escape lights in all our cabins and all our exit doors within the vessel which switch on automatically once the vessels go through a 60 degree swing. We also took the opportunity to put glow-in-the-dark tape along the bottom of the wall with arrows marking the direction to the exits,' Michael said.

Michael believes that safety on commercial fishing vessels is an evolutionary process, aided by advances in technology.

The company keeps iPads on all three vessels. Downloaded onto each iPad are SeSafe training modules and an app called Miracle with important documentation for things like near misses, incidents and safety updates. They also use the iPads to share lessons learned among the fleet.

After years of doing training onshore, the company realised it could affect greater change to the safety culture among its crews by running training in the workplace—at sea.

'Like the rest of the industry we've still got a long way to go,' Michael said, adding that what worked for Australia Bay Seafoods might not work for every operation.

'You just have to do what works for you, your people and your operation.'

#### More information

Project SeSafe:  
[sesafe.com.au](http://sesafe.com.au)

Safety management systems:  
[amsa.gov.au/sms](http://amsa.gov.au/sms)

Changes to EPIRB laws for domestic commercial vessels:  
[amsa.gov.au/float-free](http://amsa.gov.au/float-free)



# Heritage fleet delivers safety system over the cloud

Aboard the nine vessels of the unique Sydney Heritage Fleet, the cloud has become the perfect stowage space for safety management systems. By Ron Aggs

**Risk technology:** Sydney Heritage Fleet assess nine vessels using Atlassian's Jira software then store this essential data in the cloud – Images supplied

Still buried under a modern mountain of paper eons after officers' quarters stored the quills, ink, parchment and logbooks, fleet Operations Manager Tim Drinkwater and volunteer staff needed a better way to assess and manage risk.

'Operating the heritage fleet on Sydney Harbour is extremely challenging,' Tim said.

The nine fully restored and operational vessels, ranging in age from the 1870s to the 1960s represent a priceless investment. Five are more than 100 years old.

'Consequences of events like collision or fire—while unlikely—are potentially catastrophic and carrying passengers on heritage fleet vessels is high risk,' Tim said.

'It is paramount to have the required certificates of survey and operation, crew certification and all other risk management documents valid, current and accessible.'

'At toolbox meetings every morning

I kept on fossicking through piles of paper, so we decided it would be far more efficient and environmentally friendly to access an electronic system,' he said.

At that point, clouds took on meaning beyond reading the weather, as he and the heritage fleet volunteers collaborated with two Australian companies, Ocean Time Marine and Atlassian.

Together they developed a computer network comprising six synced tablets at various fleet locations, sharing a common account and email address, backed up in the cloud.

Ocean Time Marine donated resources and software called Dashboard for the fleet to trial.

The program collates and centralises all maritime and WorkCover certificates and safety management information and sends reminders when certificates are due for renewal.

Ocean Time Marine's work is guided by AMSA requirements. They are also accredited marine surveyors.

Atlassian's Jira software caters to all the fleet's evolving risk assessments of restoration and maintenance on vessels. It saves the information on the fleet's tablets and phones and backs it up in the cloud.

'Crew members and the designated person ashore have access and the ability to check records from anywhere—it's brilliant,' Tim said.

He recalled a situation on the first offshore overnight charter of the *James Craig*, built in 1874.

'The vessel was eight nautical miles off the North Head of Sydney Harbour and the engineers had entered the pre-sail checks and voyage logbook on Dashboard, then the chief engineer saved them to the cloud,' he said.

'At that time, I was at home, able to read the main engine and auxiliary vital instrumentation recordings.'

The *James Craig* is the pride of a fleet restored, maintained and operated by the volunteers, working since 1965 to preserve the ships, artefacts, literature and art that trace Sydney's maritime history.



*It is paramount to have the required certificates of survey and operation, crew certification and all other risk management documents valid, current and accessible.*

The fleet is exceptional for the fact that nowhere else in the world can people see and sail on such a collection of historic vessels.

Before COVID-19, the not-for-profit enterprise could normally call on between 55 and 70 volunteers for workshop restoration, maintenance and on-board crewing.

'They're from all walks of life, adapting to the various skills required,' Tim said.

'Fitters and turners, plumbers, shipwrights, doctors, IT specialists and solicitors who want to become crew, a stoker, a second or third engineer, or chief engineer.'

As part of the risk matrix, the vessels' masters run strict training programs, either alongside, offshore or in the harbour.

According to Tim, all the masters are very experienced and have either come from the industry and been there a long time, or retired then come back and trained and started again.

As well as alertness to emergencies like fire, crew also learn how they would

step in to take care of an incapacitated master, and navigate the vessel back to bring it alongside.

Vessels are kept at Rozelle where restoration is done. Administration is at Wharf 7 at Pyrmont where *James Craig* is also berthed. There is a workshop there as well, for maintenance.

Whenever restoration and maintenance are planned, the day's tasks are discussed each morning—for example, heavy construction work in confined space, hot-work permits, work method statements, crane work safety and qualification checks.

Risks associated with the operation are reviewed daily. Everyone is aware of the content and signs off electronically and the information is saved on the tablets and uploaded to the cloud.

Facemasks became de rigueur where workspace numbers—including the mess, which usually accommodated up to 30 people—were reduced to just a few until COVID-19 restrictions eased.

'As we open the boats for the volunteers to come back in stages one, two and three, it's a bit of an unknown how that's going to be managed,' Tim said in mid-May.

With the world's airlines grounded, discussion at morning toolbox meetings is about how to encourage more domestic tourists to feel the ocean spray on their faces instead, but it's not that simple.

In October Tim and the team were still working to maintain the priceless vessels at the Rozelle Shipyard in line with their registered COVID-Safety Plan, but commercial sailing was still further down the track.

[shf.org.au](http://shf.org.au)

## Richardson Devine Marine *lightweight champions*



Impressive: RDM's facility in Hobart: Ron Devine (left) and Toby Richardson – Images supplied

**Richardson Devine Marine Constructions (RDM) is one of the most recognised builders of lightweight aluminium vessels for commercial operators around the world, from their hometown Hobart where they supplied the famous MONA (Museum of Old and New Art) Roma ferries, to a water-jet powered ferry designed to carry commuters between Tanzania and Zanzibar.** By Claire Cunningham



The two founding directors—Toby Richardson and Ron Devine—met in a Western Australian boatyard in 1985, building the 'Kookaburra' boats for Australia's 1987 defence of the America's Cup. This led to a fortuitous opportunity when an entrepreneurial businessman approached Toby and Ron to build him a 25-metre sailing charter catamaran.

'It was an exciting project—in its day the mast was the tallest rig in Australia,' Toby said.

'Once we had successfully launched and delivered *Australian Spirit*, we decided to form RDM', he said.

Over the last 30 years, the pair's product line of passenger and tourist ferries, overnight cruise vessels and workboats varying in length from 22–46 metres, have taken shape at their shipyard in Hobart. The impressive facility within the Tasmanian shipbuilding precinct on the shores of Prince of Wales Bay enables two vessels to be built side by side, simultaneously, with pre-fabricated modules, frames and

components delivered from a nearby production facility.

Recently launched is a replacement vessel for World Heritage Cruises (featured in the January 2020 edition of *Working Boats*). This will be the eighth luxury cruising vessel RDM have built for this locally owned company, this one being powered by four water jets allowing propulsion and sound levels to be tailored to suit the serene magic of the World Heritage Site Gordon River.

Currently under construction is the second of two double-ended ro-pax Bruny Island ferries to be operated by Sealink—a commission that led to RDM working closely with AMSA.

The first ferry *Nairana*—Aboriginal for 'eagle'—was launched earlier this year and is powered by four Scania DI13 070M main engines, coupled to Schottel SRP 100 azimuth drives. If required, it can operate on two pods during off-peak periods, further reducing operating costs.

Whilst the initial build tender anticipated steel vessels, RDM were able to

convincingly outline the benefits of using aluminium to produce lightweight, yet robust, highly manoeuvrable and economical ferries.

*Nairana* is the first vessel greater than 35 metres constructed outside of Class Society requirements under the national law and it presented an opportunity for AMSA to work closely with RDM and the vessels' designers and surveyors to further develop the processes and regulatory amendments required to implement these changes.

'I think it's fair to say that there were a number of learnings for both us and AMSA during the construction and commissioning of *Nairana*,' Ron noted.

Like many boat builders RDM are concerned about what COVID-19 will ultimately mean for their business, but Toby and Ron are optimistic that their reputation for building high-quality customised fast aluminium vessels using innovative propulsion systems will position them well for the future.

[rdm.com.au](http://rdm.com.au)

# The importance of reporting near misses

It can sometimes be hard to see the benefit of reporting near misses, as they are perceived to be insignificant events, errors or misjudgements. However, near misses are actually an important way of identifying problems before they become a disaster.

By Dr Michelle Grech

The conditions leading up to near misses are usually similar. The only aspect separating near misses is the outcome. It is often only a small change in circumstances that will convert a near miss into a serious incident.

Near misses provide an opportunity for learning without the severe losses serious incidents would bring about. As less serious incidents account for the vast majority of overall incidents, it allows for a larger pool of data to draw learnings from.

There are unfortunately some challenges associated with the availability of this data, with under-reporting being widespread across the maritime industry, particularly in the domestic commercial vessel sector.

Under reporting could be for a number of reasons. These include a general lack of awareness of how incident reports are used to improve safety, and a fear of investigation and blame.

Since AMSA took on service delivery in 2018, we have been working to improve the collection and use of marine incident data to identify and develop proactive strategies to improve safety. Strategies include development of safety information such as safety



In 2019 AMSA received 3371 incident reports from regulated Australian and foreign flagged vessels (international commercial vessels coming into Australian waters). Approximately 96 per cent of these reports involved less serious incidents, including near misses. In contrast, the domestic commercial vessel fleet (which is around four times larger than the regulated Australian and foreign flagged fleet) reported 741 marine incidents in the same period, with 86.2 per cent of these involving less serious incidents.

alerts, targeted safety campaigns, and in some cases change to regulations.

AMSA will continue to work and collaborate with industry to improve reporting culture.

The Domestic commercial vessel annual incident report January-December 2019 provides an analyses of marine incident data and includes the first full calendar year of incident reporting. This annual report is the first step in providing factual feedback to industry, based on their incident reporting, on how they are tracking.

Incident data provides insight into trends in maritime safety across the domestic commercial vessel sector in Australia. A key aspect is that it also

provides a benchmark against which industry can track improvements in safety, now and in the future.

## More information

Incident reporting:  
[amsa.gov.au/incident-reporting](https://amsa.gov.au/incident-reporting)

*Domestic commercial vessel annual incident report January-December 2019:*  
[amsa.gov.au/annual-dcv-incident-report](https://amsa.gov.au/annual-dcv-incident-report)

*Regulated Australian and Foreign Flagged Vessels—Annual Overview of Marine Incidents 2019:*  
[amsa.gov.au/annual-incident-report](https://amsa.gov.au/annual-incident-report)

## Report an incident or near miss

Report a near miss or incident using Form 19, within 72 hours of it taking place.

Form 19 is available online at [amsa.gov.au/incident-reporting](https://amsa.gov.au/incident-reporting)

Owners and masters of domestic commercial vessels are responsible for reporting incidents to AMSA.



**Did you know—each year AMSA publishes an Annual Regulatory Program, setting out planned and completed changes to our regulatory instruments.**

By Kim Green

Delivering regulatory reform needs the involvement and input from our stakeholders, partner agencies, the maritime community and our people so together we can implement positive change.

We've listened to your feedback about being more transparent in communicating our regulatory priorities and forward plan of changes that may impact your business.

### **Our commitment to you**

We will publish consultation drafts for all regulatory changes so you have the opportunity to have your say. We will engage consultative bodies and share opportunities for consultation through our website and social media.

We will communicate information in a way that is easy to understand using plain English and avoiding legal terms where we can.

We will engage you early in the decision-making process and will inform you of the outcomes of consultation, including explaining how feedback influenced or shaped the outcomes.

### **Getting involved**

If you're interested in keeping updated with upcoming consultation and opportunities to have your say, register for updates at [amsa.gov.au/subscribe](https://amsa.gov.au/subscribe)

### **Annual regulatory planning**

We publish an annual regulatory program early in each financial year. While we work hard to deliver the program as published, there may be unforeseen delays to the timing of proposed consultation or the date of effect for amended instruments, including from consultation feedback, resourcing constraints or other work priorities. There may also be some regulatory activities that we are unable to forecast at the time the program is published so dates should be considered indicative only.

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A copy of our annual regulatory plan is available at [amsa.gov.au/about/corporate-publications/annual-regulatory-program-2020-21](https://amsa.gov.au/about/corporate-publications/annual-regulatory-program-2020-21)

| Focus  | Description  | Status/Action  | Date                               |
|--|--|--|------------------------------------|
| <b>Improving safety on passenger vessels – passenger monitoring</b><br><i>Regulatory instrument</i><br>Marine Order 504 (Certificates of operation and operation requirements – national law) Amendment 2020 | The new requirements for passenger vessels came into effect on the 31 May 2020. While many operators had already implemented measures for passenger safety, we've made these requirements compulsory under the law.<br>Find out more at <a href="http://amsa.gov.au/marine-order-504">amsa.gov.au/marine-order-504</a> | Check and Implement<br>New requirements apply                        | 31 May 2020                        |
| Improving communication in emergency situations – float-free EPIRB<br><b>Regulatory instrument</b><br>NSCV Part C7B, G and F2  | New float-free EPIRB requirements for certain types of new, transitional and existing vessels that are in survey.<br>Find out if this applies to your vessel at <a href="http://amsa.gov.au/float-free">amsa.gov.au/float-free</a>   | Act Now<br>Don't wait until<br>1 January 2021                        | In effect from<br>1 January 2021   |
| Nationally consistent standards for watertight and weathertight integrity<br><b>Regulatory instrument</b><br>NSCV Part C2 – Watertight and weathertight integrity  | A new standard to specify requirements for watertight and weathertight integrity (incorporating existing requirements from the Uniform Shipping Laws Code).  | Have your say<br>Draft standard being prepared for consultation      | Proposed for<br>January 2021       |
| Enhancing near coastal qualifications<br><b>Regulatory instrument</b><br>Marine Order 505 (Certificates of competency – national law) 2013   | Simplification of the qualifications framework. NSCV Part D will be incorporated into Marine Order 505.  | Watch and wait<br>Final drafts being prepared based on your feedback | Proposed for February / March 2021 |
| Refining survey requirements<br><b>Regulatory instrument</b><br>Marine Order 503 (Certificates of survey) 2018   | Review to address minor technical workability issues identified since the commencement of the new Marine Order 503 on 1 July 2018. This also includes amendments to Part 2 of the Marine Surveyor Manual and minor changes to associated general exemptions.   | Watch and wait<br>Drafts being prepared for consultation             | Proposed for February / March 2021 |
| Refining operational safety requirements<br><b>Regulatory instrument</b><br>Marine Order 504 (Certificates of operation and operation requirements) 2018   | Review to address minor technical workability issues identified since the commencement of the new Marine Order 504 on 1 July 2018. Changes to align with proposed new arrangements for certificates of competency and qualification requirements.  | Watch and wait<br>Drafts being prepared for consultation             | Proposed for February / March 2021 |

# What are we hearing from you?

Your questions help us provide better information about meeting safety requirements and how to access our services. Here are some of the common questions you have been asking.

## 1. Can I use my domestic commercial vessel in a recreational capacity?

If your vessel is fully compliant as a domestic commercial vessel and holds the appropriate certification, you may be able to use your domestic commercial vessel for recreational purposes under *Exemption 04 – Marine Safety (Recreational use)*.

This exemption allows a domestic commercial vessel to operate recreationally without having to meet crewing requirements and operational limitations imposed by the national law or the vessel's certificate of operation. However, the vessel must continue to meet any other requirement imposed by a certificate of survey or non-survey approval. All other obligations apply including safety management system requirements and general safety duties.

While operating under Exemption 04, the vessel must:

- be operated only for recreational use
- comply with maximum load and passenger restrictions (these restrictions are generally found on the vessel's certificate of survey or non-survey approval).
- comply with local recreational vessel requirements, such as local recreational laws covering safety equipment, operational area limitations and crew qualification requirements.

The vessel's safety management system must address the risks of operating the vessel for recreational use and any operation for recreational purposes must be recorded in the vessel's logbook.

There is no application process for this exemption, however we recommend keeping a copy of the exemption on-board for reference.

More information:

[www.amsa.gov.au/exemption-4-marine-safety-recreational-use-2013](http://www.amsa.gov.au/exemption-4-marine-safety-recreational-use-2013)

## 2. What is a tender and what requirements do they need to meet?

A 'tender' is defined in Part B of the National Standard for Commercial Vessels as a vessel that:

a) is used:

- to transport goods or up to 12 people, or
- for a purpose associated with its parent vessel's operation, and

## 2020-21 Vessel Traffic Services Award now open

Do you know a Vessel Traffic Services (VTS) centre or individual who has made an outstanding contribution to the safety of life at sea, the safety and efficiency of navigation or the protection of the marine environment? Nominate them for the 2020-21 Australian Vessel Traffic Services Award.

- b) is not powered by a petrol below-deck engine, and
- c) operates:
  - in line of sight of its parent vessel or another distance approved in writing by the National Regulator, or
  - in a marina or mooring area, and
- d) is less than 7.5 metres long, or another length approved in writing by the National Regulator, and
- e) if it has a parent vessel, is no longer than its parent vessel.

Under Exemption 01 – Marine Safety (Vessel identifiers), a tender is exempt from the requirement to obtain a unique vessel identifier if it prominently and clearly displays one of the following:

- words 'Tender to' followed by the name or unique vessel identifier of its parent vessel, or
- the name of the owner of the vessel followed by the word 'Tender', or
- the unique vessel identifier of its parent vessel followed by '-T'.

Under Exemption 02 – Marine Safety (Certificates of survey), a tender can be exempt from the requirement for a certificate of survey, however it must meet the conditions listed in Division 1 of the exemption and the vessel must have an approval issued by AMSA.

The tender must meet the design, construction and equipment standards mentioned for tenders in the NSCV Part G – Non-survey vessels. If the tender has a parent vessel in survey, the tender must be inspected with the parent vessel whenever it is surveyed.

Under Exemption 03 – Marine Safety (Certificates of operation), a tender can be exempt from the requirement for a certificate of operation if it meets the conditions listed in Division 1 of the exemption. The tender must have a parent vessel and be listed on the parent vessel's certificate of operation or SMS, and have its operational risks addressed either in the parent vessel's SMS or its own SMS. The tender must also comply with some operational requirements mentioned in Marine Order 504, as specified in the exemption, and crewing requirements as determined by AMSA. No application is required for this approval.

More information:  
[amsa.gov.au/working-safely](http://amsa.gov.au/working-safely)

### 3. What safety equipment standards do I need to meet if my vessel is operating under a grandfathered or 'existing' vessel arrangement?

If the vessel would be required to have a certificate of survey under the current National Law arrangements if it was not an existing vessel, the vessel must meet

the standards for safety equipment and the EPIRB requirements that apply to the vessel in accordance with NSCV Parts C7A if a class 1, 2 or 3 vessel and F2 if a class 4 vessel. This requirement has applied since 1 January 2018, subject to transitional arrangements set out in the standards. Float-free EPIRBs are mandatory on most domestic commercial vessels operating beyond 2 nautical miles from 1 January 2021.

For more information visit  
[amsa.gov.au/float-free](http://amsa.gov.au/float-free)

If the vessel would be considered a non-survey vessel under the current National Law arrangements if it was not an existing vessel, the vessel must meet the safety equipment standards of NSCV Part G on and after 30 June 2016.

Check your vessel's safety equipment to ensure that it is current and compliant with the section of the NSCV that is relevant to your situation. If you are unsure, contact AMSA Connect or an AMSA Accredited Marine Surveyor.

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AMSA Connect  
 1800 627 484

Find an Accredited Marine Surveyor:  
[amsa.gov.au/accredited-marine-surveyors](http://amsa.gov.au/accredited-marine-surveyors)

The VTS centres around our coastlines are central to the safe and efficient movement of ships and other vessels in and around busy ports. They are also strategically placed to respond to other emergency situations taking place around their anchorage zones.

Last year's inaugural award was given to Hay Point VTS Officer Warren Bath for his coordination of an incident involving a bulk carrier that had drifted off the berth in the middle of the night.

Warren's quick response ensured the vessel was brought back alongside with no damage to the bulk carrier, surrounding vessels and the environment.

Port Headland VTS and Brisbane VTS were also highly commended for their work during search and rescue incidents in the 2019-20 awards.

**Nominations close 21 February 2021.**

**Read more about the Australian Vessel Traffic Services Award and on how to submit a nomination at [amsa.gov.au/vtsaward](http://amsa.gov.au/vtsaward)**



**Tim Drinkwater, Sydney, NSW**

'Probably keeping the volunteers wearing the correct personal protective equipment—especially ear protection.'



**Justin Phillips, Adelaide SA**

'Quickly changing conditions—weather, sea conditions, limited geotechnical information, and environmental issues. We monitor daily and long-range forecasts and use a jack-up barge to take sea conditions out of the weather equation.'



**Dr Adam Smith, Townsville, QLD**

'At the moment, sharks are front of mind for everyone. It's a very low risk but with a very high consequences. The way we are mitigating it is to wear electronic shark shields for a lot of our research.'

## What's the most difficult risk to mitigate and what do you have in place to manage it?

We asked some of the people we interviewed in this edition what they think is the hardest risk to mitigate and here's what they said.



**Oliver Krcoski, West Leederville WA**

'The ones you can't control—you have to make a decision as to whether it's worth doing the task with that risk present and to what extent it can be done. I always look at what the magnitude of possible outcome.'

It was the same with COVID-19. At the time there were no test kits to give us any certainty and we didn't understand enough about it and many things were out of our control. A couple of crew couldn't come to work because they couldn't get there in time to quarantine before boarding the vessels. We had to leave them behind to protect the crew and the operation.'



**Gavin Cooper, Sydney NSW**

'Passenger management in adverse weather. Conditions when crossing the heads can sometimes be rougher than expected. It's a case of making sure passengers are safe and secure, using extra announcements to ask them to stay inside and seated, and having crew patrol the vessel, reminding passengers to take extra care.'



**Steve Fraser, Hobart, TAS**

'The complacency that comes from years of experience. As an abalone diver for nearly 20 years, I don't feel that there is a lot of risk in what I do, but the reality is that there is still plenty of risk, it is just that I have become used to it. I think one of the biggest challenges is convincing long-time fishermen, for example, to start looking at their operations as dangerous workplaces, and then getting them to analyse and control the risks that exist.'



**Justin Pigneguy, Sydney, NSW**

'On any vessel the hardest risk to mitigate are passengers! Excellent safety procedures and communications between skipper and crew are paramount.'

# Sugarloaf Point

## LIGHTHOUSE

**With its scenic beauty and long white beaches on the land of the Worimi people, the Sugarloaf Point Lighthouse has always been a coveted posting by lighthouse families and today, it remains a major destination along the mid-New South Wales coast.**



**Highway of lights:** Sugarloaf Point Lighthouse built in 1875 is the first in a series designed by Architect James Barnet – *Image by Sarah-Jane Lakshman*

Completed in December 1875 at a total cost of £18,973, the Sugarloaf Point Lighthouse was the first major lightstation along the 'highway of lights' to aid passage up and down the east coast of Australia.

The design of Sugarloaf Point Lightstation was a partnership between colonial architect, James Barnet and President of the Marine Board of NSW, Captain Francis Hixson.

The first of Barnet's lighthouse designs, it featured design elements that later became characteristic of his style—including the domed oil store, heavily bracketed upper balcony and curved balcony railings.

The tower is only 6.7 metres to the floor of the lantern room and is one of only two in Australia with an external staircase.

While the lighthouse sits atop Sugarloaf Point, three adjoining cottages and outbuildings are nestled further down from the lighthouse

on the side of the headland. Before construction could commence, a jetty of over 150 metres and a road to nearby Bungwahl had to be built in order to transport the 1800 tons of brick, cement and other building supplies needed for construction.

These materials would have included the original light—a first order Chance Brothers 16-panel Fresnel lens, powered by a kerosene lamp with a light intensity of 55,000 candela. However in April 1923 the original light was upgraded to a carbide lamp with an intensity of 174,000 candela before being converted to electricity in June 1966. The lighthouse was then finally automated in December 1987.

The current white light has a range of 26 nautical miles, while the alternating red light ranges 13 nautical miles.

During a severe electrical storm on 10 July 1900 the lighthouse was struck by a bolt of lightning. Although a lightning conductor had been installed, the current passed down through the interior of the tower, exploding the fuel store.

Over the years there have been a number of ship wrecks nearby, as mariners would often travel too near the shore in an attempt to avoid the eastern current, and end up colliding with rocky promontories along the coast.

The worst of these was the wreck of the gold-laden steamer *Catterthun*, which left Sydney bound for China on 7 August 1895. In wild weather 55 of the people aboard lost their lives when the *Catterthun* struck Seal Rock just five kilometres away.

Sugarloaf Point Lighthouse is now operated by AMSA and the structures are maintained and operated by the Land and Property Management Authority. The Sugarloaf Point area is part of Myall Lakes National Park, managed by the National Parks and Wildlife Service.



**From 1 January 2021  
Certain commercial vessels will  
be required to have a float-free  
EPIRB fitted**

**Find out if this applies to you and get ready.**

From January 2021 Marine Safety Inspectors will be out checking.

Float-free EPIRBs are water-activated distress beacons fitted in a float-free bracket. They activate automatically when a vessel capsizes to a depth of 1–4 metres and float to the surface of the water where they then transmit a distress signal.



Australian Government

Australian Maritime Safety Authority

**[amsa.gov.au/float-free](https://amsa.gov.au/float-free)  
1800 627 484**