



Australian Government  
Australian Maritime Safety Authority

# WORKING BOATS

Spring 2015 Issue 7

In this issue

---

**SAFETY CULTURE**

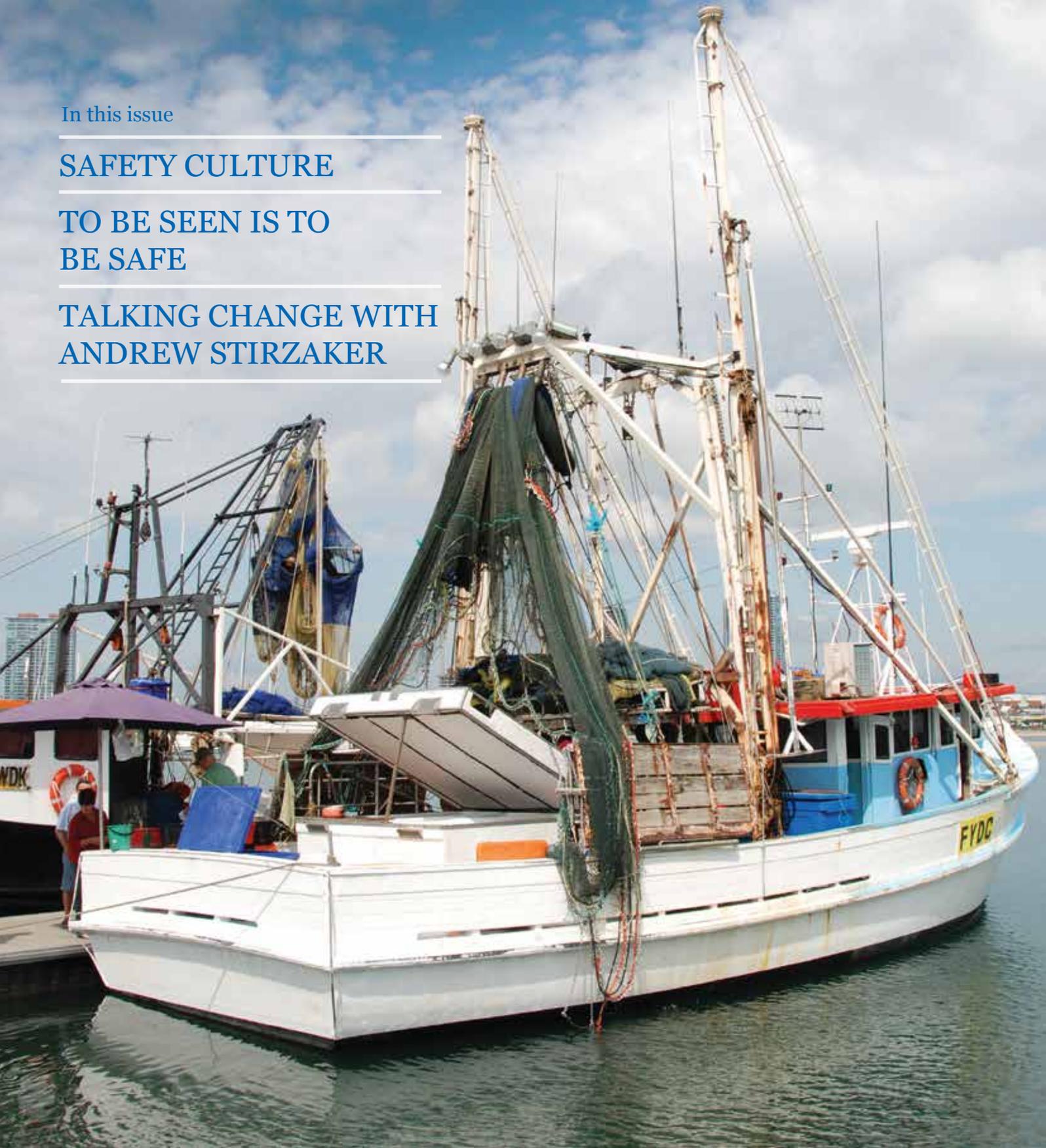
---

**TO BE SEEN IS TO  
BE SAFE**

---

**TALKING CHANGE WITH  
ANDREW STIRZAKER**

---



# Contents

Instilling safety on all levels	1
Safety culture	3
Safety culture in action	5
Talking change with Andrew Stirzaker	8
The Women’s Industry Network Seafood Community	10
To be seen is to be safe	12
Is it just human error?	14
Equivalent solutions – what you need to know	16
Online training – do your own fire extinguisher servicing	16



To ensure you continue to receive *Working Boats*, AMSA news and updates on the National System, remember to update your details.

[updates@amsa.gov.au](mailto:updates@amsa.gov.au)  
02 6279 5000

## Instilling safety on all levels

Welcome to the Spring 2015 edition of *Working Boats*.

Our goal at AMSA is to keep people on domestic commercial vessels safe, so that they come home to their families and friends. Recent deaths in the industry have reiterated the need for safety to be at the core of the National System and AMSA's approach to the regulatory scheme. We understand that you can't completely remove risk, but it needs to be effectively managed. We need each person on board to think about how they can help themselves, their crew and their passengers stay safe. We need a national culture of safety.

What exactly is a culture of safety? Find the answer in the article on page 3, which also outlines three ways you can foster a safety culture in your operation if you haven't already.

On page 14 we recognise that many experienced operators have strong safety practices and when things do go wrong, it's usually not just a result of human error, but an unforeseen combination of factors.

The profile in this issue is of Australian Cruise Group Chief Executive Andrew Stirzaker, who reflects on the pressures of keeping crew and passengers safe in a changing environment.

We also hear from CEO Kevin Chard and Marine Manager Andrew Barrow of Pacific Marine Group, who talk to us about how they manage safety across a diverse and complex array of work.

Whilst AMSA sets industry requirements to ensure safety, we also recognise that innovative and creative solutions are sometimes required when it comes to vessel design or achieving safety outcomes. Read more about this in *Equivalent solutions* on page 16.

*To be seen is to be safe* talks about the benefits of fishing boats using Automatic Identification System (AIS) technology and future developments taking place in that arena.

And don't miss the article about the Women's Industry Network Seafood Community and their valuable work to support and promote the Australian seafood industry.

I hope you enjoy this issue of *Working Boats*.

Mick Kinley  
AMSA Chief Executive Officer



Mick Kinley

“Our goal at AMSA is to keep people on domestic commercial vessels safe, so that they come home to their families and friends.”



**Australian Government**

**Australian Maritime Safety Authority**

# Got a question?

# AMSA Connect 02 6279 5000

AMSA contact centre  
8am - 5pm EST weekdays

AMSA Connect is a single point of contact for AMSA customers.

Our Customer Service Officers have a wealth of knowledge and are focussed on helping you get the information you need as quickly as possible.

The next time you need to contact AMSA, call AMSA Connect.

## Safety culture

### What is safety culture? I already have a safety management system—is that the same thing?

A strong ‘safety culture’ happens when everyone in an operation—from the crew right up to management—shares values and practices to make sure that risks are always identified and minimised as much as possible.

Having a strong safety culture in an operation means that everyone involved actually believes that safety is important. They put the safety of themselves and their colleagues first on a daily basis, and all contribute towards creating a safe environment rather than relying on others to provide it.

Within a strong safety culture the operation’s safety management system (SMS) will have more meaning. The crew understand how it works and actually apply the processes set out in the SMS to their daily work.

So how do you create a strong safety culture? Is it possible to identify what makes a strong safety culture? The answer is yes.

1. The starting point is actually recognising that accidents are often a result of unsafe behaviour or not following safety procedures. There are countless real-life stories in Australia where lives could have been saved by wearing a life jacket, or by taking more care when docking, for example.

In many instances, accidents occur when a number of circumstances line up to create a risk that the seafarer hasn’t considered. That’s why it’s so important to think about all the possible scenarios that could happen in your operation, to create safety procedures for each scenario, and to make sure that the crew know what the procedures are.

2. Safety must be a priority for the managers in the operation; it has to start from the top.

It is widely believed that when management in an operation is committed to safety, the operation has a strong safety performance.

Safety often gets pushed aside by a number of conflicting pressures. These include conflicting safety and service goals, ineffective communication, time pressures, or perhaps fierce competition—to name a few. When safety is a priority at managerial level, the crew are supported and encouraged to make sure safety remains a priority when faced with these pressures.

3. Set targets for continuous improvement. This can involve recording things like Lost Time Incident (LTI) rate (an accident that results in absence from work after the date or shift that it happened) and striving to reduce the LTI rate.

Being able to measure safety incidences not only helps to improve the safety culture; it also shows you how having a strong safety culture saves money, not just lives. This is because when people are unable to come to work as a result of an accident, this is a drain on money and productivity.

We also learn a lot from the experiences of others. We invite you to share stories about your safety-related close calls, as these help others to think about the types of risks that operations encounter and how they can be overcome.

If we choose to publish your story, we will contact you to gain authorisation and we will not mention real names, organisation names or locations that could divulge your real identity. We will also work with you to develop the written style so that it is suitable for the publication.

You can submit your story via email at [engagement@amsa.gov.au](mailto:engagement@amsa.gov.au)

### References

Borell, J., Runefors, M. (2014) Relationships between safety culture aspects – A work process to enable interpretation, *Marine Policy*, 44, pp.179–186

International Chamber of Shipping (ICS) (2013) *Implementing an effective safety Culture: Basic advice for shipping companies and seafarers*, International Chamber of Shipping: London

“Is it possible to identify what makes a strong safety culture? The answer is yes.”



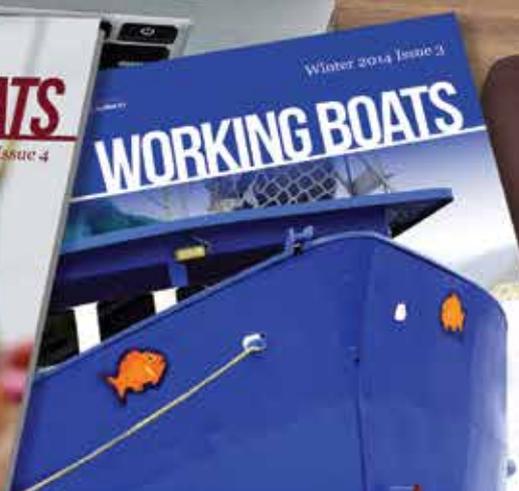
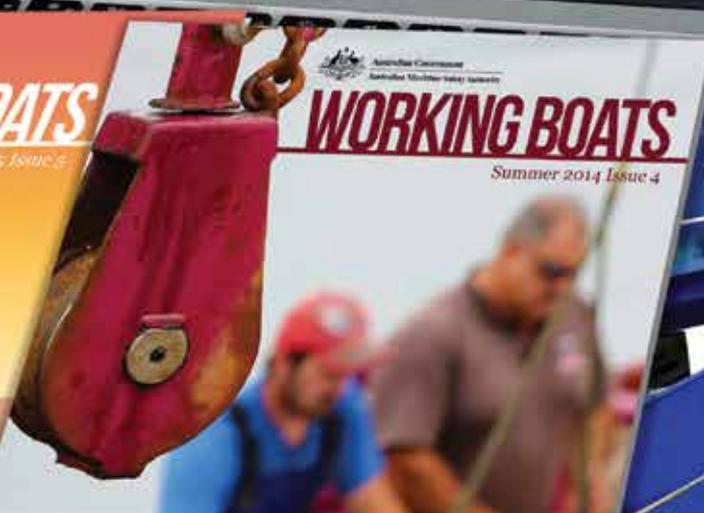
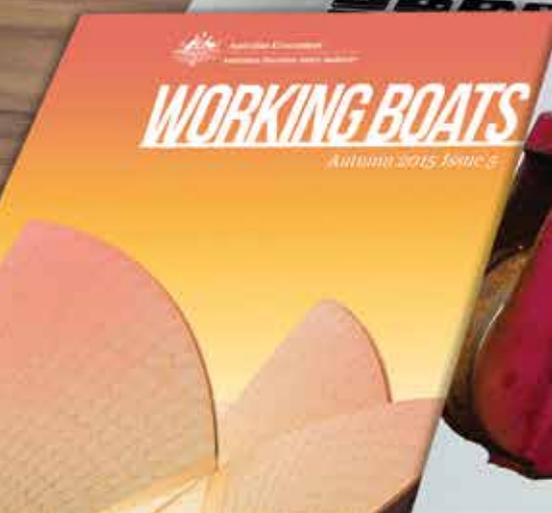
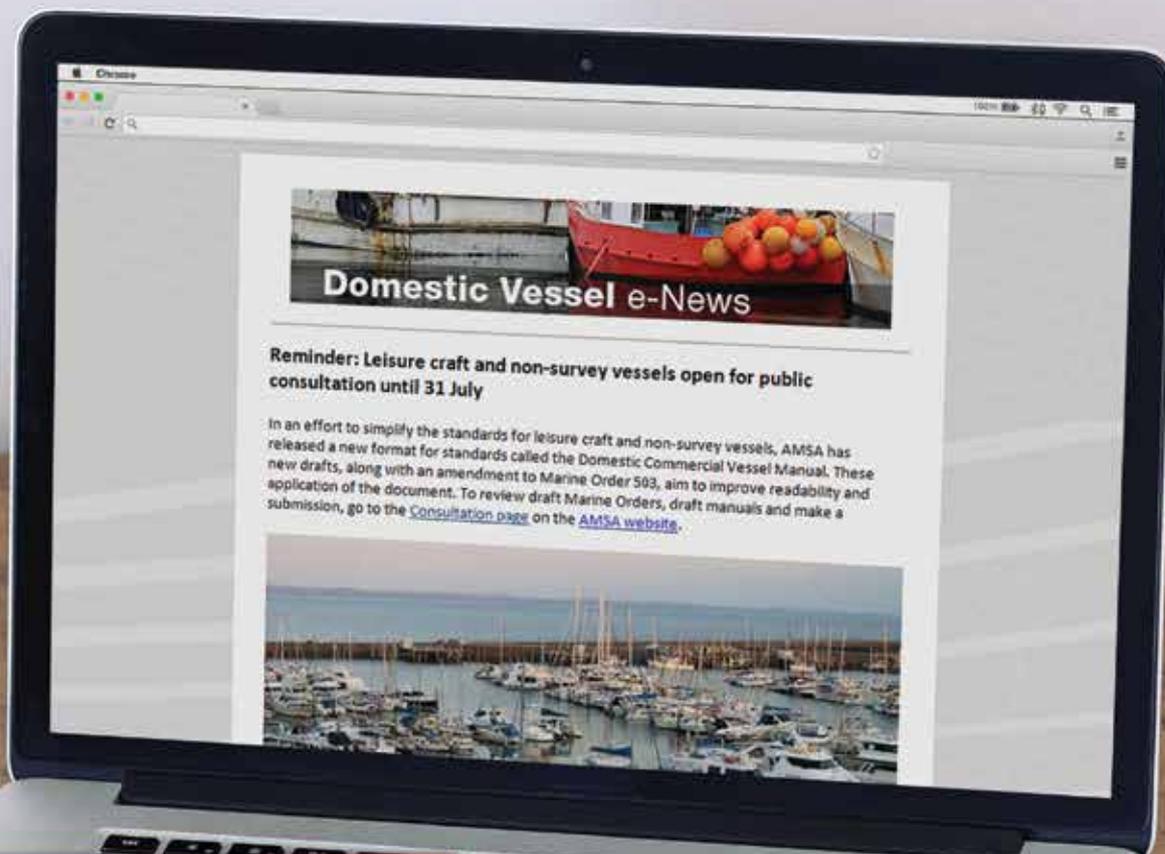
# TELL US WHAT YOU THINK

Help us improve the way we communicate with you.  
Take part in our online communication survey.

[amsa.gov.au/survey](http://amsa.gov.au/survey)

Your feedback will guide us on what information you need and how you prefer us to communicate with you.

We value your feedback — it takes just 2 minutes.



## Safety culture in action

**Pacific Marine Group is a Townsville-based company specialising in commercial diving, towage and barges, marine construction and vessel hire. CEO Kevin Chard and Marine Manager Andrew Barrow talk to us about how they manage safety across such a diverse and complex array of work. What they described was a culture of safety, not just a set of documentation.**

### How did Pacific Marine Group start and how has it progressed over the years?

The business was founded out of Bowen about 25 years ago. It commenced as a commercial diving business and then acquired some work boats; then went from some small work boats to a couple of tugs; then diversified into marine construction. About five years ago the company invested heavily in some additional tugs and barges and became involved in the Gladstone Liquefied Natural Gas (LNG) projects.

### Was that the catalyst for investing?

There were a lot of things happening in the resource industry at the time that required marine plant. At any point in time we had seven or eight vessels on hire in Gladstone. We undertook various other bits of work down there, such as the rock dumping on the gas line that runs from the mainland to Curtis Island, to the two LNG plants. We had three tugs and three barges down there for that project. We placed 130,000 tonne of rock protection on the dual pipelines that bring the coal seam

gas across. So that provided the catalyst for growth for the business to be what it is today.

### How many staff do you have?

It varies. We have core permanent staff of about 75–80, but it can get to in excess of 150 staff at times because we utilise a lot of casuals. We are contractors so when we have active projects, the number of staff we engage increases and it can increase fairly dramatically.

At the moment we have seven or eight projects scheduled for the next three months that we are trying to make sure we have the right people for; and that the coordination of people and plant is going to work. For example, we have work providing marine support for Australia Marine Services who are undertaking maintenance on navigation aids in Hydrographers Passage; transportation of pre-fabricated buildings to Hamilton Island; marine construction projects in Weipa and Karumba; a dive salvage job in 48 metres of water off Norfolk Island; and refurbishment of the Yanks Jetty landing from Orpheus Island, which we

have towed to our marine facility to undertake the necessary works. And that's only some of what we are doing.

### Do you conduct a lot of business development or do you find that your reputation precedes you?

We tender for a large part of our work but we also get about half of it because of our reputation of providing a turn-key solution. People know they will get professional people, professional crew and safe vessels. They know we have systems and processes in place to guarantee this. We tick all the legislative boxes but it's also a sound, well-run, low-risk business.

For example, a job like the refurbishment of the Orpheus Island landing requires divers to disconnect the anchoring; a vessel to recover the landing and tow it back to our workshop; and, when we get it here, cranes to actually lift it out of the water. Then a fabrication crew is required to take it apart and rebuild it; and painters to blast and paint it. We offer the whole solution.

We're a problem-solving business. We do difficult things in remote places. That about sums us up.

In the case of the Norfolk Island project the Australian Transport Safety Bureau placed a lot of weight in the tender assessment on our capacity to deliver the whole project utilising in-house plant and competencies.



*Sailfish in Gladstone moving a barge containing rock for the gas pipeline*

## **I'd like to shift to the range of safety requirements that you would think about due to the work being so varied and often unique. How do you ensure the safety of your employees?**

Probably the initial thing to say is that if you look at the front of our *Capability Statement*, we have made a commitment to have external accreditation (by Bureau Veritas) for quality systems (AS ISO 9001), workplace health and safety (AS 4801) and environment (AS14001).

For each job we put together an assessment of what needs to be done and we do a Job Safety Plan on each of the tasks, in addition to our safety management systems. Whenever diving is involved in a job, we also prepare a dive project plan.

When we do something we haven't done before, we go through a whole process of risk assessment before we actually undertake the project.

## **How do you go about this?**

We make sure that everyone involved in the job is actually included in the risk assessment so that we get a strong outcome. We try not to put the blinkers on and do our own risk assessments.

Once we have done that, we conduct the pre-briefing with the crews where we go through it and make sure that everyone's ok.

We've got our safety management systems for each vessel but when we are doing a unique task, the requirements in that aren't catered for, so we'll do a job-specific risk assessment as well.

## **And you did that with the recent work where you had to remove contaminated fuel from the *Champion Listra* tanker and have it sent away for separation disposal?**

Yes. In that situation we had extra challenges to deal with because the ship had a Croatian crew. We had to make sure that they understood what was in our risk assessment, so we took it up to the Captain's meeting room and sat down with him and his crew. We had a few language barriers and

they explained that they had their own similar processes, so it was a case of integrating what we had with their plan and then coming up with a unique plan to get the job done.

I think we are quite good at making sure that our risk assessments aren't just a document that you tick and put away.

## **You've hit the nail on the head. It's not just about ticking a box on a form and putting it in a draw. It's an everyday thing, and that's what we promote at AMSA. It sounds to me like the Pacific Marine Group invests a lot of time thinking about it.**

We do. Firstly, to keep people safe. We don't want anyone to be hurt. And secondly, there are also the business risks. If we have injuries and it becomes a reputational thing where people think Pacific Marine Group doesn't look after its employees, then we won't get repeat business. It's important to us for various reasons.

## **Has this evolved over time?**

Rather than evolving, it was a conscious decision that we wanted to step up as a professional business. About five years ago the firm had its first full-time Workplace Health and Safety Officer to professionalise the systems and meet the requirements of AS/NZS 4801:2001 *occupational health and safety standard (OHS)*.

We engaged a new Workplace Health and Safety Officer about 18 months ago to take us to the next stage; to get external accreditation on those main areas, including 4801. We already had 9001 (Quality Systems) in place and so we went to 4801 and 14001.

## **Have you seen a change in your safety management system since the National System came in?**

I don't think it's been a huge problem for us because the guidelines that AMSA has put out for a safety management system pretty much mirror International Safety Management (ISM) code. Fortunately for us our safety management system is mirrored off an ISM framework so we didn't have many changes at all. Our changes really come from our regular reviews to make sure that our safety management systems are still fresh, relevant, practical and that we have considered all the risks.

These safety management systems are usually requested by all of our clients so we have to keep them practical and easy to understand so that they can tick the box and know that Pacific Marine Group is safe.

There are also whole layers of plans that external people don't see. When we actually do a job like the rock dumping job, there's a whole marine execution plan that we put in place and this incorporates the safety management system. Things can, and still go wrong but the thing is that you actually then learn very quickly from what's happened, and take action. There's a whole incident reporting process here where we try to learn from those experiences. Sometimes the amount of documentation we need to do gets us down but primarily those experiences and challenges build your overall level of competencies.

*“We've got our safety management systems for each vessel but when we are doing a unique task, the requirements in that aren't catered for, so we'll do a job-specific risk assessment as well”*



Pacific Marine Group plant working on Yanks Jetty, Orpheus Island  
© Pacific Marine Group

## Talking change with Andrew Stirzaker

**Chief Executive of Australian Cruise Group, Andrew Stirzaker, reflects on navigating regulatory change and the pressures of staying safe in a changing environment.**

**Tell us a bit about the Australian Cruise Group—how did it begin and how has the business grown?**

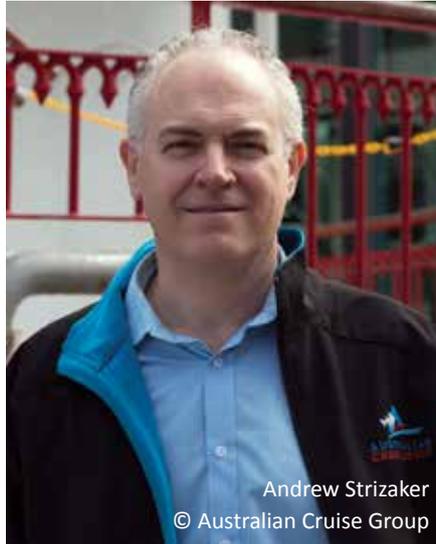
Our original founder had a small charter boat in the 1980s and had a vision to construct a cabaret show-boat style venue purpose built for Sydney Harbour in 1987. Fortuitously the launch of Sydney Showboats coincided with the Japanese visitor boom and it became a very popular tourist attraction.

Due to the success of the brand, a second Showboat was constructed in 1995 and subsequently we have invested in the Magistic brand—which provides for fine dining on two catamaran-style vessels. Over the past decade we have also operated vessels such as jet-boat sightseeing and Barrier Reef adventure vessels out of Cairns, but we keep coming back to what we know and do best—which is dining experiences on Sydney Harbour—and be more innovative in delivering that service. However, in this market you need to keep changing and adapting to survive, so watch this space.

Whilst our cabaret showboat is quite a niche market, the client-base has grown over the years. We now cater to the whole spectrum of inbound visitors and locals alike and a lot of special occasion charter work as well.

**Do you find a broad spectrum of safety culture within the industry?**

I don't think anybody intentionally operates unsafely. However, it is a challenge for many in our industry with limited resources to have a 'safety-first' culture. In passenger operations you tend to see more developed safety systems because of the risks and multiple lives involved and also the additional crew resources on board to assist, but as a result, can also make it a far more complex proposition to manage.



Andrew Stirzaker  
© Australian Cruise Group

**What are the challenges of ensuring the safety of your passengers?**

One of the biggest challenges of operating on Sydney Harbour is the perception that it's inherently very safe because you can constantly, speaking figuratively, reach out and touch the shoreline and you are not out at sea.

The challenge is to get people to understand that you're cruising in a fairly complex environment and things can go wrong. It can get quite crowded on the waterways; machinery is complex; cooking in kitchens afloat is a risk; and it doesn't take much for a lapse of judgement before you could have an incident. Marine crew have a heightened awareness and it's about making the general staff more aware of what issues could transpire.

Unfortunately operators have had incidences, and it's important to look at those situations and analyse whether it could happen to us. And if so, what can we do about it?

Apart from doing a risk analysis of what could happen, and what can go wrong within those matrixes, we re-emphasise

that message with staff through drilling, and making sure they keep up the drill regime to keep it at the forefront of their minds. That's a fairly entrenched culture on our vessels.

Additionally, there is a high turnover of food and beverage staff so another challenge is to make sure everyone is given the necessary safety orientation. We deal with this by talking all these staff through the risk and safety basics every three months.

**Have you ever had a safety-related close call? How has this strengthened your safety practices?**

We have. I don't think you can operate for over 25 years without having incidences of some nature. Thankfully, we haven't had anything that's been overly dramatic.

We navigate a 500-tonne showboat with a paddle so it's an unusual propulsion system at the best of times. On one occasion there was a bit of a freak weather incident that came through, causing the Master to temporarily lose steering. The drilling regime that kicked in made it less of a catastrophe than it could have been. Instead of colliding with multiple vessels, it was limited to just a single incident. I believe we managed the situation well and we were able to look at the events as they unfolded and learn from it. In particular, communication with the passengers wasn't as effective as it needed to be because the crew were concentrating on dealing with the incident at hand. So the message we learnt from this episode is 'don't forget to communicate with your passengers even though you know you've got the event under control'.

### What are the future challenges for the Australian Cruise Group?

Being able to keep adapting with the changing markets; trying to stay relevant to the changing international tourism and what their needs are; and being one step ahead of your competition.

It's also the unknown as AMSA transitions the regulatory service delivery of the National System over the next few years. We have worked fairly closely with NSW Roads and Maritime Services in the past and now with the AMSA handover pending we are eager to hear how things will change and the impacts on how we do business.

### How do you think the National System will benefit industry?

There's a lot of good in the National System. From the certification point of view, the fact that survey is recognised Australia-wide, means you don't need to think about historical local differing requirements and being able to seamlessly move between the states and territories. So when you want to take your vessel interstate to operate or you want to sell it interstate, the regulations will be the same. That's a very refreshing change.

I should also mention an initiative we experienced recently, when we engaged a crew member who had New Zealand maritime engineering qualifications. We learned there is now automatic recognition across the Tasman for crew qualifications, which is a great initiative.

We were previously subjected to the Uniform Shipping Laws Code with state-based local equivalent solutions defeating its purpose. The framework that AMSA has now designed will hopefully deliver a true National system as the USL was intended to be.

*“I don't think anybody intentionally operates unsafely. However, it is a challenge for many in our industry with limited resources to have a 'safety-first' culture.”*



## The Women’s Industry Network Seafood Community

**Women make up an important part of the Australian seafood industry yet they remain an untapped resource in terms of their potential contribution to the management of the industry. The Women’s Industry Network Seafood Community (WINSC) promotes women in the sector and their priorities touch on the wellbeing of the whole industry.**

WINSC was set up in 1996 in South Australia and grew in 1998 to become a national body, with representation in each state and territory. It now has a growing membership of women in every state around Australia, highlighting the growing desire for women to be involved in shaping the future of the industry.

Having been involved in running a rock lobster business on the mid-west coast and at the Abrolhos Islands of the coast of WA for many years, and being heavily involved in the Rock Lobster Industry, the President of WINSC Leonie Noble, knows from first-hand experience how women can contribute.

“Most women in the seafood industry are very, very capable and they contribute fifty per cent of the business. They are the ones who the bank manager and the accountant ring. They are the ones who read all the paperwork that comes out from government and peak bodies and then disseminate that information to their husbands. They complement their husbands, working together as a team. And vice versa, when you’ve got a female fisher out in the boat, it works the same way,” Leonie said.

As well as her work in the local rock lobster industry, Leonie has a long history of contributing to the development of her community on a regional level and now on a national level. For many years Leonie has worked to promote women, regional communities and the fishing industry through her involvement in a range of bodies from community associations to Ministerial Advisory membership.



Some WINSC members at a recent social media workshop  
© Leonie Noble

Speaking with Leonie, I quickly understood that the women who make up WINSC are also acutely aware of how strategic decisions made by government bodies on a state and national level ultimately affect the wellbeing of the seafood industry, from a macro level right down to a micro level in families and communities. Lobbying for governing bodies in the industry to consider the social implications of the decisions they make is another of WINSC’s priorities.

In recent years WINSC has become very active in the mental health arena because of an increase in mental illness in fishing communities affected by netting closures and the removal of traditional fishing rights. Directly coupled with this is recent research by Dr Tanya King for FRDC in this area.

“We are starting to see an emergence of depression and the associated behaviour that comes with depression and an increase family breakdown,” Leonie said. “It happens in the wider community, but for a lot of fishers that have fished for three or four generations, they don’t know how to do anything else. Their hearts are so broken they can’t see what the future’s going to look like. This depression is actually starting to become a real issue. We’re starting to see suicides, and that’s partly because management decisions have not taken into account the social implications.”

“WINSC has been doing a lot of work on highlighting the need for programs to help with this emerging social issue. The government puts a lot of money into helping the agriculture industry with mental illness. We [the fishing industry] need that help as well,” Leonie said.

*“We are starting to see an emergence of depression and the associated behaviour that comes with depression and an increase family breakdown.”*

Looking at the bigger picture, Leonie also reflects on future challenges for WINSC.

“One of the biggest challenges we have going forward is actually taking our Australian consumer on a journey so they understand that Australian fisheries are not only environmentally and stock sustainable but also sustainable in terms of the employment they produce out in the regions, the money they put back into our tax system and the contribution that these businesses make to regional Australia,” Leonie said.

“For example, if 20 fishermen in a small town lose their livelihood, it can have a huge impact on the whole community. Let’s say each of those fishermen have two crew working for them, then that means 60 people out of work.

So you have those 60 people and their wives and children—approximately 120 adults and 60 children—moving out of town. Then your primary schools and high schools start to become unviable. Your medical services become unviable because you don’t have that critical mass and your volunteer services become unviable because your volunteers are leaving town. Sporting clubs, which are the back bone of most small communities, also disappear.

“So for me, our challenge is to take the consumer on the journey and educate them so they understand that we are sustainable—environmentally, economically and socially. This understanding is essential to the community at large supporting their

fishing industry and the benefits it brings to the Australian consumer. Fishermen and the seafood community at large don’t tell their story very well and we need to, because we are a massive part of rural and regional Australia,” she said.

Find out more about the Women’s Industry Network Seafood Community at [winsc.org.au](http://winsc.org.au)

The following avenues are available if fishers or their families need to talk to someone confidentially about how they are feeling:

**Beyond Blue**

[www.beyondblue.org.au](http://www.beyondblue.org.au)

**Lifeline**

[www.lifeline.org.au](http://www.lifeline.org.au)

Leonie Noble,  
President of WINSC



Little Rat, part of the Easter Group of Abrolhos Islands, location of Leonie and her husband’s Rock Lobster business

## To be seen is to be safe

### Some Australian fishers are realising the benefits of using Automatic Identification System (AIS) technology to alert ships that they are nearby so that the ship can change course and avoid collision.

Commercial fishing vessels regularly operate in close proximity to shipping routes and this occasionally results in a collision risk between fishing boats and ships, which need considerable time to change course if they detect a fishing boat up ahead. Fishing boats in shipping routes also risk losing their fishing gear to passing ships.

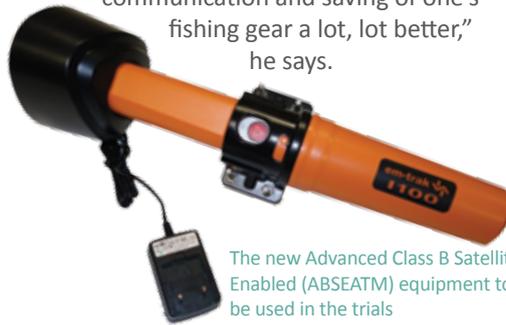
AIS is not new. It's a standard feature of ship navigational safety, but it is becoming increasingly prevalent amongst fishers in Australia and other areas of the world, such as in the United States and in the European Union, where the use of AIS on fishing boats is now mandatory.

Ross Ferrier, a crayfish operator off Cape Otway in Victoria, vouches that his AIS is a necessary safety feature on his boat.

"I can't understand how AIS technology is not mandatory, especially on passenger-carrying vessels," says Ross.

"We've had some horrific moments with passing ships, especially at night time. It's rather scary when you see these ships that I call 'whispering death' humming around you and they're very quiet and all you can hear is the noise of them cutting through the water. Where we anchor on the fishing reef off Cape Otway, it's on the north bound route for the ships doing the great circle route around the world on the edge of the ice flow. We've had nights there in heavy weather and the AIS we've got now makes us feel a lot more reassured about our safety," he says.

"Another part of the assistance that AIS gives is that if there's more than one ship in the area, like traversing in opposite directions, the AIS gives you an instant update of the name of the ship, where it's heading, its bearing, and its closest point of approach. It makes communication and saving of one's fishing gear a lot, lot better," he says.



The new Advanced Class B Satellite Enabled (ABSEATM) equipment to be used in the trials  
© AMSA

Many fishing boats that are already fitted with AIS Class B transceivers often set their receivers to receive mode only, so that they can stay anonymous and protect their fishing areas. However, when set to only receive mode, the position of the fishing boat is not transmitted to other vessels in the area and can't alert nearby ships of the fishing boat's location.

For this reason, AMSA will be trialling a new form of AIS that uses Advanced Class B Satellite Enabled (ABSEATM) technology. The trial will be carried out on a group of fishing boats in South Australia and Queensland in late 2015, early 2016.

This new ABSEATM technology may appeal to fishers because the equipment will be programmed to transmit the location of the fishing boat only when it is inside areas that are designated shipping zones. When the fishing boat moves out of these zones, the equipment will automatically stop transmitting the boat's location.

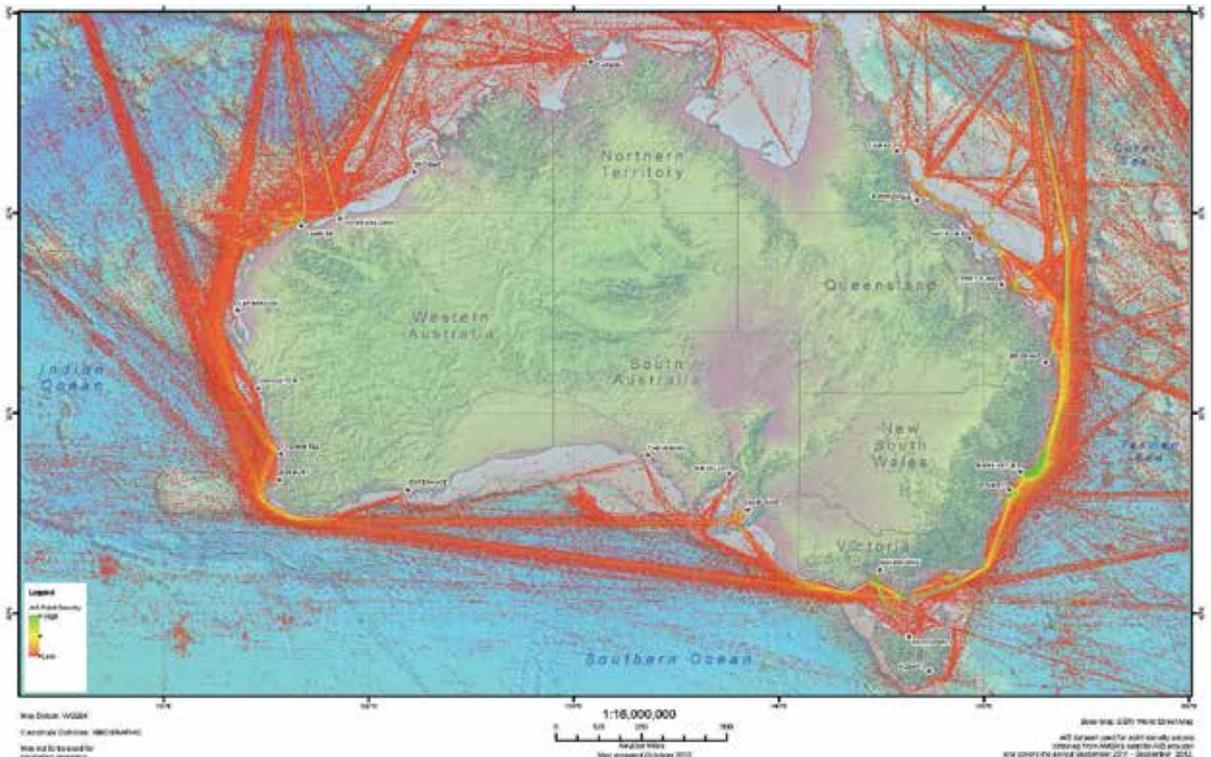
An online tutorial about AIS is available on the AMSA website along with other resources.

For more information about the use of AIS:

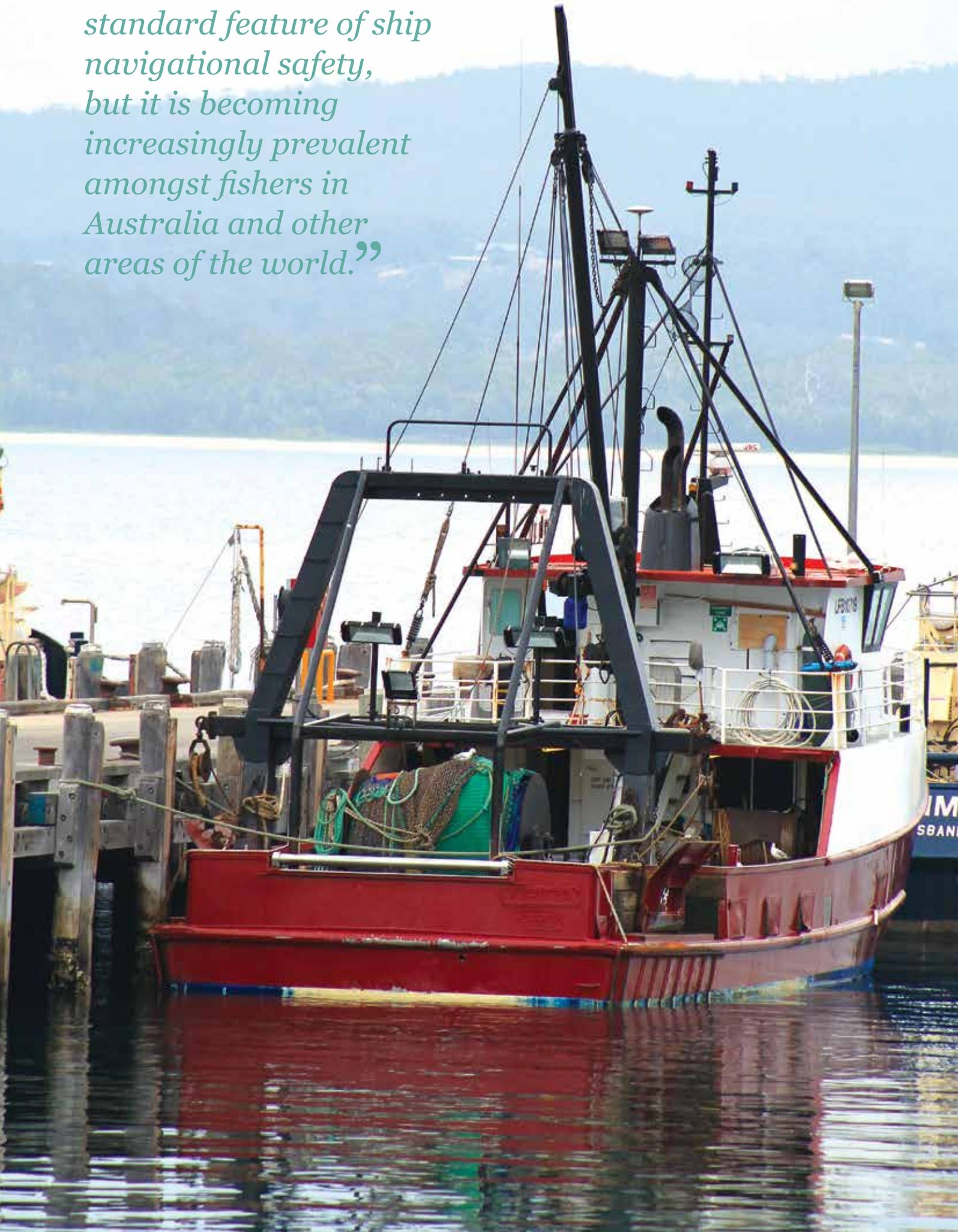
- go to [amsa.gov.au](http://amsa.gov.au)
- call AMSA Connect 02 6279 5000
- visit your local marine safety authority.

Point-density analysis of AMSA AIS-A and B vessel track data (September 2011–12)

© AMSA



*“AIS is not new. It’s a standard feature of ship navigational safety, but it is becoming increasingly prevalent amongst fishers in Australia and other areas of the world.”*



## Is it *just* human error?

**We often hear that the majority of accidents are caused by ‘human error’. But how much can we really blame on human error alone?**

We know that human error is rarely the only cause when things go wrong. Accidents are usually caused by a number of contributory factors, but some of these factors may not be so obvious. When we look at how accidents happen, we need to look at the big picture, not just at the errors of the people involved.

If we only consider human error, we miss out on understanding how and in what way the other factors contribute to accidents. This limits our ability to learn from accidents and identify ‘hazards’ that could re-surface in future.

A good example of an accident investigation that revealed other contributory factors and not just ‘human error’ is the investigation of the tug *Adonis* which capsized in 2011. A full investigation of the accident took place, looking at the big picture.

When *Adonis* capsized, four crew members were on board. Three had a lucky escape, but one of the crew was not so lucky and drowned in the tug’s wheelhouse. While the crew members were well aware of the risk of tug capsize, they did not realise that the operational manoeuvres being conducted at the time would result in *Adonis* capsizing.

The investigation revealed that the addition of a set of ‘H’ bits and other equipment aft of the tug affected its stability during manoeuvring operations, increasing the risk of capsize. Further, the tug’s stability was not re-evaluated following the fitting of this additional equipment. The crew on board the tug on the day of the accident were not aware of these facts.

Under normal circumstances, manoeuvring the vessel in such conditions would not have been catastrophic. However, the additional equipment changed the conditions, introducing a risk of capsize.

As a result of the investigation, the owners of *Adonis* started a program to review all stability data for its tugs which were purchased overseas. Also, an experienced training manager was employed to review and monitor the company’s health and safety policies and practices.

Looking at how factors combine to cause accidents gives us a better understanding of how accidents happen, and helps us to avoid more of the same kind of accidents in future by applying more effective controls.

### References

Australian Transport Safety Bureau (ATSB) (2011), *ATSB Transport safety report: Investigation into the capsize of the Australian registered tug Adonis at Gladstone, Queensland*, Marine Occurrence Investigation 286–MO–2011–005 No. 286, ATSB: Canberra, ACT.

Grech, M. R., Hoberry, T. J. & Koester, T. (2008). *Human factors in the maritime domain*. Boca Raton: CRC Press Taylor & Francis Group.

“*If we only consider human error, we miss out on understanding how and in what way the other factors contribute to accidents.*”



*Adonis* (right)  
© Sea Swift



The capsized Adonis, as seen from Chrysus's deck  
© Brett Crouch



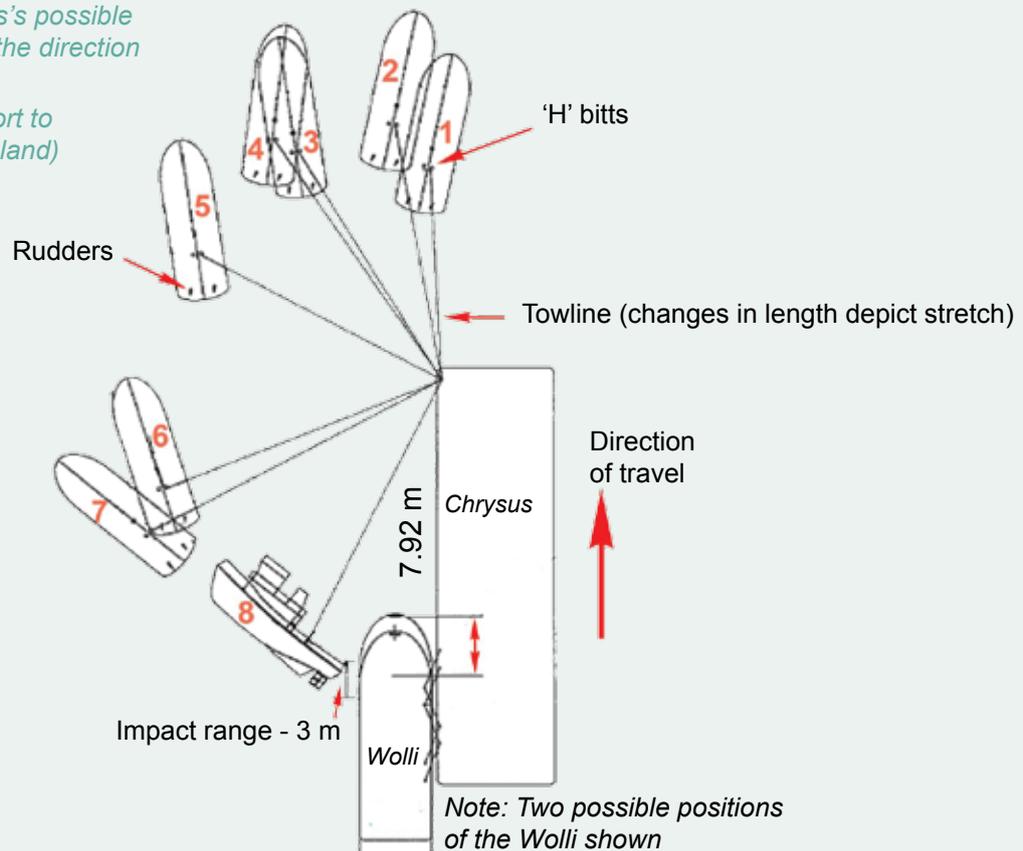
Adonis, Chrysus and Wollie in the Clinton Channel  
© Sea Swift



Adonis made fast to Chrysus over its bow on 7 June 2011  
© Sea Swift

Diagram showing Adonis's possible positions and aspect to the direction of travel before capsizing

© Holger Kelle (in a report to Maritime Safety Queensland)



## Equivalent solutions— what you need to know

### AMSA recognises that innovative and creative solutions are sometimes required when it comes to vessel design or achieving safety outcomes.

The National Standard for Commercial Vessels (NSCV) has been written in a way that enables boat owners, builders and designers to propose alternate solutions to those prescribed by the standards. As long as you can demonstrate you meet the overarching intention or 'required outcome' of the standard, then AMSA can work with you on an equivalent solution that provides an alternative to the standard, whilst still meeting safety outcomes.

When developing a proposal for an equivalent solution, AMSA must be consulted about what is planned to ensure it provides a comparable safety outcome. There is a worksheet—

*Application for Equivalent Solution*—on the AMSA website which can be submitted through your local marine safety agency.

The reason AMSA requires this form is that many people embark on a solution that is eventually rejected. They fail to see the hazards and pitfalls that can arise, many of which could have been avoided if there had been consultation with AMSA from the outset.

So if you are going to make an application for an equivalent solution, read the required outcomes outlined in

the NSCV and make sure your proposed solutions provide the same level of safety as the specified solutions.

Your analysis should also consider what effect the equivalent solution may have on other safety systems. These are known as consequential effects—the effect your change has on other systems.

The last thing anyone wants is an equivalent solution that is unsafe, costly and time consuming. Working with AMSA from the outset will save you time, money and effort.

*“When developing a proposal for an equivalent solution, AMSA must be consulted about what is planned to ensure it provides a comparable safety outcome.”*

## Online training—do your own fire extinguisher servicing

### In early 2016 AMSA will launch an online training program that enables you to do your own fire extinguisher servicing every six months.

This exciting new development is part of our continuing effort to modernise marine survey and could save you money in the long term.

The online training program will consist of two learning modules, which you will be able to complete at your own pace with the support of high-definition videos. The training modules will be available via the AMSA online learning portal.

After completing the modules and achieving competency you will be issued with a certificate, which will allow you to carry out your own fire extinguisher servicing every six months.

Prior to launching the training program, AMSA would like to test the program on a small group to ensure that it meets the needs of the user.

If you are interested in participating in the test group, please send an email to [maritimereformsubmission@amsa.gov.au](mailto:maritimereformsubmission@amsa.gov.au)

We will announce the launch of the new online training program in early 2016 via our domestic vessel publications and AMSA social media.



# MORE CHOICE TO PROVE BEACON REGISTRATION

Four new options for you to prove beacon registration.  
Choose what works best for you!



## SMS

- Save your SMS registration confirmation on your mobile phone.



## EMAIL

- Save your email registration confirmation on your mobile phone.



## PRINT

- Print your registration confirmation, or if you have no email, request a printed copy be sent via mail.



## ONLINE

- Check Beacon Registration – look up the registration status online.

If you have an existing beacon registration sticker it will remain valid until it expires.

***Remember – it is important to keep your registration details up to date,  
as they will be used in case of an emergency.***

*Renew your details every two years.*

For more information visit [www.amsa.gov.au/beacons](http://www.amsa.gov.au/beacons)  
or call the beacon registration helpline:

 **1800 406 406** (business hours)

 **+61 2 6279 5766** (international callers)

*For accidental beacon activation call AMSA Search and Rescue on 1800 641 792.*



**Australian Government**  
**Australian Maritime Safety Authority**

