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Welcome to our webinar

Fatigue Risk Management

The first session in our series of 3 webinars about the upcoming changes to safety management system requirements.

The session will commence soon

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Fatigue Risk Management

In the spirit of reconciliation the Australian Maritime Safety Authority acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples today.
Elements of *Navigating Tides of Progress* artwork by proud Samsep woman, Alysha Menzel.

Acknowledgement of Country

In the spirit of reconciliation, the Australian Maritime Safety Authority acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community.

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Navigating Tides of Progress.
Created for the Australian Maritime Safety Authority by Alysha Menzel,
proud descendant of the Samsep people from Erub Island, Torres Strait Islands

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Contents

What we will cover:

1. What is changing and when?
2. Why has AMSA made these changes?
3. What is fatigue?
4. Recognising fatigue
5. Fatigue and performance
6. Fatigue risk management – 5 step approach
7. Additional resources

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What is changing and when?

Requirement to identify the risk of master/crew fatigue in the vessel's risk assessment and how this is managed.

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AMSA MO 2024/5

Marine Order 504 (Certificates of operation — national law) 2024

I, Kaylene Dale, Chief Executive Officer of the Australian Maritime Safety Authority, (the National Marine Safety Regulator under section 9 of the *Marine Safety (Domestic Commercial Vessel) National Law*), make this Marine Order under subsection 163(1) of the *Marine Safety (Domestic Commercial Vessel) National Law 2012*.

Dated 14 November 2024

Kaylene Dale
Chief Executive Officer

What we will cover:

- Applies to all domestic commercial vessels, except hire and drive, from 1 June 2025
- Vessel owners have the flexibility to choose how they manage the risk of master and crew fatigue. This could be through a fatigue risk management plan
- Your plan needs to include a level of detail that matches your operation's risk level, type and complexity
- Any requirements under State or Territory work health and safety laws continue to apply.

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Why has AMSA made these changes?

Up to a third of crew commenced duty on board in a fatigued state.

When out at sea, 40% got less than 6 hours sleep in any given 24-hour period

Over 25% stated they experienced fatigue very often or most of the time either immediately before or during their time at sea.

Crew were less likely to identify behavioural symptoms of fatigue (i.e., headaches, body aches, affected speech and risk taking).

50% indicated that they had either not received any fatigue management training or guidance, or they were unsure.

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What is fatigue

Fatigue is a hazard

It can affect an individual's ability to do their job **effectively and safely**.

It needs to be addressed and appropriately **managed.**

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What causes fatigue?

Fatigue risk factors

- inadequate sleep (quantity and quality)
- shift work
- stress
- environmental aspects (ship motion, temperature variation, light and noise)
- duration of continuous work
- workload (task demands).

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What happens when fatigued?

Fatigue impacts individual's

- Physical
- Cognitive
- Behavioural abilities.

Physical impacts

Physical	
Performance impairment	**Signs and symptoms**
Involuntary need to sleep	» slow eyelid closures » droopy eyelids » itchy eyes » nodding off » inability to stay awake
Loss of control (bodily movements)	» affected speech » feeling of heaviness in arms and legs » clumsiness, tremors » difficulty with hand-eye coordination
Health issues	» headaches » giddiness » digestion problems » pain or cramps » insomnia » sudden sweating fits » heart palpitations/irregular heartbeat » loss of appetite

Cognitive impacts

Cognitive	
Performance impairment	**Signs and symptoms**
Inability to concentrate	» unable to organise a series of activities » preoccupied with a single task » focuses on trivial issues, neglecting more important ones » reverts to ineffective habits » less vigilant than usual » decline in ability to solve complex problems » lapses of attention
Diminished decision-making ability	» misjudges distance, speed, time etc. » fails to appreciate the gravity of situations » overlooks items that should be included » selects risky options » greater indecisiveness
Poor memory	» fails to remember sequence of task, events or procedures » forgets to complete a task or part of a task » memory lapses
Slowing of cognitive process	» responds slowly (if at all) to normal, abnormal or emergency situations

Behavioural impacts

Behavioural	
Performance impairment	**Signs and symptoms**
Mood change	» quieter, less talkative than usual
	» unusually irritable
	» decreased tolerance and anti-social behaviour
	» depression
Attitude change	» fails to anticipate danger
	» fails to observe and obey warning signs
	» seems unaware of own poor performance
	» more willing to take risks
	» displays a 'don't-care' attitude
	» less desire to socialise
	» increasing omissions
	» low motivation

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What are the consequences of fatigue?

When we are fatigued, we are poor judges of our own level of fatigue and performance.

Fatigue impacts on:

- Safety
- Performance
- Health
- Wellbeing

Fatigue has led to serious marine incidents such as grounding and collisions.

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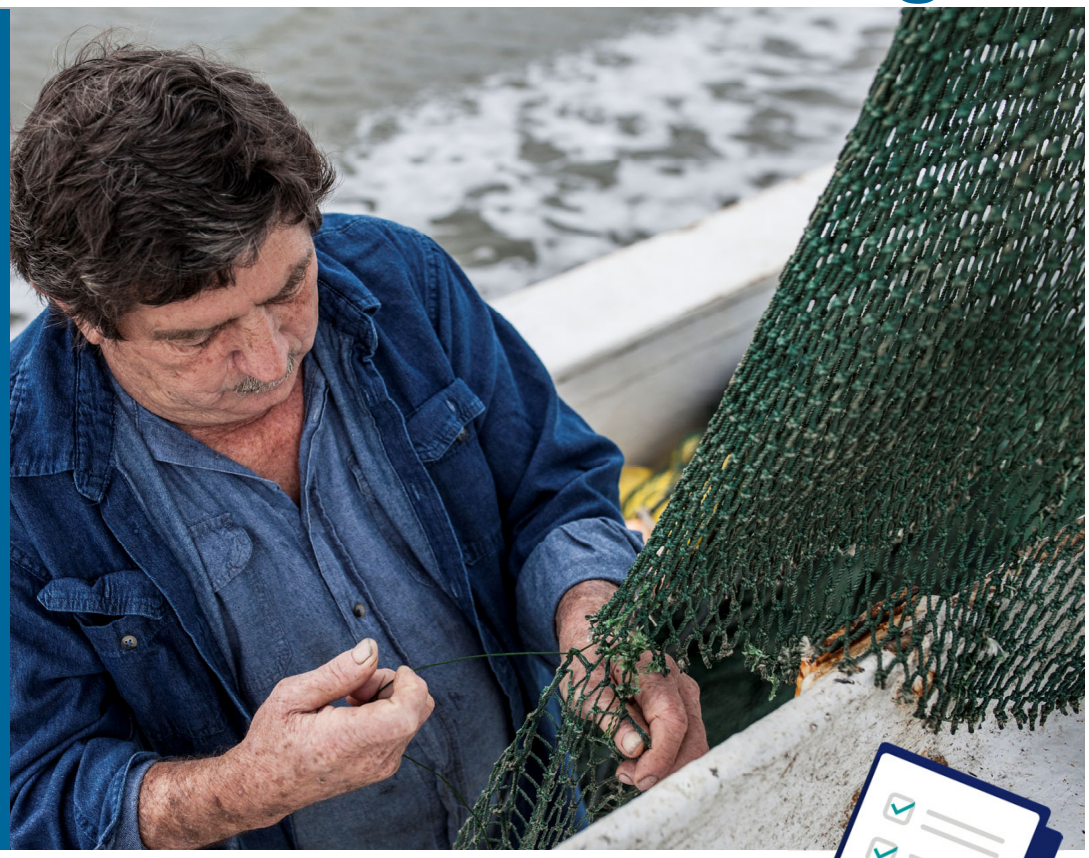
What to consider when managing the risk of fatigue

- **Perform effectively:**
  people generally need **7-9 hours** of sleep per 24-hour period.
- **Less sleep:**
  increases fatigue risk and **impairs performance and health**.
- **Time awake:**
  longer work hours **reduces performance and health**.



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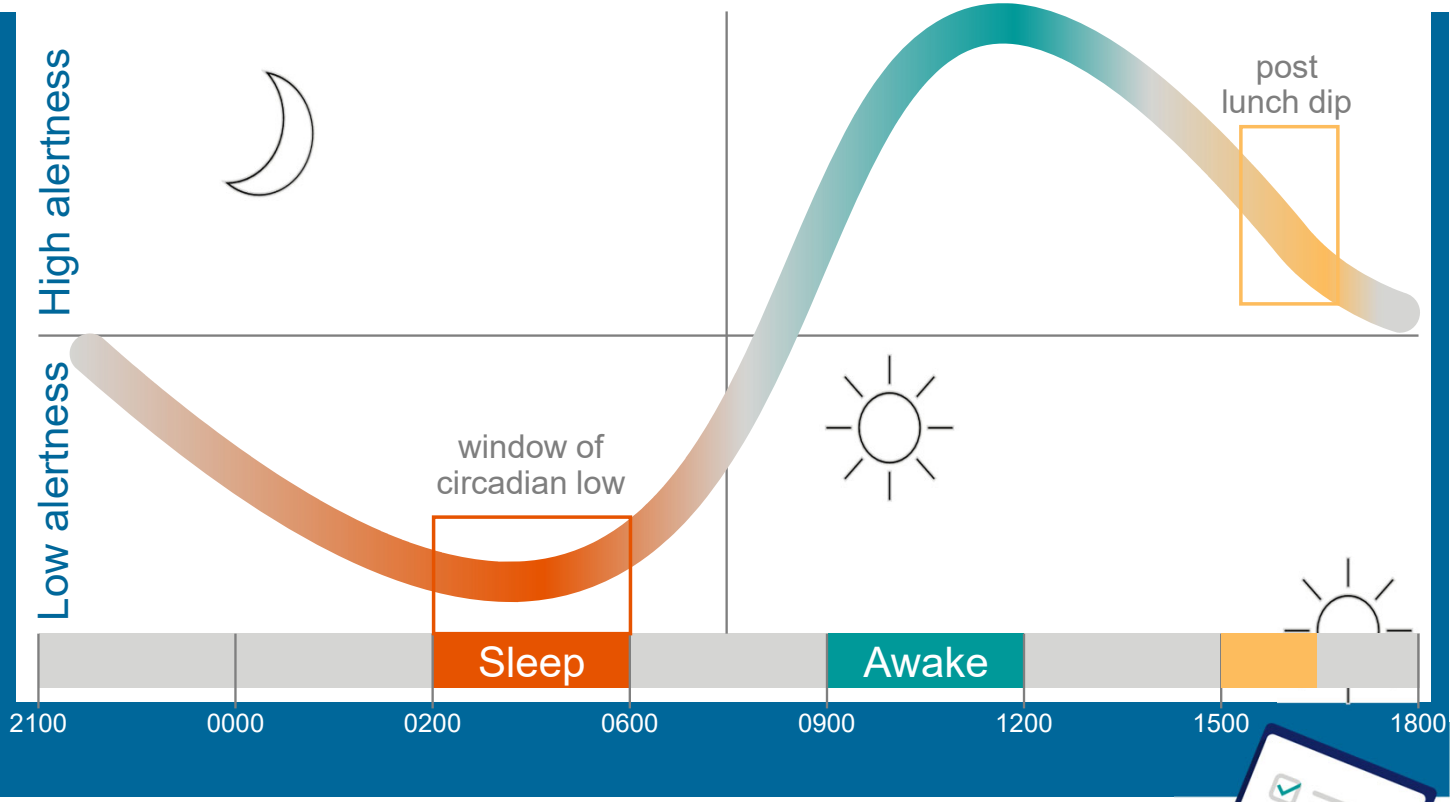
What to consider when managing the risk of fatigue

Time of day when work and sleep take place is an important consideration.



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Fatigue risk management – 5 step approach

1. **Educate**
2. **Plan**
3. **Implement**
4. **Monitor**
5. **Review**

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Step 1 – Educate

Education and awareness on fatigue means that your crew knows what to expect and do.

Education should include:

- Cause of fatigue: factors that increase the risk of fatigue at sea
- Consequences of fatigue: identifiable signs and symptoms that help crew recognise fatigue not only in themselves, but also in others
- Effective fatigue coping measures that can be adopted at sea
- Fatigue risk management approaches that would assist in managing the fatigue risks effectively.

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Step 2 - Plan

The risk of fatigue needs to be considered as part of a DCV owner's risk assessment and factored into appropriate crewing determination within the vessel's SMS.

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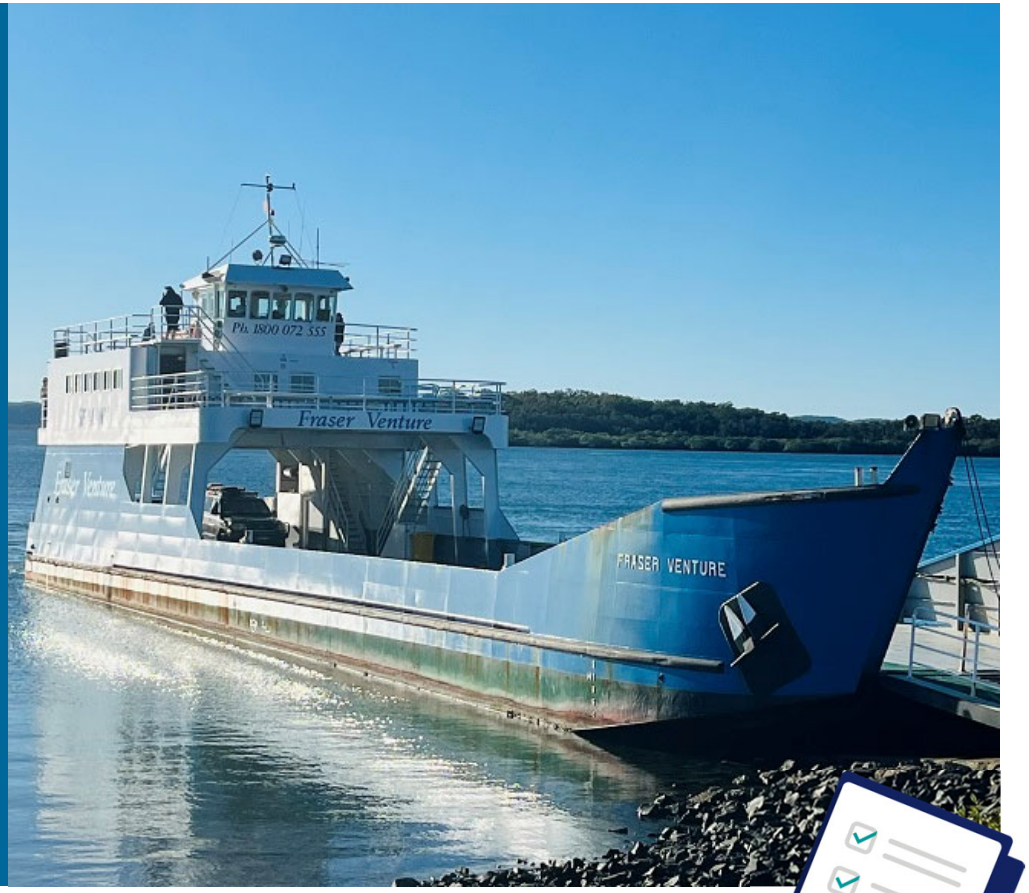
Plan - Effective fatigue coping measures

Getting enough quality sleep is the most effective control strategy to mitigate fatigue.

Ensure the provision of good quantity and quality of sleep.



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Plan – Assess the risks

Fatigue risk management checklist

Overview

Vessel owners must identify the risk of master and crew fatigue and how this is to be managed in their safety management system (SMS).

Answer the questions in this checklist to identify risks of fatigue in your operation. If the answer is **yes** to any of the questions, record the risk in your SMS risk assessment. Include control measures you will implement to reduce the risk and who is responsible for implementing the control.

Note: This is not a full list of risk factors. You will need to work out what other risk factors apply to your operation.

Work scheduling and planning

- ☐ Does anyone work in excess of 12 hours regularly? **Yes/No**
- ☐ Does anyone work in excess of 60 hours per week? **Yes/No**
- ☐ Does anyone have less than 10 hours continuous rest between each work period? **Yes/No**
- ☐ Is work performed at night during low body clock times (between 2 am and 6 am)? **Yes/No**
- ☐ Does the work schedule make it difficult for crew to consistently have at least 2 consecutive nights sleep per week (i.e. working consecutive night shifts)? **Yes/No**
- ☐ Does the work schedule prevent crew having at least 24 continuous hours off per week? **Yes/No**
- ☐ Does anyone have to commute more than one hour to get to their vessel? **Yes/No**

amsa.gov.au Keep your safety management system current. AMSA

Risk of fatigue increases when...

- More than 60 work hours per week
- More than 12 work hours per day
- Less than 7 hours of rest between work periods
- More than 4 days of night work (9pm-9am) per 7 days
- No short breaks (10 minutes) between work periods
- Less than 1 recovery day per 7 days of work

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Plan – Working at night

Safety Lessons from Marine Incident Investigation (AMSA Report) No.29 – June 2024

Fatigue puts fishing vessel on the rocks

Overview

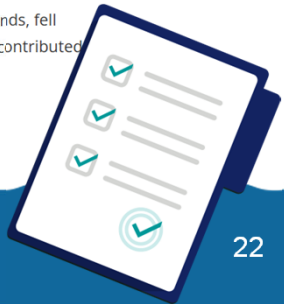
A lone cray fisher was heading for shelter during poor weather. He had been working for 17 hours without rest. While nearing the planned anchor point, the master fell asleep at the helm and the vessel continued on, running aground on the rocky shoreline.

Safety Lessons from Marine Incident Investigation (AMSA Report) – No.8 – June 2022

Fatigue contributing to fishing vessel grounding.

Overview

On 19 November 2020, a class 3B fishing vessel grounded on a beach after the master and two deckhands, fell asleep. The investigation identified that there was no clear procedure for standing watch. Fatigue also contributed the poor decisions made by the crew around who was supposed to be on watch that morning.



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Plan – Record the risks

Risks	Controls	Responsible person	Trial results /changes
Training			
Lack of sleep			
Crew arriving at work fatigued			
Working in excess of 12 hours			
Consistent work between midnight and 6am			
Physically demanding work			
Review			

EXAMPLE

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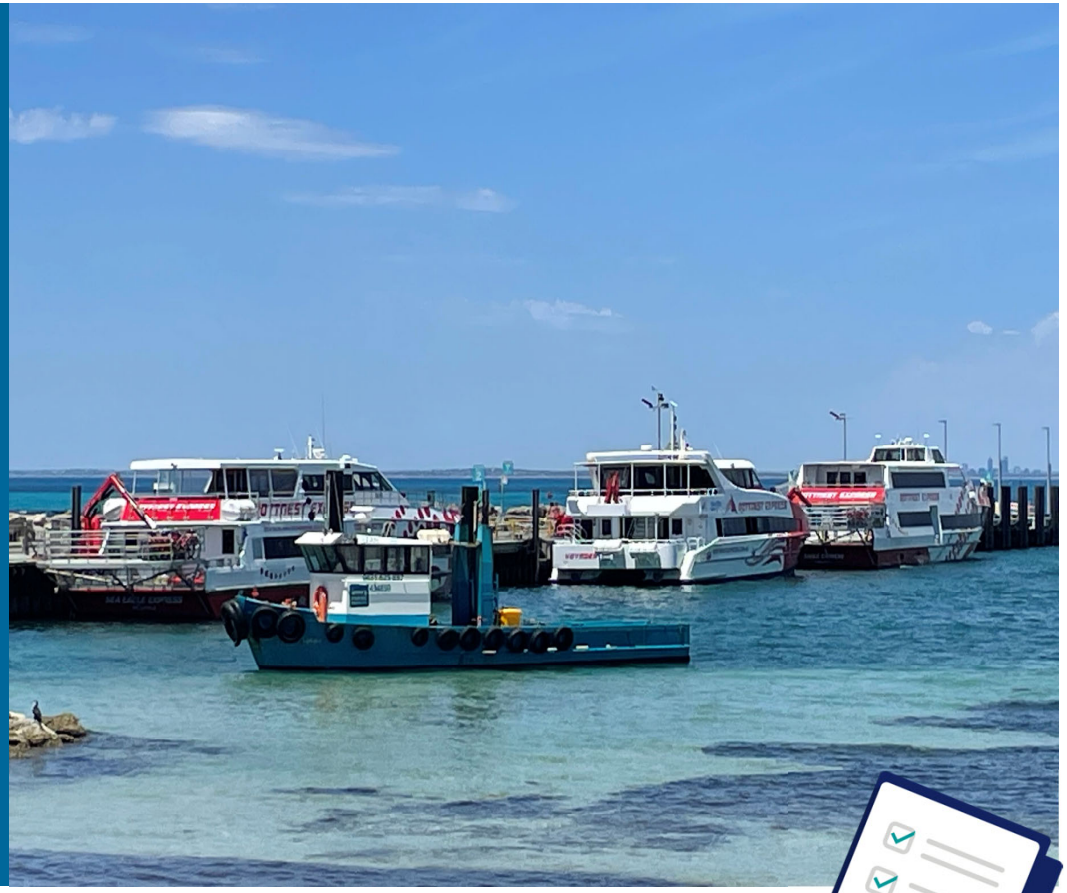
Plan – Identify the control measures

- Ensure crew have adequate fatigue training and awareness – so they understand the risks
- Limit the number of hours crew are required to work at night
- Plan for a minimum of 2 crew members together on deck or on navigational watch
- Ensure crew are fit for duty by providing adequate time for sleep prior to commencing duty
- Whenever possible, allow for short rest breaks at work.



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Plan – Record the controls

Risks	Controls	Responsible person	Trial results /changes
Consistent work between midnight and 6am	• Where applicable, rotate duties with other suitably qualified crew • Ensure crew have sufficient time off for recovery (minimum 7 hours uninterrupted sleep) • Set maximum number of hours that can be worked in any 24-hour period • Minimum 2 consecutive nights off per week		

EXAMPLE

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Plan – Identify who is responsible

- Who is best placed to be responsible for implementing the controls?
- Do they have sufficient knowledge/training to undertake the role?
- Do they have the capacity to undertake the role?

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Plan – Who is responsible?

Risks	Controls	Responsible person	Trial results /changes
Consistent work between midnight and 6am	• Where applicable, rotate duties with other suitably qualified crew • Ensure crew have sufficient time off for recovery (minimum 7 hours uninterrupted sleep) • Set maximum number of hours that can be worked in any 24-hour period • Minimum 2 consecutive nights off per week	• Owner: implement hours of work and rest policy in consultation with master and crew • Master: work rosters, crew rotations, breaks, fatigue management • Crew: monitor own and peer fatigue, ensure have sufficient food and drink, use sleep time to sleep (limit use of phone/tablets – family and friends aware of need to rest)	

EXAMPLE

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Step 3 - Implement

- Develop or update procedures
- Training for master and crew
- Put into practice.

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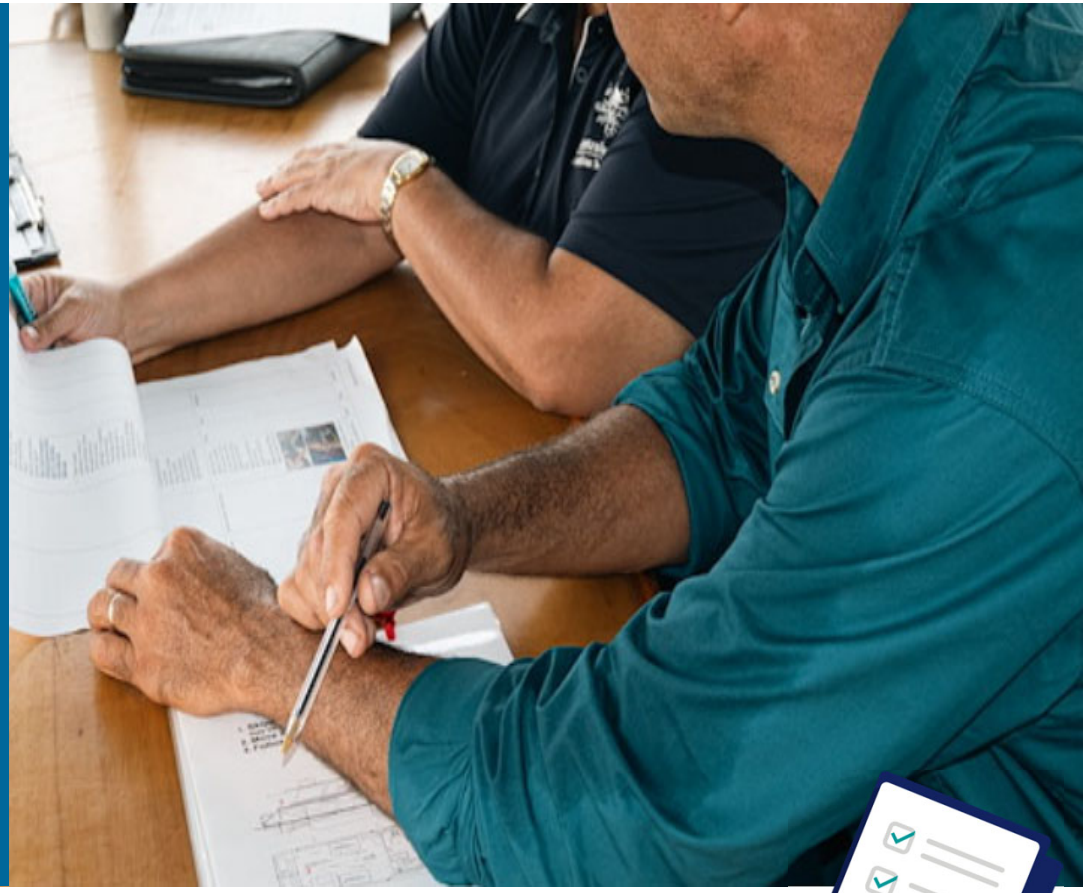
Step 4 - Monitor

- Trial your plan
- Address any risks
- Ask:
  - Are the master and crew getting enough sleep?
  - How well is the plan working?
  - Is anything missing or does anything need amending?



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Monitor – Record trial results

Risks	Controls	Responsible person	Trial results /changes
Consistent work between midnight and 6am	• Where applicable, rotate duties with other suitably qualified crew • Ensure crew have sufficient time off for recovery (minimum 7 hours uninterrupted sleep) • Set maximum number of hours that can be worked in any 24-hour period • Minimum 2 consecutive nights off per week	• Owner: implement hours of work and rest policy in consultation with master and crew • Master: work rosters, crew rotations, breaks, fatigue management • Crew: monitor own and peer fatigue, ensure have sufficient food and drink, use sleep time to sleep (limit use of phone/tablets – family and friends aware of need to rest)	• Master and crew feel more refreshed with new minimum uninterrupted sleep policy. • New maximum hours worked policy has been positively received by master and crew. • Crew have identified additional training required for rotated duties. **ACTION:** Owner to update training manual and provide upskilling/refresher training

EXAMPLE

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Step 5 - Review

Once the initial plan has been implemented and trialled and you're sure it's fit for purpose, review it:

- following any incident where fatigue may be a contributing factor
- if the master or crew have raised fatigue concerns
- as a minimum, during your annual SMS review.

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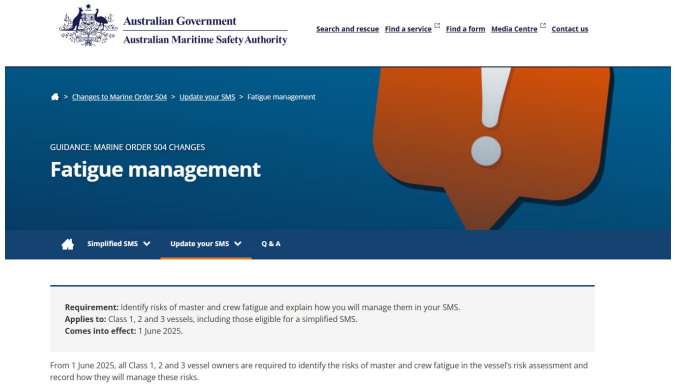

Additional resources

amsa.gov.au/smschanges

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Upcoming AMSA webinars

- 19 March – general changes
- 9 April – simplified SMS

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