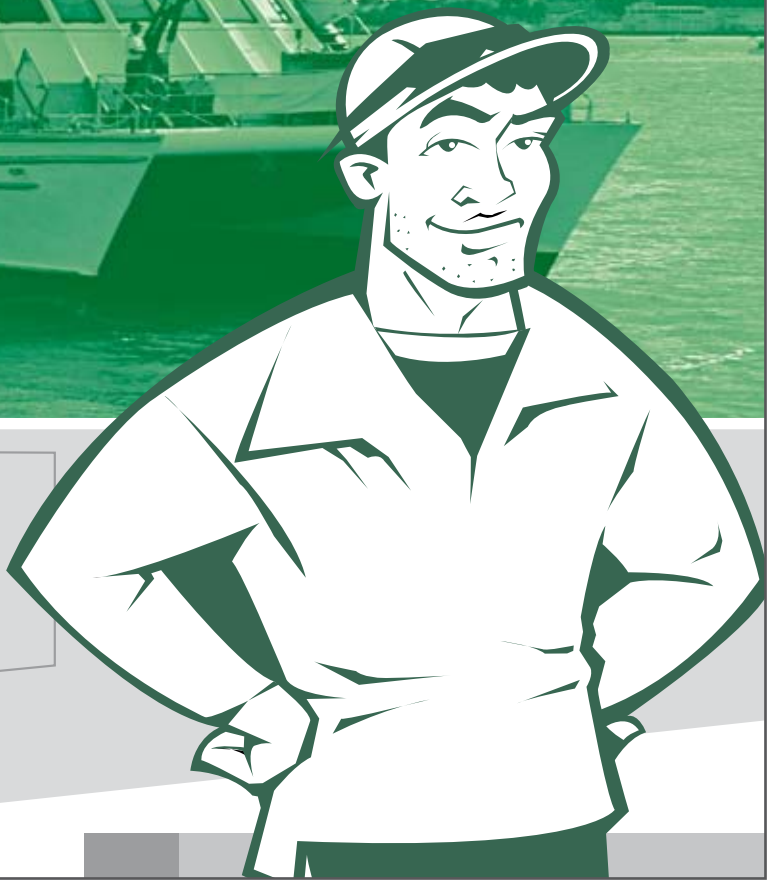
MARITIME NEW ZEALAND

FATIGUE MANAGEMENT

For Harbour Ferries



Get your sleep
Reduce your risk

GUIDE TO FATIGUE MANAGEMENT FOR HARBOUR FERRIES

Introduction

This sector guide is for vessel owners and operators. It contains:

- an example of a fatigue management plan
- common causes of fatigue on harbour ferries and water taxis and what to do about them
- Maritime New Zealand advice
- legal obligations
- how to write a fatigue management plan
- documenting steps for audit.

Caution. Every vessel and crew are different and will have their own problems with fatigue and solutions for them. Use as a starting point the list of fatigue hazards and how they can be managed. Not all will apply to you, and you may have additional problems not identified here.

Using this list does not remove your obligation to identify all hazards. However, it should help you, as it has been developed with others who work in your industry.

EXAMPLE OF A FATIGUE MANAGEMENT PLAN

About the company

Manukau Ferries is a family-owned business operating five high-speed vessels on the Manukau Harbour servicing popular beaches in the outer reaches of the harbour from their base at Onehunga Wharf.

The business is seasonal, popular with families and tourists over the summer but limited to the odd charter group and a restricted-service timetable during winter. Father Terry and son Fred operate as the main skippers/engineers supported by two additional full-time skippers and several part-time/casual skippers and crew.

Terry's wife Merryl looks after the administration and bookings system for the services and charters.

Manukau Ferries' Safe Ship Management (SSM) company indicated their safe ship manual needed to be updated to include a fatigue management plan.

Manukau Ferries were aware that Terry and Fred covered all the skippering shifts in the winter and also worked maximum hours during the summer. The summer hours were particularly tiring.

They decided to complete the Fatigue Management Plan over the winter months.

How they went about developing their fatigue management plan

Terry, Fred and Merryl brought together all their full-time and casual staff to discuss the symptoms and causes of fatigue. The SSM auditor gave a half-hour presentation about fatigue.

Each person gave their view and discussed individually how fatigue affected them and their families. The meeting focused on what causes fatigue and Terry encouraged everyone to speak freely. Much of the feedback was in alignment with the fatigue hazards already identified.

The details of the feedback from the meeting were distributed to all staff. This information was also used to help write the Fatigue Management Plan for Manakau Ferries, which was then sent to their SSM company for sign-off.

Their plan

Expectations of Manukau Ferries' proposed Fatigue Management Plan:

New rosters to be drawn up to ensure a minimum break between one day's shift and another, so that cumulative fatigue does not build up.

Consistent shifts (ie all early or all late) in one week so that all staff start their shift fresh.

2 days break where possible during weeks.

One annual holiday at least 2 weeks long to be taken by each crew member.

Significant hazards

Significant hazards are listed in the table following, along with a plan to eliminate, isolate or minimise them.

FATIGUE HAZARD	MEASURE TO ELIMINATE/ISOLATE OR MINIMISE	MANAGEMENT ACTION
Cumulative fatigue from skippers working too many consecutive days	New rosters: 2 days off after 5 on	Implement and maintain new rosters Monitor new rosters
Cumulative daily fatigue from working without a break	Introduce second vessel and crew into daily scheduled service	Employ additional part-time crew
Skippers were tired during the day due to long concentration periods	Train deckhands to drive when appropriate	Schedule training for deckhands during quiet time
Deckhands tired at start of shift	Assist deckhands to understand sleep patterns	Reinforce need for rest between work days
Additional shifts on top of normal roster pattern	Employ additional casual staff	Advertise for casual skippers and deckhands
Change from late shifts to early shifts	Develop consistent roster patterns Post roster 5 days ahead of its start	Roster all early or all late in one week's roster

Training

Train deckhands to drive the boat.

Discuss management of rest periods with all staff.

Monitor and review

Schedule a review at the end of the summer season to check how well fatigue was managed.

Knowledge

- Everyone to read the *Understanding fatigue* brochure
- Ask your SSM company to give a talk on fatigue management
- Use proper induction procedures for new crew
- Monitor new crew members – particularly for night work

COMMON CAUSES OF FATIGUE IN HARBOUR FERRIES AND WHAT TO DO ABOUT THEM

Knowledge

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Lack of knowledge by existing management or crew about fatigue	People either don't know what to do or don't recognise it is a problem, unless they have been told about it.	Employers may not allocate resources or implement fatigue management. Crew don't know what to do or fail to manage their fatigue.	Everyone reads the *Understanding fatigue* brochure. Ask your SSM company to give a talk on fatigue management. (Doing this with others can cut the cost.)
New crew	Even experienced seafarers, if new to the vessel, will not know the policies and operating practices of the new vessel. Those new to seafaring may not be used to working long hours or rotating shifts, especially at night.	Lack of knowledge can lead to incorrect actions or inaction. May be more likely to go to sleep when on duty.	Use of proper induction procedures. Monitor new crew members to see how they adapt to night work. Possibly start with shorter hours.

Before sailing

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Owner's expectations	Can encourage unsafe work patterns/practices.	Can result in high levels of fatigue and often combines with high risk tasks, such as watchkeeping.	Owner to make expectations clear as to realistic maximum hours of work and when breaks should be taken. Monitors performance and gives feedback.
Crew not available	Places additional demands on others.	Others can become fatigued, safety reduced.	Develop contingency plans prior to the situation happening. Consider cancelling services if necessary.

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Crew report in an unfit state to work	Safety can be compromised if a seafarer is not fit to work.	The seafarer is liable to cause safety problems for him/herself and others. Others cover for the unfit seafarer, pushing their own performance beyond safe limits.	Skipper to assess crew for fitness for duty when they report for work. (Employers are obliged to monitor for impairment, if it is an identified hazard that cannot be eliminated or isolated – Health and Safety in Employment Act 1992.) Send home if unfit. Have standby staff available. Sail and require recovery rest immediately, or after leaving enclosed waters. Develop contingency plans prior to the situation happening.

Sleep

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Crew get little sleep when off duty at home, eg partying, young children in the house, second job	Short sleep, especially over several days, makes a person increasingly sleepy and their performance increasingly less reliable.	More prone to making mistakes and making poor safety decisions. Recovery at sea is unlikely and the accumulating effects of sleep loss may get considerably worse.	Include responsibility for crew to turn up fit for work, or notify skipper if they are not fit to work, in employment agreements. (Employees shall take all practicable steps to be safe at work – Health and Safety in Employment Act 1992). Discuss fitness for duty responsibilities with crew. A good sleep the night prior to re-joining the boat should be a priority. Encourage the crew to share the brochure *Understanding fatigue* with their families.

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Sleep continued...

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Poor quality sleep on board	Poor quality sleep is caused by a number of factors, including: • uncomfortable bed • light. Natural light is a cue for waking up • motion/vibration • too hot/cold • alcohol (easy to fall asleep but sleep quality is reduced).	Poor quality sleep is not restorative. If opportunities to catch up on sleep are not available, cumulative fatigue can become a safety issue. More likely to make mistakes. Injury accidents become more likely, safety decisions more likely to be poorly made.	Fix sleeping environment, if it is a problem. Blackout curtains (possibly using Velcro) installed where possible. Encourage maximum use of breaks for sleep so time asleep is maximised. Purchase sleep masks for crew. Monitor sleep patterns over the work season. Have opportunity for at least 2 nights recovery sleep after each long trip, especially where cumulative fatigue is likely to be a problem. Encourage napping especially at natural sleep times (3.00 - 5.00 pm, after 10.00 pm).
Noisy engine	Hard to get to sleep, poor quality sleep.	Become fatigued as cannot get enough restorative sleep during rest breaks.	A difficult problem. Reducing engine noise/ vibration is the best solution. Check if sound proofing can be added and do so if it can be. Some have found sleeping in the wheelhouse helps a little. Earplugs may also assist.
Warm/high temperatures in sleeping quarters	Makes falling asleep more difficult and sleep is more disturbed.	Increases fatigue.	See if ventilation can be installed safely – check with engineers. (Make sure you don't vent warm air into the wheelhouse.)

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Sleep problems (often evident in those over 50 years of age).	Crew member cannot get restorative sleep so likely to be fatigued, even if given reasonable opportunities for rest and recovery.	More prone to making mistakes and making poor safety decisions.	Encourage crew to bring any problems forward. Encourage affected crew to discuss with their doctor. (See www.maritimenz.govt.nz for a list of sleep clinics.)

Working conditions

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Adverse weather and night conditions	Physically tiring, eg rough weather. Mentally demanding, eg fog.	Excessive fatigue develops across a normal working day. Mentally demanding tasks can result in fatigue.	Relief from physical and mental fatigue is obtained by rest (breaks). Ensure there are breaks during the day, so fatigue has less chance to accumulate. Work with crew to determine what results in fatigue, where breaks can be placed in the schedule and how long they should be to alleviate fatigue.
Heat/cold	Working in extreme temperatures (hot or cold) impairs performance and workers will not want to work as long. People sleep better when the temperature is cooler.	If seafarers are working in extreme temperatures, they will become fatigued (and their performance impaired) if they are required to work longer than their body can cope with naturally. Moving from a hot inside to a cold outside. Poor quality sleep, if the temperature is not right.	Work with employees to monitor the effects on their performance and fatigue levels. Investigate options for cooling/heating/ventilation on board. Ensure there are breaks during the day, so there are more opportunities to reduce stress on the body. When warm ensure there is a plentiful supply of drinking water available. Wear layers of clothing, with the top layer being easy to remove. Investigate options for cooling/heating/ventilation in sleeping areas.

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Working conditions continued...

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Casual evening charters on top of scheduled day trips	Potential for longer working days.	Working after being awake longer than 16 hours. Sleep drive increases, especially after 10.00 pm. Less opportunity for sleep and recovery. Increased risk of a road traffic accident when commuting.	Use other staff to either run the charter or shorten the normal working day. Allow time for sufficient sleep the next day. Refuse the charter if there are not sufficient staff to run it without maintaining the safety of the operation overall.
Extended days through doing additional work after the normal working day	Physical tiredness accumulates. Pressure to sleep builds, if awake more than about 16 hours.	Becomes tired, especially if operating after around 10.00 pm. If no opportunity to recover sleep, will be fatigued the next day and until recovery is allowed.	Employ sufficient staff (including part-time staff) so that this is a rare event. When a seafarer works a very long day, allow time off for recovery, before resuming work (this can mean 2 full days off work, as the first night off may be a short sleep, if the seafarer gets to bed very late – it is difficult to sleep past mid-morning).
Long work days	Short sleep. Cumulative fatigue. The sleep drive begins to increase rapidly after about 16 hours awake.	Commuting becomes high risk. More likely to make mistakes. Injury accidents become more likely, safety decisions more likely to be poorly made.	Employ sufficient staff to allow either shorter days or a smaller number of days worked continuously. Make sure that the number of days worked in a row does not allow fatigue to build unreasonably. Monitor work practices and fatigue levels. Encourage napping, especially at natural sleep times (3.00 – 5.00 pm, after 10.00 pm).

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Individuals who seek additional work	Long work hours, insufficient time for rest.	High levels of fatigue after long hours/short rest periods. Cumulative fatigue.	Keep an up-to-date record of hours worked and monitor individuals who seek to work additional hours. Establish limits of how much work can be done within specified timeframes. Monitor employees also working in other jobs, that result in them becoming a fatigue risk.
Is busy with lots of tasks around the boat	No or limited breaks, opportunities for recovery.	Fatigue likely to set in quickly, especially physical fatigue. Limited opportunities to eat/drink and energy levels diminish.	Employ additional staff to relieve work pressure at peak times.
Lookout is demanding due to busy traffic and/or high speed operations	Demanding vigilance tasks (like lookout) can only be performed well for short periods of time. Under busy traffic conditions there are less "natural breaks" in attention and overall performance decreases".	The chances of not seeing another vessel increase, partially as a result of "fatigued attention".	Reduce risk by having at least two pairs of eyes on lookout. Programme breaks to allow recovery.
Difficult passengers/high passenger load	Takes your time and energy – can be stressful and wearing.	Less time for other duties. Encourages shortcuts, increases chances of making a mistake.	Consider a policy that supports the crew taking more time to complete their tasks. Ensure that pressure to make the schedule does not compromise safety.
Long hours with no breaks	Fatigue accumulates with no chance to rest, refuel and recover.	Mistakes become more common, accidents more likely.	Examine work practice (especially when working under pressure) and develop a policy to provide a minimum number of breaks.

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Working conditions continued...

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Wheelhouse environment	Heater on induces sleep. Wheelhouse chair is a comfortable place to be, especially when fatigued.	Watchkeeper falls asleep. Easy to fall asleep in.	Discuss with crew, address in company policy on watchkeeping. Encourage a flow of fresh air. Check on use of heater. Install a functional chair, not a comfortable chair. (While comfort is great, safety should be the main consideration.) Address as part of the watchkeeping policy – prohibit use of the chair in enclosed waters and on inward transits, unless its use increases safety.
Clothing	Inappropriate clothing can result in crew either being too hot or cold.	Crew become fatigued unnecessarily.	Wear three layers when conditions are cold: • synthetic next to the skin to take away moisture • wool or synthetic-pile for warmth • windproof material. Keep the head covered: it is where most heat is lost from. Wear layered socks and insulated boots to keep feet dry and warm.
Dehydration and running short of energy, especially working when it is hot	Will feel tired and it becomes difficult to perform at an effective level.	Mistakes become more common, accidents more likely.	Place water bottles where they are easy to grab. Encourage staff to use them regularly, especially when doing physical work in warm weather. Drinking little and often is better than having a large drink occasionally.

Other

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Commuting	Less time for sleep. Cumulative fatigue. Driving during the times of low alertness is particularly risky (at night up to about 6.00 am in the morning, during the mid-afternoon).	Makes a road traffic accident more likely. Injury possible to not only the crew member but also members of the public.	Change work practices so that cumulative fatigue is not an issue. Have coffee available and a place to nap at work before driving. Pay for taxis. Monitor work practices and fatigue levels.
Causes of fatigue unique to your operation	Your vessel.	Your vessel.	Your vessel.

The worst causes of fatigue often occur unexpectedly. Often you know what these could be (such as the engine breaking down) but you cannot tell if or when they will occur. Getting people together to brainstorm what has happened in the past in your operation, and what may go wrong in the future, is a good way of identifying this type of problem.

If you have a complicated operation, or if there are fatigue problems you feel you haven't come to grips with, discuss your situation with your SSM company or local maritime safety inspector. The *Fatigue tools for vessel owners* booklet may give you some ideas on how to understand your situation better.

MARITIME NEW ZEALAND ADVICE

Minimum hours of rest

Hours of rest are not the same as time available for sleep. Crew will have personal care and family and personal business to attend to. In addition, sleep at certain times of the day (late morning to early afternoon and early evening) is virtually impossible, as a result of how the body clock works (see brochure *Understanding fatigue*).

The hours of rest recommended here are a guide only. They are not a legal requirement.

Maritime New Zealand recommends:

- a minimum of 77 hours of rest in a 7-day period
- a minimum of one continuous block of 6 hours sleep per 24 hours. (Disrupted sleep is less restful.)
- 2 consecutive nights available for sleep between 10.00 pm and 8.00 am, at least fortnightly and preferably once a week. (Recovery sleep needs to take place at night.)

Maritime New Zealand recognises that some operations do require long hours to be worked, either regularly or occasionally. When this occurs Maritime New Zealand recommends that:

- the operation be examined to determine if alternative work arrangements can be put in place
- attention is paid to the risks associated with long hours of work and cumulative fatigue
- additional time off is given to allow recovery.

Cumulative fatigue:

- if cumulative fatigue is to be avoided, 14 hours of sleep per 48 hours is recommended. (The average person requires 7-8 hours of sleep per night to be fully rested).
- if fatigue accumulation is fast, limit days worked to 1-3, depending how fast fatigue accumulates
- if fatigue accumulation is gradual, limit days worked to 5-6.

Developing a fatigue management plan

Depending on the operation, writing a fatigue management plan may be simple, or “easier said than done”. Regardless of how easy it is to write, the chances are that it won’t be 100% right when first written. That is why it is essential to follow these three steps:

1. Develop the draft fatigue management plan. This should be led by the owner, with assistance from the skipper and crew, and others where needed, eg the SSM company.)
2. Trial the plan. The trial should be for several weeks.
3. Revise the plan. A number of operators have found it useful to review their plans at the end of each season.

Watchkeeping alarms

Maritime New Zealand recommends watchkeeper alarms are installed on all vessels which will sail with a solo watchkeeper after midnight. When a watchkeeper alarm is installed, it is recommended that:

- there is a company policy on the use of the alarm (when and how)
- the alarm be used in such a way that the watchkeeper cannot turn it off or muffle it. (Both these actions can occur when watchkeepers are tired.)

The watchkeeper alarm is viewed as a fatigue countermeasure of last resort (the ambulance at the bottom of the cliff). It is not a substitue for the other strategies described in this guide.

Before Sailing

- Owner monitors performance and gives feedback
- Owner makes expectations about fatigue clear
- Make contingency if crew not available
- Skipper to assess crew's fitness for duty

LEGAL OBLIGATIONS

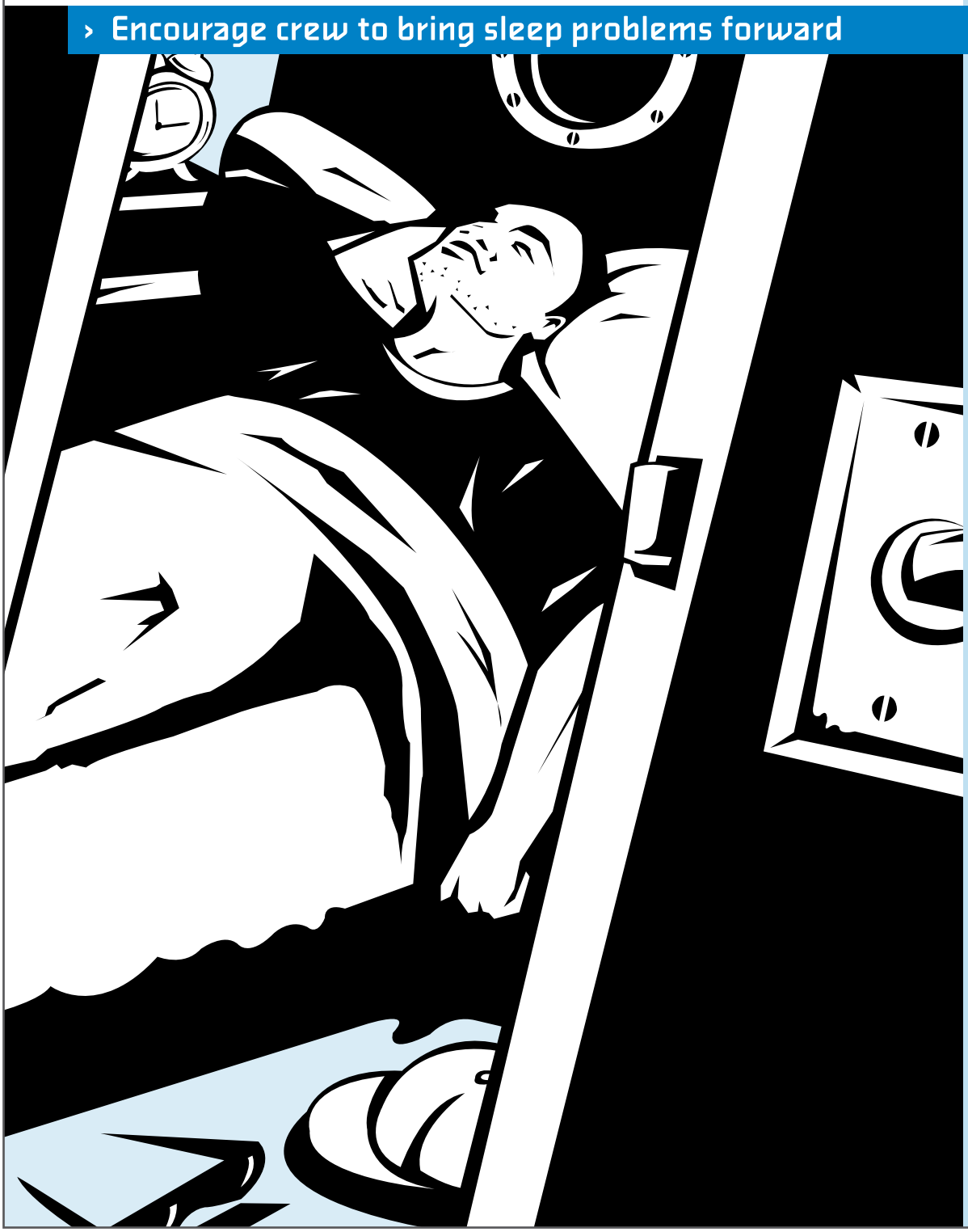
The table below outlines the legal requirements that apply to the management of fatigue, together with suggestions on how to meet them. These requirements are from the Maritime Transport Act 1994 (MTA Act), Health and Safety Employment Act 1992 (HSE Act) and Maritime Rules (Rule).

Table 1 – Laws that apply to fatigue management

LEGISLATIVE REQUIREMENT	EXAMPLES OF STEPS THAT CAN BE TAKEN TO MEET LEGAL REQUIREMENTS
• Employers to ensure methods for systematically identifying and managing hazards (HSE Act s6).	• Survey crew on their experience of fatigue and views on its causes. • Conduct accident and incident analysis. • Provide checklists on "how to identify fatigue in yourself and others".
• Employer to take all practicable steps to eliminate all significant hazards or isolate employees from them (HSE Act s8 and s9). If this is not possible the hazard must be managed so it is minimised (HSE Act s10). • Owner and master must establish and implement procedures to ensure that all crew are fit for duty when keeping a watch (Rules 31A (s26 & 27), 31B (s16 & 17), 31C (s14 & 15)). • When determining a seafarer's fitness for duty the owner and master must take into account the relationship between fatigue, alertness and performance (Rules 31A, B, C).	• Involve crew in determining what causes fatigue and developing the best response to fatigue hazards. • Determine safe manning levels and ensure the vessel is manned to these levels. • Develop and post duty schedules. • Post checklists on how to identify fatigue. • Provide guidance on how to manage fatigued seafarers. • Monitor fatigue levels and risk associated with fatigue.
• Where hazards cannot be eliminated or isolated monitor the employee's exposure to the hazard and report to employees on the results of the monitoring (HSE Act s10). • Owner to carry out internal audits to verify whether safety activities comply with the SSM system (Rule 21). • Logbook to include a record of watchkeeping crew, where a vessel is 45 m or more and proceeds beyond restricted limits. Also applies to all vessels on international voyages (Rule 73).	• Conduct surveys of crew and any others to whom a duty of care applies. • Provide checklists on "how to identify fatigue in yourself and others". • Ensure logbooks include watchkeeping hours. • Encourage medical examinations where appropriate.
• Employer to provide reasonable opportunities for employees to participate in ongoing processes for improvement of health and safety (HSE Act s19B).	• Involve crew in identifying hazards. • Involve crew in determining the best response to fatigue hazards. • Involve crew in on-going monitoring.
• Employer to provide training and supervision to all employees, so as to promote safety (MTA Act s17 (4) (b) and HSE s13).	• Provide training materials and courses, where appropriate. • Provide active supervision. • Keep records and use them as a management tool.

Sleep

- Make a good night's sleep before sailing a priority
- Ensure sleeping environment allows quality sleep
- Allow sufficient time off for recovery
- Encourage crew to bring sleep problems forward



HOW TO WRITE A FATIGUE MANAGEMENT PLAN

Educate before you start

Distribute the brochure *Understanding Fatigue* and discuss with your staff or work colleagues. Your SSM company or local maritime safety inspector may be able to take a short session on fatigue. Sharing training with other vessel owners may lower costs and provide you with additional insights.

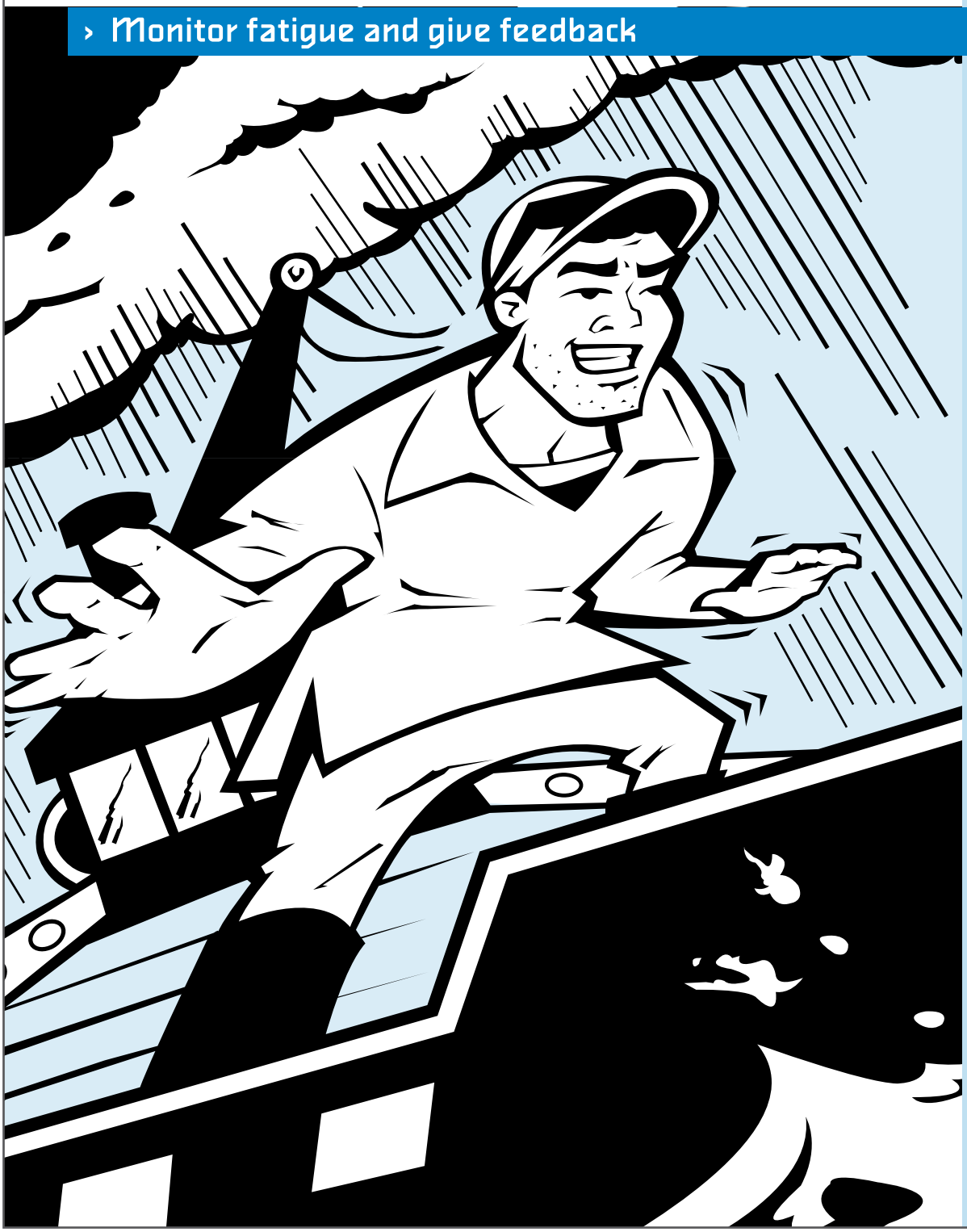
Key parts of a fatigue management plan

Listed below are the key parts of a fatigue management plan, including your main legal responsibilities.

Owner expectations	What is important to the owner, the bottom line for safety. This lets the skipper and crew know how to act in both preventing fatigue and managing it when it can't be prevented.
Identify hazards	Work with your crew, shore staff, and anyone else who may be able to assist, to identify what results in fatigue in your operation. Include both: • what causes fatigue on a regular basis • what occasionally causes fatigue.
Managing hazards judged to be significant	• Your fatigue management plan **must cover the significant hazards identified**. In short, a significant hazard is anything that can potentially cause harm to a person (like an injury accident or a vessel grounding which can lead to an injury). • For each significant hazard identify how it can be eliminated, isolated, or if neither of these can be achieved, how it will be minimised. • For actions on the vessel, record both what will happen on the vessel and what management will do to make sure the hazard is controlled. (Doing this also helps you show the auditor that you are operating an effective approach to fatigue management.)
Managing hazards judged not to be significant	For hazards you identified and judged to be not significant, you must monitor them to see that they don't develop into significant hazards. Note when you will do this and sign off when you do.
Assign responsibilities	Make sure you document each crew member's responsibilities and have them sign an acknowledgment of these.
Train anyone who needs training	Record what training occurs and make sure those who have training sign off on it.
Trial the draft plan	It is usually not possible to get the fatigue management plan totally right the first time. A 1-2 month trial is useful for fixing any problems.
Monitor, review and revise	• Some causes of fatigue may be difficult to manage or may change over time (like crew fitness for duty). These may need to be monitored on a regular basis. • Set times when you will review how well the plan worked, such as at the end of a season. Write any changes into the SSM manual.

Working Conditions

- Ensure rest breaks when conditions are tough
- Discuss watchkeeping policy with crew
- Employ sufficient staff to avoid long work days
- Monitor fatigue and give feedback



DOCUMENTING STEPS FOR AUDIT

Recording who is involved at each step demonstrates what you have done and who was involved.

ACTION	WHO WAS INVOLVED	METHOD USED	SIGNATURE AND DATE COMPLETED
Educate about fatigue: • yourself • staff (Find out information, provide training session with advisor, discuss fatigue together.)			
State your expectations (What is important, safety-wise, that the crew must know? When does safety take priority over production?)			
Identify significant fatigue hazards (Work with others, especially the crew; consider effect of different types of seasons and operating conditions; consider limitations of human biology, especially cumulative fatigue; consider what surprises may crop up unexpectedly.)			
Develop measures to eliminate, isolate or minimise these hazards (Work with others, especially the crew; consider how these measures change for different seasons and operating conditions.) Include contingency plans.			
Identify management actions (These support measures to eliminate, isolate or minimise hazards.)			
Assign responsibilities and train staff (You are legally obliged to provide training where a need exists.)			
Trial the draft fatigue management plan during the shake-down phase. (This is part of SSM procedures, especially for new vessels. It helps sort out any “bugs”.)			
Monitor and review (How are you going to monitor fatigue and operation of your plan? When and how do you plan to review the plan?)			
Revise the plan (This is a management action that follows from the review.)			

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New Zealand Government

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