

FATIGUE MANAGEMENT

▾ *For Charter Boats*



▾ *Get your sleep*
Reduce your risk



GUIDE TO FATIGUE MANAGEMENT FOR CHARTER BOATS

Introduction

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

- an example of a fatigue management plan
- common causes of fatigue on charter boats and what to do about them
- Maritime New Zealand recommendations
- legal obligations
- how to write a fatigue management plan
- documenting steps for audit.

Caution. The Health and Safety in Employment Act 1992 requires employers to have effective methods for identifying and assessing hazards at work. Hazards include situations resulting from physical or mental fatigue. This guide lists situations that others in your industry have identified as resulting in fatigue.

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 the list of hazards in this guide does not remove your obligation to identify all hazards. Every vessel and crew are different and will have their own problems with fatigue and solutions for them.

EXAMPLE OF A FATIGUE MANAGEMENT PLAN

About the company

Fish Guaranteed Charters is operated by owners Bob (the skipper) and Jan (his wife). Demand is heavy over the summer season and moderate over the winter. Charters range from day trips to 4 days.

Bob and Jan's Safe Ship Management (SSM) company had indicated that the SSM manual required updating to include fatigue management. Bob and Jan were aware that Bob was often tired over the summer months, with back-to-back trips common. While they only used one deckhand on the boat, two shared the job.

While the SSM manual did not have to be completed until December, the task was planned to be done over the winter months when there was time to do it.

How they went about developing their fatigue management plan

The Safe Ship Management company recommended that everyone who had anything to do with the operation of the boat should read the brochure *Understanding fatigue*, as this has good information about what causes fatigue. Everyone was given a copy of *Guide to fatigue management for charter boats*.

Bob and Jan decided they would have a shot at making the plan up without using the SSM company. All the reading materials were distributed and a meeting at Bob and Jan's house arranged for 2 weeks later. A week later the partner of one of the deckhands rang Jan to say that the brochure *Understanding fatigue* had helped her understand why her partner was often irritable and moody over the summer, even when he was only working half-time. It had helped them understand her partner's tiredness and what they could do about it.

At the meeting they discussed the brochure *Understanding fatigue* and what it meant for them. Using the list of common causes of fatigue on charter boats and what to do about them, they listed what caused fatigue on their boat. Ideas on how to manage the problems identified were drawn up.

Over the next week Jan wrote up a draft fatigue management plan. This was trialled over the next 4 weeks and Bob kept notes on how things went.

Their plan

Bob and Jan's expectations

Cumulative fatigue should not be allowed to build up such that Bob and the deckhand are tired for most of a trip.

Everyone should start a trip as fresh as possible.

Significant hazards

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

FATIGUE HAZARDS	MEASURE TO ELIMINATE/ISOLATE OR MINIMISE	MANAGEMENT ACTION TO SUPPORT THE MEASURE
Cumulative fatigue from working two or more long trips in a row	Allow enough time between trips for the crew to touch base on family business so any issues can be left behind.	Jan to confirm all bookings and take responsibility for ensuring enough time is allowed between trips.
Cumulative fatigue from working without a break (especially Bob)	At least 2 full days off per fortnight.	Jan to control bookings, as Bob is inclined to take all requests for trips.
Lack of sleep on the boat due to partying by customers	For each trip, one late night allowed (11.00 pm), encourage the guests to be co-operative with some early nights. To be discussed with each overnight trip before confirming the booking.	Put up poster with expectations of customer behaviour. Bob/Jan to record all instances of non-compliance and to monitor how the policy works out in practice.
Bob does all the navigation	Train deckhands to be able to steer the boat when not fishing or near land. Bob to nap, where possible, when the deckhand is steering.	Encourage deckhands to gain the certificated deckhand qualification. Schedule training when the season is quieter.
Tiredness during the day	Crew to nap when opportunities allow.	Bob and crew to discuss what is feasible on each trip. Encourage napping when opportunities allow.
Tired when starting work	Discuss with each deckhand ways to help them get reasonable sleep before working.	Bob/Jan to monitor how things go and to reinforce the need for being fit for duty.

Training

Train deckhands on navigating the boat.

Discuss with deckhands the importance of managing fatigue so they are fit for work when they report for duty.

Monitor and review

Run a 1-month trial to see how well the plan works in practice and to fix any problems.

Schedule a review at the end of the summer season to check how well fatigue was managed. This will include Bob, Jan and the deckhands.

> 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 ON CHARTER BOATS 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 <i>Understanding fatigue</i> 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 <i>Understanding fatigue</i> with their families.

continued...

Sleep continued...

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Poor quality sleep on board	<p>Poor quality sleep is caused by a number of factors, including:</p> <ul style="list-style-type: none"> • 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). 	<p>Poor quality sleep is not restorative. If opportunities to catch up on sleep are not available, cumulative fatigue can become a safety issue.</p> <p>More likely to make mistakes. Injury accidents become more likely, safety decisions more likely to be poorly made.</p>	<p>Fix sleeping environment, if it is a problem.</p> <p>Blackout curtains (possibly using Velcro) installed where possible.</p> <p>Encourage maximum use of breaks for sleep so time asleep is maximised.</p> <p>Purchase sleep masks for crew.</p> <p>Monitor sleep patterns over the work season.</p> <p>Have opportunity for at least 2 nights recovery sleep after each long trip, especially where cumulative fatigue is likely to be a problem.</p> <p>Encourage napping, especially at natural sleep times (3.00 – 5.00 pm, after 10.00 pm).</p>
Noisy engine	<p>Hard to get to sleep, poor quality sleep.</p>	<p>Become fatigued as cannot get enough restorative sleep during rest breaks.</p>	<p>A difficult problem. Reducing engine noise/vibration is the best solution.</p> <p>Check if sound proofing can be added and do so if it can be.</p> <p>Some have found sleeping in the wheelhouse helps a little.</p> <p>Earplugs may also assist.</p>

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Warm/high temperatures in sleeping quarters	Makes falling sleep 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.)
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.

continued...

Working conditions continued...

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Heat/cold	<p>Working in extreme temperatures (hot or cold) impairs performance and workers will not want to work as long.</p> <p>People sleep better when the temperature is cooler.</p>	<p>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.</p> <p>Moving from a hot inside to a cold outside.</p> <p>Poor quality sleep, if the temperature is not right.</p>	<p>Work with employees to monitor the effects on their performance and fatigue levels.</p> <p>Investigate options for cooling/heating/ventilation on board.</p> <p>Ensure there are breaks during the day, so there are more opportunities to reduce stress on the body.</p> <p>When warm ensure there is a plentiful supply of drinking water available.</p> <p>Wear layers of clothing, with the top layer being easy to remove.</p> <p>Investigate options for cooling/heating/ventilation in sleeping areas.</p>
Long work days	<p>Short sleep.</p> <p>Cumulative fatigue.</p> <p>The sleep drive begins to increase rapidly after about 16 hours awake.</p>	<p>Commuting becomes high risk.</p> <p>More likely to make mistakes. Injury accidents becomes more likely, safety decisions more likely to be poorly made.</p>	<p>Employ sufficient staff to allow either shorter days or a smaller number of days worked continuously.</p> <p>Make sure that the number of days worked in a row does not allow fatigue to build unreasonably.</p> <p>Monitor work practices and fatigue levels.</p> <p>Encourage napping, especially at natural sleep times (3.00 – 5.00 pm, after 10.00 pm).</p>

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
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.
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.
Passengers want to party every night, on trips over 2 or more days Passengers talking late into night, disturbing the sleep of crew	Crew cannot get adequate sleep.	Crew become fatigued. More prone to making mistakes and making poor safety decisions. Recovery at sea is unlikely and may get considerably worse.	Agree on what nights will be late and what will be early. Have a policy on compensatory sleep when late nights occur. Communicate rules prior to sailing and post a notice stating them.

continued...

Working conditions continued...

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
Wheelhouse environment	<p>Heater on induces sleep.</p> <p>Wheelhouse chair is a comfortable place to be, especially when fatigued.</p>	<p>Watchkeeper falls asleep.</p> <p>Easy to fall asleep in.</p>	<p>Discuss with crew, address in company policy on watchkeeping.</p> <p>Encourage a flow of fresh air.</p> <p>Check on use of heater.</p> <p>Install a functional chair, not a comfortable chair. (While comfort is great, safety should be the main consideration.)</p> <p>Address as part of the watchkeeping policy – prohibit use of the chair in enclosed waters and on inward transits, unless its use increases safety.</p>
Clothing	<p>Inappropriate clothing can result in crew either being too hot or cold.</p>	<p>Crew become fatigued unnecessarily.</p>	<p>Wear three layers when conditions are cold:</p> <ul style="list-style-type: none"> • synthetic next to the skin to take away moisture • wool or synthetic-pile for warmth • windproof material. <p>Keep the head covered: it is where most heat is lost from.</p> <p>Wear layered socks and insulated boots to keep feet dry and warm.</p>

FATIGUE HAZARD	WHAT MAKES IT A HAZARD?	WHAT IS THE SAFETY PROBLEM?	OPTIONS TO MANAGE IT
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 substitute 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 law requires employers and their staff to manage safety. This includes fatigue. Safety management requirements are found in the Maritime Transport Act 1994 (MTA Act), Health and Safety in 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
<ul style="list-style-type: none"> Employers to ensure methods for systematically identifying and managing hazards (HSE Act s6). 	<ul style="list-style-type: none"> 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”.
<ul style="list-style-type: none"> 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 (Rule 31A, B, C). When determining a seafarer’s fitness for duty the owner and master must take into account the relationship between fatigue, alertness and performance (Rule 31A, B, C). 	Duty schedules. <ul style="list-style-type: none"> Guidance on how to manage fatigued seafarers. Involve crew in determining the best response to fatigue hazards. Determine manning levels. Provide checklists on “how to identify fatigue in yourself and others”.
<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> Surveys of employees and others to whom a duty of care applies. Provide checklists on “how to identify fatigue in yourself and others”. Logbook includes watchkeeping hours. Medical examinations.
<ul style="list-style-type: none"> Employer to provide reasonable opportunities for employees to participate in ongoing processes for improvement of health and safety (HSE Act s19B). 	<ul style="list-style-type: none"> Involve crew in identifying hazards. Involve crew in determining the best response to fatigue hazards. Involve crew in on-going monitoring.
<ul style="list-style-type: none"> Employer to provide training and supervision to all employees, so as to maintain compliance with the fatigue management plan (MTA s17 (4) (b)). 	<ul style="list-style-type: none"> 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. For small operators, this may best be done in conjunction with other vessels.

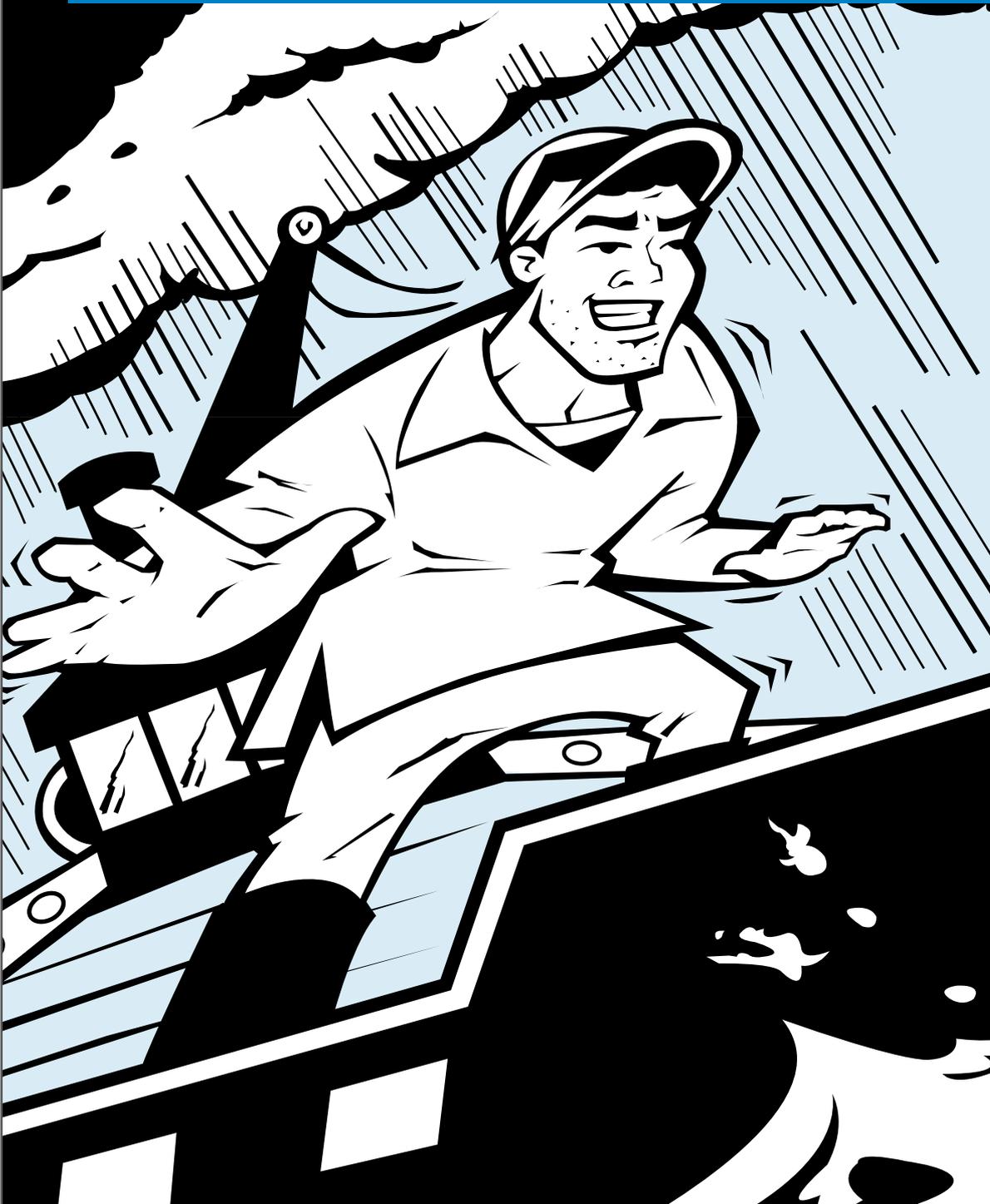
Key parts of a fatigue management plan

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: <ul style="list-style-type: none"> • 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
<p>Educate about fatigue:</p> <ul style="list-style-type: none"> • yourself • staff <p>Find out information, provide training session with advisor, discuss fatigue together.</p>			
<p>State your expectations</p> <p>What is important, safety-wise, that the crew must know? When does safety take priority over production?</p>			
<p>Identify significant fatigue hazards</p> <p>Work with others, especially the crew; consider the effect of different types of seasons and operating conditions; consider limitations of human biology, especially cumulative fatigue; consider what surprises may occur unexpectedly.</p>			
<p>Develop measures to eliminate, isolate or minimise these hazards</p> <p>Work with others, especially the crew; consider how these measures change for different seasons and operating conditions. Include contingency plans.</p>			
<p>Identify management actions</p> <p>These support measures to eliminate, isolate or minimize hazards.</p>			
<p>Assign responsibilities and train staff</p> <p>You are legally obliged to provide training where a need exists.</p>			
<p>Trial the draft fatigue management plan during the shake-down phase.</p> <p>This is part of SSM procedures, especially for new vessels. It helps sort out any “bugs”.</p>			
<p>Monitor and review</p> <p>How are you going to monitor fatigue and the operation of your plan? When and how will you review the plan?</p>			
<p>Revise the plan</p> <p>This is a management action that follows from the review.</p>			



Get your sleep Reduce your risk

Published by

Maritime New Zealand
PO Box 27006, Wellington 6141, New Zealand.
www.maritimenz.govt.nz
2007
ISBN 978-0-478-18853-0