Light bulb causes fire in the hold

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Are you experiencing any of these signs?

**MOODY**
- Feeling grumpy
- Not saying much
- Getting frustrated
- Not caring

**DISTRACTED**
- Stuck on one part of a problem
- Can’t stay focused
- Can’t make sense of a situation
- Can’t finish tasks
- Forgetting things

**UNPRODUCTIVE**
- Cutting corners to get things done
- Can’t properly judge distance, time or speed
- Doing things in the wrong order
- Can’t think logically
- Making mistakes

**TIRED**
- Yawning a lot
- Nodding off
- Slurring speech
- Got sore eyes or blurry vision
- Feeling clumsy or slow

Do these risks ring alarm bells?

- Been awake for more than 16 hours
- Short of sleep
- Slept badly
- Are working alone in the early morning hours
- Feel exhausted

Be aware that it’s possible to both look and feel alert when being at risk of falling asleep. If **two or more of these risk factors ring true**, you’re fatigued and at risk of falling asleep.

ACT NOW!

- Tell another crew member
- Get some sleep (ideally around 2 hours – including at least 15 minutes to wake up)
- Drink some water
- Eat a light meal or snack
- Do a job with minimum risk

**SAFETY = MOSS + HSWA**

For tips on safe fishing go to www.maritimenz.govt.nz/fatigue

Safe crews fish more
Light bulb causes fire in the hold

The heat from a 500 watt light bulb was the cause of a cargo fire in the hold of a container ship, while in port on the East Coast late last year.

The floodlight was unintentionally left on after the hold was filled with timber packs. Some of the timber was destroyed in the fire and other packs charred, but the ship suffered only cosmetic damage, and no-one was injured.

The cut timber had been loaded during the day and the 148 metre vessel was due to sail at the change of tide, when the cargo hold fire alarm sounded just before midnight.

Crew donned breathing apparatus to check the site, and reported smoke coming out of Hold 4. The fire service was called, with multiple vehicles and firefighters responding.

Meanwhile crew released CO₂ gas into the hold via the fixed fire suppression system, and shore firefighters used hoses to cool the boundary when they arrived. Nearby dangerous goods containers were moved away by crane, and the temperatures of the hatch cover and adjoining bulkheads were monitored.
All containers from on top of the hatch were moved to reduce any risk of the fire spreading. A couple of hours later, crew released cleats on the hold hatch, but replaced them again when heavy smoke poured out.

A final decision was made to wait and leave the fire to be smothered. More fire suppressant CO₂ was used. Later that morning, around 11am, the hold was opened up, while fire crews and a fire tug stood by. Damage was found to be limited to the bundles of pre-packed timber.

The burn pattern on the timber and bulkhead showed that the origin of the fire was a fixed floodlight, in a recessed cavity, that had been left on. The floodlights provide lighting for stevedores to work loading and discharging cargo. The protective cage of the bulb is flush with the bulkhead, and the distance between the bulb and bulkhead is just four centimetres. It was found that one timber pack was loaded close to this potential hazard.

A safety bulletin has been circulated to highlight the risks of high wattage lights and the suitable stowage of cargo – especially break-bulk cargo rather than containers. Break-bulk cargo is goods that must be loaded individually – not in bulk (such as oil or grain), and not goods in standard intermodal containers carried by sea, rail and road.

The damage to the ship’s hold was cosmetic only.
All PCBUs (Persons Conducting a Business or Undertaking) involved in ship operations have a responsibility to reduce the risks that are under their control. This is a requirement under the Health and Safety at Work Act 2015 (HSWA).

Consideration should have been given, by both the ship crew and the stevedoring company controlling the loading operation, to the enhanced fire risk from loading wooden packages in a hold designed to take shipping containers.

Isolating the hazard by leaving a clear space between the light and cargo would have prevented the fire.

It could also have been prevented by ensuring all the lights were turned off once loading was complete, or if the 500 watt light bulb had been substituted for an energy efficient equivalent.

Since this incident, the operator has replaced all hold lights throughout the fleet with LED equivalent bulbs to eliminate the risk, even if a light is inadvertently left on in the future.
Fatigue contributes to rudder damage

A fatigued skipper, and anchoring in an unfamiliar area during darkness, contributed to rudder damage on a fishing vessel off the East Coast recently.

The skipper had left port at 5.30pm and headed north to get into position for fishing the next day. But in the early morning he found his usual anchorage being used by other trawlers. So instead the skipper headed further north to a more remote coastline and tried anchoring in a relatively uncharted area, 400 metres from shore.

As he was getting into position, using the vessel’s echo sounder and chart plotter, he noticed a rock awash on his port side. The stabilizer arm became fast on the rock, causing the vessel to pivot.

As the skipper reversed to unhook the stabilizer arm, the steel trawler itself hit the rock. Later that morning a diver confirmed that the rudder was damaged, and the vessel was towed back to port.

The skipper told investigators that the usual echo sounder and chart plotter were not working at the time, as there was an issue with the transducer. He may have not had the chart plotter zoomed in enough when operating close to shore.

Fatigue was also likely to have been an issue, as the turn-around in port had only been a couple of hours. The skipper confirmed he only had about 4.5 hours sleep in the 24 hours prior to the collision.

“Unsafe for navigation” – the chart plotter the skipper relied on to find a safe anchorage.
Lack of sleep can affect judgment and risk the safety of the crew and vessel.

This skipper only had a few hours sleep, during a quick turn-around in port, after being out fishing all day and before heading out again.

Fatigue management is part of an operation’s Maritime Transport Operations Plan (MTOP). It is vital for the safety of all onboard that the skipper and crew stick to the processes that the operator has included in the plan.

This skipper accepts he should have anchored further off-shore as he did not know this area of the coastline. He says he should also have paid more attention to the contour lines on the chart plotter as he was preparing to anchor.

Misinterpretation of the depth of the contour lines on the chart plotter may have contributed to the incident. Skippers must ensure they have a thorough understanding of navigation equipment and how to use it – including temporary replacement systems.

Skippers should not rely on chart plotters alone to identify submerged rocks when operating close to shore. Paper charts and local advice and experience should be a part of the process. As noted during the investigation when the chart plotter was zoomed in it read ‘UNSAFE FOR NAVIGATION’ – which is common for a number of chart plotters used in the industry.

Wake up to fatigue!

For information and tips on preventing fatigue go to: www.maritimenz.govt.nz/fatigue
Crotch strap may have saved kayaker

A kayaker fishing on a Southland river lost his life when he was dragged by the current out to sea across a gravel bar.

The man’s buoyancy vest had ridden up when his body was found in the surf hundreds of metres from the river mouth. He was also some distance from his kayak, which was suitable for use only in sheltered waters.

The Coroner has found that a proper lifejacket with a crotch strap may have helped save the victim’s life. A high-rated lifejacket, such as a Type 401, keeps the wearer vertical in the water and able to breathe – even if they are unconscious.

While an experienced lake and river kayaker, this area was new to the man, who was visiting with friends. He had taken his kayak toward the river mouth that morning to go fishing, and had returned safely to the ‘crib’ for lunch. But when he headed out again about 3pm, he did not make it back.

The alarm was raised when his friend went for a walk and found the man’s kayak floating in surf on the sea side of a large gravel bar separating the ocean and river mouth lagoon. A helicopter search located his body down the coastline, submerged in the surf.

He was wearing jeans, socks and a T-shirt, along with his buoyancy vest. There was no footwear, but he had been seen wearing gumboots when he went out to his kayak. The Coroner found that the man was wearing inappropriate clothing for the environment and the activity. Cold water immersion contributes to fatalities, and denim and cotton provide little insulation.

The bar has a reputation for being deceptively dangerous – with at least one whitebaiter getting carried out to sea each year. There is often a marked fall between the lagoon level and sea levels – resulting in a strong current in the apparently calm lagoon.

Small vessels can easily be dragged to the ‘point-of-no-return’ at the bar, without the occupants realising it. The strongest tidal flow was from 4pm that day – when the man had returned to the water.

While the lagoon was relatively sheltered from the strong south-west breeze, conditions on the bar were extremely dangerous. The river flow, strengthened by the outgoing tide, was pushing against the onshore wind, and this contributed to the waves of 4–6 metres present on the bar.

The victim was not carrying any type of communication device to call for help.

LOOKOUT! POINTS

- This man failed to follow many basic safety precautions. He should have made enquiries about the local conditions, and understood the dangers around the river mouth and bar – especially with the outgoing tide.

- A highest-rating, type 401, lifejacket is recommended. These have the benefit of a collar to keep the wearer’s head supported and above water in an emergency, and a crotch strap to prevent the safety garment from riding up.

- Paddlers and boaters should carry two forms of waterproof communication. For kayakers this could include a hand-held VHF radio, a cellphone in a waterproof lanyard bag, or a personal locator beacon (PLB).

- Waterproof communication devices should be attached to a lifejacket, on a lanyard, or stashed in a pocket.

- Kayaks are prone to capsize – especially open-decked, general-purpose models. To prevent hypothermia, the safest practice is for paddlers to wear a wetsuit, or layer up with woollen or synthetic clothing, such as polar fleece.

- This type of recreational kayak was probably fit for the intended voyage within the lagoon, but not for the sea conditions at the river mouth that afternoon. This model lacked a substantial keel or rudder, and, together with its wide profile, was not designed for efficient handling in turbulent waters.

- River bars are notoriously dangerous for larger vessels, let alone small paddle craft like kayaks or jetskis. Anybody on the water near a bar is well advised to research local conditions. For videos and recommendations about bar crossings go to: www.maritimenz.govt.nz/recreational/safety/crossing-the-bar.asp + search for boatsafetyinnz on YouTube.
A recreational fisherman was unable to save his beloved vessel from being destroyed by fire, because all three fire extinguishers were in or near the engine room which was rapidly engulfed in flames.

The skipper was hove to near the entrance to a South Island harbour around midday, and about to begin fishing, when he heard the engine start to run irregularly. He noticed lots of white/brown smoke coming from the exhaust vent, and went to investigate. Flames and smoke greeted him when he lifted the engine room hatch. The skipper couldn’t close the hatch again, and was unable to use a fire extinguisher as two were in the engine room and the third was stored near the hatch.

Putting the 10.8 metre vessel into gear, he drove for shore – which was fortunately just 150 metres away. Even getting a quick Mayday call off proved a challenge, as fire took hold in the wheelhouse. Smoke stopped him from changing the channel from 62 where it was set, to Channel 16.

After making a quick call with the VHF on Channel 62, the skipper put on his lifejacket and gathered up a PLB (personal locator beacon) and an emergency grab box. He tried to get off over the bow, but could not get past the flames. After jumping over the stern he waded to the rocky shore, and found a safe location before setting off the distress beacon, and later two flares.

A vessel arrived on the scene after about 20 minutes, and stood by, while a rescue helicopter was enroute. Although the weather was fairly mild, the skipper suffered from hypothermia after being soaked through and waiting on the exposed rock for about an hour and a half before being winched to safety. He was also treated for smoke inhalation and slight burns.

The skipper says he has no idea what caused the fire in the engine room of what was formerly a commercial fishing vessel – there was nothing out of the ordinary when he checked it before heading out.

**LOOKOUT! POINTS**

- To use the fire extinguishers stored in the engine room, the skipper would have needed to be aware of the fire as soon as it started.
- Extinguishers need to be placed at different locations around the vessel to enable ready access – not only in the engine room which is where most fires start.
- In this case, if a separate extinguisher had been stored in the stern area, for example, the skipper may have been able to contain the flames – or at least dampen the fire long enough to make a full Mayday call on Channel 16, the official VHF emergency channel.
- This incident also shows that it is better to leave VHF radios on Channel 16. It is also a Maritime Rule (43.4(2)(a)(i)) to listen on Channel 16 while at sea (around the Chatham Islands is an exception).
- This skipper was otherwise well prepared. He had his lifejacket and distress beacon and grab box with flares close to hand. This meant he was able to make it to land and raise the alarm.
- Driving the boat toward the shore was quick thinking and may have saved the skipper’s life. This meant it was easier to get to shore, and it enabled an easier salvage at a later date. The wreck was later dismantled and removed.
A dredge operator had a costly reminder of the value of health and safety (‘toolbox’) meetings when his leg was broken in two places while man-handling a 200kg face plate.

The dredge was alongside an East Coast port when the man decided to rotate the face plate for cleaning. It had earlier been removed with the help of a chain block to enable repair work on the seal of the pump’s main shaft. The hefty face plate had been tethered to a hydraulic tank in the engine room, while the anchor plate was left in the passageway where staff walked over it.

Where there are two PCBU’s (Persons Conducting a Business or Undertaking), they are required to consult, co-operate and coordinate activities under the Health and Safety at Work Act 2015 (HSWA) – which should include holding a toolbox meeting before commencing work. But the company that owns the dredge employed an engineering firm to assist with the repair – and did not hold a meeting with the engineering firm and all staff members (including the victim) to make everyone aware of any possible risks.

While maintenance was being carried out on the pump, two men in the engine room were preparing equipment for reassembly.

When the main operator went to rotate the one-metre diameter face plate, the other man told him it was extremely heavy. The victim started to lose control of it and stepped backwards, tripping on the anchor plate. The face plate landed on the man’s right leg, breaking it in two places.

A company investigation recommended reviewing the procedure for toolbox meetings and how they are documented. The injured man acknowledged he should have used the correct lifting device to move the face plate, and that the anchor plate he had walked over multiple times should have been removed from the walkway and working area.
The operator stepped backwards and tripped on the anchor plate.

**LOOKOUT! POINTS**

- Failure to conduct a health and safety or toolbox meeting with all staff members that were operating on the repair and also between the two PCBUs contributed to this accident.

- Better decisions are made when everyone in the workplace shares their knowledge and experience and takes responsibility for a safe working environment.

- Under HSWA “overlapping duties” means that responsibility for health and safety is shared by the businesses or PCBUs that share a workplace.

- The injured man was not involved with the planning of the work by the engineering company, and was not involved with the removal of the face plate. He did not know that a chain block was needed the first time it was removed.

- The face plate had an estimated weight of 200 kgs, and should have been identified as a hazard. Employees should have been made aware of such hazards. The anchor plate, with its raised edge of five centimetres, should not have been left in the walkway.

- The Health and Safety at Work Act 2015 requires that workers as well as maritime operators (PCBUs) and ships’ masters (officers) have responsibilities for health and safety. This means the employee should have also taken responsibility – by considering his well-being, and that of others around him, before attempting a dangerous task by himself.
Six hours or less sleep a night, broken sleep and irregular work hours lead to a build up of 'sleep debt', a key fatigue trigger. Drinking or taking drugs the night before sailing makes you more vulnerable to fatigue on board. If you’re intoxicated or hung over, stay safe, stay home.

The food you eat can make or break your energy levels. If you don’t eat well or drink enough water you leave yourself open to fatigue. Hard physical work or boring, repetitive jobs like watchkeeping can bring on fatigue. Add stressors like the ship’s motion or extreme weather, and the risk is amplified.

WHAT CAUSES FATIGUE?

TOUGH WORK
Hard physical work or boring, repetitive jobs like watchkeeping can bring on fatigue. Add stressors like the ship’s motion or extreme weather, and the risk is amplified.

POOR NUTRITION
The food you eat can make or break your energy levels. If you don’t eat well or drink enough water you leave yourself open to fatigue.

STAYING AWAKE FOR A LONG TIME
Six hours or less sleep a night, broken sleep and irregular work hours lead to a build up of ‘sleep debt’, a key fatigue trigger.

DRUGS AND ALCOHOL
Drinking or taking drugs the night before sailing makes you more vulnerable to fatigue on board. If you’re intoxicated or hung over, stay safe, stay home.

HSWA
Under the Health and Safety at Work Act 2015, all crew must take reasonable care to ensure that nothing they do on board harms themselves or any other person. Both operators and skippers must make sure the vessel is safe and involve the entire crew in managing any risks. Now is the time for you to raise any safety concerns that you have with your skipper or operator.

SAFETY = HSWA

† Health and Safety Attitudes and Behaviours in the New Zealand Workforce: A Survey of Workers and Employers – Neilson, 2014
* Commercial Fishing Fatigue Survey – Maritime New Zealand, 2018
STRUGGLE TO SLEEP AT SEA?

Every fishing operation is different and there are no hard and fast rules about sleep. The most important thing is that everyone gets enough hours in, so the risk of fatigue is minimised.

“Make sure when you do get downtime, you make good use of it.” — RORY, SKIPPER

“20 minutes during the day is worth 3 hours at night.” — PETER, SKIPPER

“Have a sleep when you can.” — STEVE, SKIPPER

“If someone’s tired get them to sleep.” — STAN, SKIPPER

WHAT ELSE CAN YOU DO?

FOLLOW A ROSTER

A well-planned sleep roster lets everyone get enough sleep (and includes 15 minutes to wake up).

DRESS RIGHT

In the cold, wear 3 layers (including windproof outer), warm hat, socks and insulated boots.

TAKE NAPS

Nap whenever you can — and wear an eye mask and ear plugs to block out light and noise.

DRINK WATER

A lack of water is a main cause of tiredness and low energy levels, so aim for 1.5 litres a day.

USE WATCHALARMS

Alarms don’t prevent fatigue, but they do help prevent accidents when watchkeepers fall asleep.

EAT WELL

A balanced diet of nutritious food gives you the energy you need to help ward off fatigue.

WHO IS RESPONSIBLE

Operator + Skippers + Crew = YOU

Fatigue is one of the biggest factors in causing injuries on fishing vessels. For more information and tips on fatigue go to www.maritimenz.govt.nz/fatigue

Safe crews fish more
The elderly skipper of a powerboat failed to keep a proper lookout and ran his four-metre aluminum vessel into a double sea kayak. The sea kayak was one of a group of four double kayaks on a three-day trip in the Marlborough Sounds on a sunny summer day.

The group was made up of two families in four double kayaks, with children sitting in the front cockpits. A woman in the rear cockpit of a double sea kayak was injured when the powerboat rode up on the back of the craft, damaging the kayak’s rudder. She suffered bruising to her arm and head, and the kayak needed to be replaced by the hire company so they could continue their journey to a Department of Conservation campsite.

The skipper operating the powerboat was distracted from keeping a proper lookout as he was having difficulties with his 20 horse power outboard motor. He reported that there was condensation in the fuel.

The skipper has many years’ experience operating vessels in the Marlborough Sounds, and both he and his wife (who was also onboard) believe they are safe vessel operators. When something unexpected drew their attention however, they failed to keep a proper lookout as required by Maritime Rule 22.5.

They did not realise the kayaking party was in their path immediately before the incident. This was complicated by the fact that their powerboat is operated from the rear with a solid aluminum dodger, or canopy, obstructing the view ahead when the driver sits to steer.

Adults in the kayaking party became concerned as the powerboat travelled towards them.

The injured person made the following comment to Maritime NZ:

“I think the buoyancy aid I was wearing took most of the impact and the boat pushed me forward so I was doubled over lying flat on the kayak. My husband was upset – a family friend of his had been killed in a similar accident – and was shouting at the occupants of the speedboat to get off my kayak.

The speedboat should have given way to us. I don’t think they saw us at all. If they had been going faster it could’ve been a lot worse with far greater injury and damage.”

Maritime NZ investigated the incident and considered prosecuting the skipper. However, due to a number of factors, the skipper was instead issued a written warning to keep a proper lookout.

**LOOKOUT! POINTS**

- It is the skipper’s legal responsibility to ensure someone is keeping a proper lookout when vessels are on the water.
- This skipper could have ensured that his wife was acting as lookout while he focused his attention on the outboard motor.
- When the outboard motor issue was not immediately resolved, the skipper should have taken the motor out of gear. This would stop the vessel from taking off, if the engine was acting erratically.
- This incident could easily have resulted in more serious injuries, especially if the vessel had been travelling faster. When powerboats collide with swimmers, kayakers, water skiers and divers the consequences can be fatal.