No anchor watch results in deaths

Are you ready? Be prepared for an emergency
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Welcome to the June issue of Lookout! with lessons to be learnt from maritime accidents and incidents.

In the March issue our cover story featured a fishing trawler that grounded when it was left to drift at night while the crew slept.

Fortunately no one was injured and the vessel was eventually extracted and towed to port for repairs. In this issue the cover story features a fishing vessel that grounded while the crew slept, but in this case two people died. In both instances there was no one on watch and, despite being available, electronic equipment was not used.

In the guest editorial Maritime New Zealand (MNZ) lighthouse engineer Jim Foye takes us on a tour of New Zealand’s aids to navigation, including the lighthouses, light beacons, day beacons and buoys essential to helping guide vessels safely around our coast.

Our September issue featured a fatal accident involving a weakened spring line and a summary of serious rope accidents over the past 10 years. This issue’s story “Spring line parts” has a happy ending – the crew leader heard the spring lines come under tension, recognised the sound was not right and took evasive action.

We look also at how to set and retrieve nets safely, with a story about a capsize resulting in serious injury. The photographs accompanying this story feature an MNZ staff member demonstrating some of the do’s and don’ts of setting and retrieving nets from small boats.

Our safety feature looks at practical things you can do make sure you are ready in the event of an emergency. This will hopefully challenge you to look at your own emergency preparedness and the practical steps you can take.

Being prepared means realising that an accident can happen to anyone at any time – no matter how experienced you are or how safe your boat is.

Recent editions of Lookout! are now available as web pages on our website www.maritimenz.govt.nz and back issues are available in downloadable PDF.

Catherine Taylor
Director of Maritime New Zealand

Please pass this copy of Lookout! to your friends, family, colleagues or crew, or encourage them to subscribe to print or email copies by emailing publications@maritimenz.govt.nz.
Helping you navigate our coastline

Having a full spectrum of lighthouses, light beacons, day beacons, buoys and other navigational aids is vital to helping guide vessels safely around New Zealand’s coast.

MNZ owns and maintains 141 aids to navigation around New Zealand’s coast, generally outside harbour limits. There are 98 automatic lights (23 classic lighthouses and 75 light beacons), 39 day beacons and 4 buoys. A number of lighthouses, light beacons, buoys and day beacons located within harbour limits are maintained by port companies, facility operators and regional councils.

Three categories of lighthouses are used around our coastline:

- **Landfall lights** – the first to be seen by ships approaching the New Zealand coast
- **Coastal lights** – used mainly for fixing and confirming a vessel’s position along the coastline
- **Harbour lights** – to guide vessels into port.

All of the lighthouses are fully automated, with Brothers Island lighthouse the last to be de-manned, in 1990. A history and photographs of the 23 classic lighthouses maintained by MNZ can be found at [www.maritimenz.govt.nz/lighthouses](http://www.maritimenz.govt.nz/lighthouses).

**Staying switched on**

MNZ usually visits its sites twice a year to ensure they are operating correctly and have not been damaged, with the most remote accessed by four-wheel-drive, helicopter or boat. One of the six-monthly visits involves major maintenance that includes a full operation check of the beacon and power supply, as well as checking the structure and carrying out any property maintenance. The second tends to be a quicker minor maintenance visit 6 months later to ensure the site is still working correctly and has not been damaged.

During routine maintenance visits, key components such as the beacon and batteries are replaced at 85 percent of their expected design lifespan, to ensure the network’s reliability. Larger upgrades are programmed on an annual basis, with one-off projects carried out by specialised contractors.

The network is very reliable, with built-in redundancy including back-up batteries and spare lamps that change automatically.

**On the job**

The role of the lighthouse engineer at MNZ is one of an asset and contract manager, with a mandate to ensure MNZ provides the most reliable cost-effective network it can.

Each type of navigation aid has its own challenges and the work is varied, including managing major restoration and upgrade projects, routine equipment replacements, and resolving property and utility issues.

The job involves working with a large variety of sites, from large classic lighthouses like Castle Point in the Wairarapa to small lateral marks in Milford Sound. It is very diverse and has many

In a country with 8,172 nautical miles (15,134 kilometres) of coastline – much of it rugged and remote – having reliable aids to navigation is essential.
rewards, such as transforming old towers with a new paint job, travelling to remote parts of New Zealand, and showing people through a lighthouse.

**Challenging sites**

Many of the MNZ sites are in very remote locations and require different methods of access to maintain them – a 26 kilometre four-wheel-drive beach access at Farewell Spit in Golden Bay, boat access to Flat Rock near Kawau Island, and helicopter access to Secretary Island at the entrance to Doubtful Sound. Many of the large upgrade projects also need to use vessels and helicopters to get equipment and people to site. The weather is also a major influence on when a site can be accessed safely.

**A modern network**

MNZ has spent a lot of time consolidating and modernising its network of aids to navigation. This process has resulted in greater reliability and reduced costs, as the sites now require less maintenance.

The development of modern energy-efficient long-range beacons has enabled MNZ to solarise many sites that once ran on 230V diesel generator supply. On remote islands this upgrade resulted in significant savings not only in equipment but also in refuelling costs.

LED technology has also allowed improvements in range and visibility of lights with increased reliability and reduced power requirements.

**Monitoring remotely**

MNZ also remotely monitors all the key lights around New Zealand via cell phone and satellite networks. This telemetry system is web-based and reports faults such as the beacon not working at night, the failure of the mains electricity supply, the light operating on the last lamp, or the door security alarm. Any faults are reported to MNZ via an SMS message to a cell phone and to a computer with web access.

The system also allows MNZ to monitor light and battery trends to schedule the routine replacement of equipment before it fails. It allows you to trouble shoot remotely and ensure the parts required to fix a fault are taken to site.

**Enduring symbols**

The role of the lighthouse has evolved from a primary navigation aid for vessels at sea to a navigation tool that complements modern electronic aids such as GPS.

One of the six-monthly visits involves major maintenance that includes a full operation check of the beacon and power supply, as well as checking the structure and carrying out any property maintenance.

This has meant reductions in the size of battery and number of solar panels required to ensure the autonomous operation of an aid.

Many classic lighthouses that MNZ maintains were manufactured and designed in New Zealand and are a monument to early industry and economic development through trade, and a lost way of life through the demanning process in the 1980s.

While these lighthouses still provide visual confirmation of position and spatial awareness for vessels at sea, they also attract many national and international visitors, have passionate local support, and are an enduring symbol of safety and reassurance.

**Jim Foye**
Lighthouse engineer
Maritime New Zealand
No anchor watch results in deaths

The crew of a longline fishing vessel had to abandon ship in violent seas at night after she grounded on rocks. The skipper drowned and one crewmember’s body was never recovered. Two other crewmembers were tossed against rocks in stormy seas for hours. Before the grounding, no one had been keeping an anchor watch.

The skipper anchored in a large bay. To get there, the vessel steamed about 20 nautical miles past a safe and open port and instead anchored approximately 300 metres from a rocky coastline in about 2 metre seas.

The nearby port’s harbourmaster saw the vessel ‘punching’ through the seas and thought it peculiar for the vessel to stay at sea in such conditions. About an hour before the vessel weighed anchor, a nearby wave buoy recorded wave heights of 3.2 metres, reaching 6.2 metres and increasing.

Soon after midnight, the crew all turned in for the night. No anchor watch was kept. The vessel was fitted with radar and a GPS, depth sounder and course plotter, but none of these were set to supplement an anchor watch or provide an alert.

At about 3am, the crew were woken by heavy waves battering the vessel. They soon discovered the vessel had dragged her anchor and was almost aground against the rocky coastline.

Wave buoy recordings show that by this time the swells had increased to 5.2 metres, reaching a maximum of 9.1 metres. At the vessel’s position, the waves would have been significantly higher in the shallow water.
LOOKOUT!

POINTS

- Given the weather conditions from the outset of the voyage and the forecast, the vessel should not have set sail. Once en route, there were two ports within timely reach of the vessel where she could have berthed safely.

- The position the skipper chose to anchor in was unsuitable for the conditions, but the skipper did not seek local knowledge about a better location from Marine Radio or the harbourmaster.

- No anchor watch was kept by the crew. Maritime rules require that a proper lookout is maintained at all times and, given the conditions, was essential for the safety of the vessel.

- In addition to its four crewmembers, the vessel was fitted with radar and a GPS, depth sounder and chart plotter, which could have been set to assist the designated watchkeepers. Failing to maintain an anchor watch appeared to be standard practice on this vessel.

- The company that had contracted the vessel had adopted a ‘hands-off’ approach to monitoring the safety performance of vessels it contracted. The operations manager knew this vessel was departing into the storm and, despite discussing the potential catch with the crew, made no mention of the weather. It was company policy to neither require nor dissuade a crew from undertaking a particular voyage.

- The need for keeping an anchor watch, particularly in adverse weather or when anchored on an open coastline, should have been reinforced by the contracting company. Both factors applied in this case and the failure directly contributed to the loss of the vessel and two lives. This dangerous failing could have been identified and corrected.

- As a result of this tragedy, the contracting company was fined and required to pay reparations to the victims’ families. The court found that the company failed to implement adequate policies or processes to ensure the vessel’s crew properly followed maritime rules by ensuring a proper anchor watch was kept.

Waves had damaged the vessel, and she was set in to the shore with big seas breaking over her. The crew attempted to recover the anchor, but the winch would not operate. Attempts to cut the anchor wire with bolt cutters failed.

When the vessel hit the rocks, the skipper gave the order to abandon ship and set off a distress beacon. All four on board dived into the seas. The skipper and one crewmember drowned.

The two remaining crewmembers spent hours in the water, being smashed by waves. One suffered a collapsed lung and extensive cuts and bruising. The other managed to crawl onto a small beach and suffered hypothermia. They were eventually rescued by helicopter and flown to hospital.
One of a bulk carrier’s two aft spring lines failed while it was being shifted just five metres along the berth to allow unloading.

The engines were not being operated and the vessel was being shifted by deck winches alone. As the vessel was being manoeuvred aft, the aft spring lines came under too much tension. Combined with the convex shape of the vessel, this caused the aft spring lines to ride up and rub against a stanchion of the deck rail. The sharp edge of the stanchion effectively cut through one of the aft springs, which parted.

The operation did not require any ropes to be moved from their original mooring bollards on the wharf. No shore-side personnel were required, except for the crew leader, who was responsible for informing the winch operators when the vessel was in the correct position.

Fortunately, the crew leader heard the spring lines come under tension and recognised that the sound was not right. He also noted that the aft spring lines reduced in diameter as they came under increased tension and stepped back into the wharf gear-store doorway, protecting himself from any recoiling line.

“Fortunately, the crew leader heard the spring lines come under tension and ... stepped back into the wharf gear-store doorway, protecting himself from any recoiling line.”

Main: The failed line. Top right: The vessel was being moved 5 metres aft so the unloading tower could reach the next hold. Bottom: The aft spring lines rode up and rubbed against a stanchion of the deck rail.

LOOKOUTPOINTS

- The recoiling force of parted lines is a well-known hazard to crew on board and standing on the dock. People have been killed after being struck by rebounding lines.
- Good observation is a key safety factor when handling lines. An experienced crewmember who is in direct communication with the deck winch operators should be positioned to monitor the tension being applied throughout each manoeuvre.
- When a vessel manoeuvres itself along a wharf, the fore and aft crews must work together, which requires good communication skills.

See Issue 14 of Lookout! for more on spring lines.

www.maritimenz.govt.nz

Spring line parts
“Because they were both seated facing forward, they did not see the waves breaking over the stern”

Fatal capsize on fishing trip

One man died and his companion swam to safety after a kayak took on water and capsized.

Two men sat facing the bow of their large plastic sit-on kayak as sea-water slopped into its hull through the open aft hatch.

Eventually the kayak capsized, spilling the men into the water. One was able to swim to safety, but the other drowned.

The men had set off for an evening of fishing in a fairly remote area. As they headed to the fishing spot, they shared the paddling and drank alcohol. Neither was wearing a lifejacket.

At the fishing spot, they removed the anchor from the aft hatch and anchored stern-to into moderate seas. Because they were both seated facing forward, they did not see the waves breaking over the stern and slopping into the aft hatch, which had been left open.

After about 20 minutes, the men realised the kayak was getting low in the water and closed the hatch. As they were trying to pull up the anchor, the free surface effect of the water inside caused the kayak to capsize. Both men were tossed into the water and started swimming together towards a nearby island.

One man was swimming strongly but, stopping to check on his companion, he realised the other man was out of his sight. He swam back to where he had last seen his friend but, unable to find him, carried on to the island. He was seen by members of the public and rescued.

An aerial and sea search was unable to find the other man. His body was later recovered by Police divers.

LOOKOUT! POINTS

- Neither man was wearing a lifejacket.
- The men had been drinking. Alcohol impairs perception and judgement, can cause disorientation and increases the body’s susceptibility to cold.
- The kayak was a popular plastic model that has no watertight compartments or other forms of enclosed buoyancy in the hull. When a large volume of water enters the hull, it is subject to free surface effect, which causes instability. Those on board can remain unaware that a vessel is taking on water until it is too late and the vessel capsizes.
- Additional buoyancy can be added to this type of kayak through the aft or forward hatches. Buoyancy bladders, polystyrene or even sealed plastic containers such as milk bottles can help prevent a kayak from sinking.
- If the vessel does capsize, these materials will make it protrude higher out of the water, allowing rescuers to see it more easily and people in the water to use it for flotation.
- Opening a hatch in seas capable of putting water on the deck is hazardous and should be avoided in all situations apart from an emergency.
- Kayak pumps are widely available and the water could have successfully been removed if one had been available.
- If the men had been equipped with a distress beacon or a waterproof hand-held VHF radio, or if either man had been carrying a cell phone in a sealed plastic bag, they would have been able to call for rescue rather than risk swimming to shore.
- The men were not aware of the sea’s state and its effects on their vessel. Skippers of small craft should position themselves so they can continuously observe the direction waves are coming from.
Are you ready?

You are out in your runabout on a cold day, the fishing has not gone well and the sun will be setting in four hours. You decide to call it a day and return to the boat ramp early. Your partner will not be expecting you back for another seven hours. Shortly after setting off, your vessel starts to take on water – due to a split in the hull – and sinks. You find yourself in the water...

There have been several accidents resulting in fatalities from similar scenarios to this one. Being prepared means realising that an accident can happen to anyone at any time – no matter how experienced you are or how safe your boat is.

Are you ready for any emergency?

Being ready for an emergency is not just a case of throwing a few lifejackets into your boat before departing for a trip. A responsible skipper will be mentally prepared for the unexpected and take the time to ensure all bases are covered.

Training is essential

Taking the time to think about and practise what to do in a range of situations that you normally do not encounter can make all the difference in a real-life emergency. Knowing what to do and when to do it could save your life and the lives of your family, friends or crew.

The following simple techniques will help you to prepare for an emergency. These will vary according to your boat size and type.

Conduct regular and simple exercises, such as:

- briefing your crew and passengers before setting out – you are responsible for their safety
- putting on your lifejacket and ensuring it is fastened correctly
- familiarising yourself and your crew with your distress communications (what they are, what they do, how you would use them)
- working through different scenarios (for example, person overboard, capsize and collision)
- how to handle rough conditions caused by an unexpected wind change
- fire drills
- practising or discussing in-water survival – understand and talk about the correct techniques
- checking and making sure you understand how to use emergency and other equipment on board your boat.

Lifejackets – useless unless worn

Ensure that:

- there are enough lifejackets for each person on board and they’re of a suitable type for the area and your activity
- each person’s lifejacket is the right size and fit – you will be much safer with a crotch strap to prevent riding up
- you demonstrate how to put on a lifejacket before setting out, and ask all those on board to put on their lifejackets
- you try out your lifejacket in the water before you need to use it in an emergency
- lifejackets are worn in boats under 6 metres, unless the skipper expressly gives permission to remove them (note that wearing a lifejacket is mandatory on pleasure craft in situations of increased risk)
- if not worn, lifejackets are easily accessible.

If you find yourself in the water unexpectedly, your chances of survival will be significantly improved if you are wearing a properly fitted lifejacket and have an effective means of calling for help.

For more information, visit our website: www.maritimenz.govt.nz/lifejackets

Communication is key to your survival

There are several ways you can signal that you need help. One of the critical factors in a survival situation is being able to tell emergency services that you are in distress and where you are. There are several methods of doing this:

- VHF radio channel 16 MAYDAY (waterproof hand-held models are available)
- distress beacon (EPIRB or PLB)
- flares (orange smoke, red handheld or red parachute/rocket).

Remember, if your boat goes down or capsizes all of the above need to be accessible. They are no good if you can’t reach them or water has damaged the radio.

Other means of communication that may be of use are:

- mobile phone (if in range and protected from water)
Being ready for an emergency is not just a case of throwing a few lifejackets into your boat before departing for a trip.

- waterproof torch (to attract attention at night).
- Consider options carefully – staying with the boat is best and swimming to shore is almost always a poor option.

For more information, visit our website:
www.maritimenz.govt.nz/communications

**Person overboard – know what to do**

There are four basic things to remember when a person goes overboard:

1. **Shout** very clearly “man overboard” so that everyone on board is aware of the emergency.
2. **Throw** a life buoy, throwing line, cushion or anything else to hand that will help the person in the water to float, and mark their position.
3. **Watch** the person in the water carefully and have someone on the boat point continuously at them. Record their position on the GPS if you have one.
4. **Stop** immediately, to keep the distance between the person in the water and the boat to a minimum.

Remember that when you turn, the stern (back) of the boat swings, and therefore the propeller of the boat swings, and therefore the propeller touches it.

In the water, the more layers of clothing you have on the better insulated you will be, as clothing acts as a barrier against heat loss. If you have time, put on any extra clothing you have.

**Is your boat up to the job?**

Whether you are buying a boat, taking it out again after a period of not using it, or using it frequently, regular checks are the only way to ensure you will have trouble-free boating.

Give your boat a once-over, checking that everything is in good working order, and have the engine serviced regularly. Replace the battery regularly.

**Can you access your gear if your boat sinks?**

Do you know whether your boat will sink, will float with just the bow above water, or will float level? Equipment such as flares or a distress beacon should be able to be retrieved from a boat that is floating level, even if it is upside down. Unless properly protected, electronic equipment will be useless as soon as water touches it.

Many accidents have shown that equipment cannot be retrieved if the boat floats bow up, even by experienced swimmers or divers. Put together a floating ‘grab bag’ that contains the emergency gear you will need if your boat capsizes.

**Clothing – layer up**

In the water, the more layers of clothing you have on the better insulated you will be, as clothing acts as a barrier against heat loss. If you have time, put on any extra clothing you have.

**Know what to do if you find yourself in the water**

Knowing what will happen when you unexpectedly end up in the water will lessen any tendency to panic. Certain techniques can improve your chance of surviving long enough to be rescued. In summary, these are:

- try not to panic
- wait a few minutes until shock subsides before deciding what to do or calling for help
- wear a lifejacket
- wear as many layers of clothing as you can
- float, don’t swim – keep movement to a minimum
- where possible, get out of the water
- if you have to stay in the water, adopt the HELP (heat escape lessening posture)
- for groups of three or more, adopt the huddle position (waves can make this difficult)

**Be firewise**

Have you practised what you will do in the event of a fire? Do you have a suitable extinguisher and do you know how to use it? Have you had it serviced and checked the expiry date? There are different types of extinguisher for fighting fires on board a vessel: dry powder, CO₂, water and foam.

Think about the type of fire that could occur on your vessel (for example, wood, electrical, fuel or gas) and the type of extinguisher you need to carry.

Keep an eye out for our Lookout! safety feature on firefighting later this year.

**Do you also have these on board?**

- Boat hook and throwing line
- Warm clothing
- First aid kit
- Navigation equipment
- Bailing system
- Rope
- Waterproof torch
- Alternative power (a spare outboard, oars or paddles).

Sources include information from the MNZ website and Safe Boating: an essential guide.
One man was taken to hospital unconscious after becoming trapped under a capsized boat while hauling in a net.

The man and two companions set off in late morning to retrieve a net they’d set the day before. As they worked, the moderate seas became rougher and waves began slopping over the transom of the boat.

Further waves capsized the boat, trapping the man underneath. It was about 30 minutes before he could be dragged free, unconscious and with water in his lungs.

The man was taken to hospital and put into an induced coma. He regained consciousness three days later.

The man and one of his two companions were wearing lifejackets.

Photos: Simon Leonard (featuring MNZ’s Domonic Venz).

**LOOKOUT!POINTS**

- Setting and retrieving nets and set lines by hand from a small recreational vessel is a high-risk activity. Lifejackets should be worn in any situations of increased risk. In this instance, the man and one of his companions wore lifejackets, which probably saved the man’s life.

- Loading any weight – in this instance, a set net – will affect a vessel’s stability. Once a vessel becomes unstable, capsize or foundering can happen quickly in rough seas. Stability is also affected by an uneven distribution of weight. Those on board should stand so that their weight is evenly distributed, rather than all leaning over one side to see what is being hauled on board.

- When water is on board, free surface effect will cause the water to seek the lowest point of the vessel, adding to the list that caused the original low point and reducing freeboard.

- Particular care should be taken in poor weather, which significantly increases the danger of setting and retrieving fishing nets.

Check the weather forecast before going out, and postpone setting or retrieving nets or set lines if conditions are poor.

The right way to set a net is shown above.
A container ship’s portable gangway crashed into the sea while the crew was moving it from the wharf with a forklift.

The forklift operator was attempting to shunt the gangway towards the middle of the ship, so it could be reached by the ship’s crane and lifted on board in preparation for sailing.

The end of the gangway was not secured to the forklift tines and it slipped off into the sea. Luckily, no one was injured and the gangway was later safely recovered.

Above: This container ship’s portable gangway slipped off the forklift’s tines and into the sea while it was being moved along the wharf. The picture is of the new gangway.

LOOKOUT! POINTS

- The ship’s master has since directed that when the portable gangway is used, it should be taken down before high tide, to reduce the angle it rests at from the ship to the wharf, and should be tied off with a securing line when moved.

- A forklift was a poor tool for this operation. A mobile crane or telehandler with proper rigging equipment would have been safer.

- The forklift was being operated by the ship’s crew, although it was owned by the stevedore company. The ship’s crew has since been reminded that they must hold a forklift licence to operate a forklift on New Zealand’s wharves.
Lights for small craft

At night all boats are identified by the pattern of lights they display. This pattern of lights also helps you to know which way a boat is heading.

- All boats must comply with the regulations concerning lighting. Check that the lights fitted to your boat are showing through the correct arc.
- Lights must be switched on from sunset to sunrise and in rain and fog.
- Failure to display the correct lights may result in fines or prosecution.

There are the lighting requirements for all vessels underway:

**Powerboats over 12 metres in length (including a sailing boat if it is operating its engine)**
Display red and green sidelights, a white sternlight and a white masthead light.

**Powerboats less than 7 metres in length and not capable of speeds over 7 knots**
Need only display an all-round white light.

**Powerboats less than 12 metres in length**
May combine their stern and masthead lights to one all-round white light.

**Sailing boats motoring or motor-sailing**
Are considered to be powerboats and must display sidelights, a sternlight and a masthead light.

**Dinghies and kayaks**
All non-powered boats under 7 metres in length, such as a rowing dinghy, canoe, kayak or sailboat must show a white light or torch to indicate its presence.

**Masthead light**
Masthead lights shine forward in a 225 degree arc and must be at least 1 metre above the sidelights.

**Anchor light**
Every boat at anchor must show only a white light that is visible from all directions between sunset and sunrise.

**Range of lights**
On boats up to 12 metres in length, white lights must have a range of 2 nautical miles and sidelights a range of 1 nautical mile.

This information is sourced from Safe Boating: an essential guide.
An unlit yacht was hit by a larger yacht in a peaceful anchorage a couple of hours after sunset.

The crew of the larger yacht had no reason to think they were about to collide. The wind had changed, and they were in the process of moving their vessel to a safer spot when they suddenly saw the smaller yacht reflected in their own side lights. The vessels were only a few metres apart and collision was unavoidable.

The smaller yacht was sitting at anchor, but displaying no lights. Luckily, the larger yacht was manoeuvring slowly and, although both vessels were damaged, no one was hurt.

**LOOKOUT! POINTS**

- If the smaller yacht had been displaying the all-round anchor light required by law, it would have been easily visible. All vessels, apart from those in a designated mooring area, are required to display lights from sunset to sunrise. White anchor lights should be clearly visible from all directions and from 2 nautical miles (about 3.7 kilometres) away. Cabin lights are not a substitute for correct anchor lights. *The correct lights for small craft are shown on page 14.*

- Moving vessels must display the correct lights to indicate their size, direction of travel and whether they are under power or sail. A single white light usually indicates a vessel at anchor or a stern light, and is a warning to keep well clear.

- Skippers of vessels not displaying the correct lights are responsible for the injury or damage caused to both craft, and may also be prosecuted under the Maritime Transport Act.

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**Wear your lifejacket**

- it’s that simple.

Look after your family, look after your mates, and look after yourself – wear a lifejacket.

For more safety tips and info

www.maritimenz.govt.nz or 0508 22 55 22.

New Zealand Government
Fuel spills during sinking

Seven hundred litres of fuel escaped from the tanks of a concrete-hulled passenger vessel after it sank in inland tidal waters.

The vessel was on a sightseeing tour with eight passengers on board. It was positioned close in to the shores of a small group of islands to view some native birds, when the current caught the bow and swung it around. The bow lightly struck what was probably a rock under water, causing a bulge about the size of a basketball in the concrete hull.

When water started flooding into the engine room, the skipper contacted another tourist vessel in the area. The other vessel arrived on scene and the passengers were safely transferred onto it. Meanwhile, the vessel’s owners arrived by helicopter, bringing extra pumps and equipment.

The vessel’s skipper dived under the bow to try to repair the leak using a fast-setting cement patch, while the pumps were run to deal with the influx of water.

Believing the patch was holding, the crew decided to tow the vessel back to port. However, about four-and-a-half hours after hitting the rock, it was clear the crew would have to abandon ship. Within another two hours, the vessel had sunk in about 350 metres of water.

“The vessel’s skipper dived under the bow to try to repair the leak using a fast-setting cement patch”

The vessel sank in about 350 metres of water and the fuel dispersed over several days.

Before abandoning the vessel, the crew did not close the fuel tank breather pipes, stating later that it would have been too dangerous to do so.

On this occasion, the vessel sank in deep water, the pressure of which would have been enough to crush the tanks and allow the fuel to escape anyway.

It is advisable to close the breather pipes early if there is any possibility of sinking. In this case, the leaked fuel dispersed over several days without causing long-term environmental damage.

The vessel’s crew and its owners did not advise the Rescue Coordination Centre New Zealand (RCCNZ), the Marine Pollution Response Service or the local regional council about the sinking until the following morning, believing that nothing could be done until then. However, all response units prefer to be advised as soon as possible, so that preparations can be started (even if units are deployed only to be stood down again).
A rescue vessel careened into the side of a jet ski, knocking the rider into the water, fracturing her ankle and breaking several of her ribs.

The rider was one of four competitors in a women’s novice personal water craft (jet ski) race. She was wearing a full face helmet, as required by the organisers, and was travelling at more than 40 knots.

The rescue vessel was on its way to begin a training exercise. It was manned by the skipper and four crew members, and making about 25 knots.

Due to an administrative error, the skipper and crew did not know the area was being used for a race. The course had not been closed because the race stretched over 8 kilometres and few vessels were expected in the area. Marker buoys were in place and race marshals were positioned around the course to monitor competitors’ safety.

As the rescue vessel drew closer to the race course, the skipper and crew noted the jet ski at about 300 metres distant. The skipper assessed that the two vessels were on a collision course, but as his was the stand-on vessel, he held the vessel’s course and speed.

At about 150 metres distant, the skipper realised the jet ski rider had not seen his vessel and was not taking evasive action. The skipper sounded several short blasts to alert the jet ski rider, but still held the vessel’s course and speed.

At about 30 metres distant, the skipper started a sharp turn to starboard, and seconds later the vessels collided.

The rescue vessel rode up over the starboard side of the jet ski, knocking its rider clear. The vessel’s propellers cut over the jet ski, rendering it a write-off.

The rescue vessel’s crew immediately retrieved the rider from the water and administered first aid before transferring her to another vessel for the trip to shore. She was taken to hospital by ambulance with a fractured ankle and several fractured ribs.

The rescue vessel suffered damage to the port side and a broken skeg on the starboard outboard engine.

Above: The rescue vessel’s propellers cut over the jet ski. Bottom left: The jet ski rider was knocked into the water when the rescue vessel rode up over its starboard side and the jet ski was written off.

The rescue vessel was the stand-on vessel in this accident, as detailed in Maritime Rule Part 22 – Collision Prevention. Therefore, it was the jet ski rider’s responsibility to give way while the stand-on vessel held its course and speed.

However, Rule 22.17 – Action by Stand-on Vessel also makes it clear that a stand-on vessel must take action to avoid a collision where a give-way vessel is not fulfilling its responsibilities. In leaving his starboard turn until his vessel was just 30 metres from the jet ski, while covering about 12 metres per second, the skipper of the rescue vessel did not actively avoid the collision.

The jet ski rider was wearing a full face helmet, which limited her range of vision to about 80 degrees on either side. In a normal situation, this would require her to physically move her head from side to side to maintain a proper lookout. If she had done so, she probably would have spotted the oncoming rescue vessel and been able to avoid it.

The race had been notified to the rescue service, but staff rostering meant the notice had not reached all staff. A procedure has now been put in place to rectify this information gap.

View the full report online at: www.maritimenz.govt.nz
Purpose
This bulletin is issued to highlight dangerous confined spaces onboard ships, some of the lethal hazards present, how best to reduce the risks involved and to alert people to the hazards of poorly planned rescue attempts.

Warning – risk of death
Life is risked every time someone enters an enclosed or confined space without following the correct procedures.

The space may be deficient in oxygen.
Oxygen deficiency can be caused by:
- rusting steel or chain
- rotting organic matter
- drying paint or coatings
- motors/petrol pumps
- refrigerants and other gases
- hot work (torching or welding).

The space may also contain flammable or toxic fumes, gases or vapours.
Carbon monoxide damages your ability to absorb oxygen and this effect can also accumulate for days after exposure. Hydrogen sulphide is highly poisonous, often lethal and can evolve from fuel tanks, pipes, sewage and organic decomposition.

Enclosed or confined spaces
A dangerous enclosed or confined space is a space with the following characteristics:
- severely limited natural ventilation
- capacity to accumulate or contain hazardous atmosphere
- exits that are not readily available
- designs that are not meant for continuous occupancy.

Examples of enclosed spaces are:
- cargo holds
- pump rooms
- fuel/bunker tanks
- chain lockers
- paint/chemical lockers
- sanitary/waste tanks
- pipe tunnels
- peak tanks
- battery lockers
- boiler furnaces
- ballast tanks
- void spaces
- fresh water tanks
- double bottom tanks
- engine crankcases
- cofferdams
- any other poorly ventilated confined space.

Precautions and procedures
Familiarise yourself with the health and safety advice provided in the MNZ Code of Safe Working Practices for Merchant Seafarers, the Department of Labour information sheets – Safe Working in a Confined Space, and IMO Resolution A.864(20). These documents describe how to establish procedures for entry into enclosed spaces and should be considered in addition to identifying all of the confined spaces on board that may pose a hazard. Procedures include examples of permit to work systems and the rationale on how to apply them on board for both the ship's crew, and importantly, all contractors working on board.

Before entry
The space should be assessed by a person with sufficient knowledge and experience to ensure that the:
- potential hazards of the space are identified
- space is prepared for entry
- space is secured for entry
- atmosphere of the space is safe for entry, involving a test of the atmosphere whenever necessary.

On entry
On entering a dangerous space ensure that:
- you never carry out entry work alone
- you have a person assigned on safety standby for each entry
- the person on standby is equipped with the right equipment to be able to raise an emergency alarm, adequate protective clothing and sufficient equipment to initiate a rescue
- the space is well ventilated.
If things go wrong
If you see someone lying motionless, even if at the bottom of a ladder in an enclosed space, DO NOT rush in to carry out a rescue by yourself. Typically, personnel react by rushing into lethal atmospheres under the misconception that they will be able to save colleagues. But unplanned rescues are likely to end in tragedy.

When an emergency occurs the alarm should be sounded so that back-up is immediately available to the rescue team. Under no circumstances should the attendant enter the space before help has arrived and the situation has been evaluated. The safety of rescuers entering the space must be ensured.

Rescue procedures
Full consideration should be given to rescue procedures and specifically that:

- rescue procedures should be planned before entry and taken into account in any risk assessment
- the rescue procedure should be specific for each type of dangerous enclosed or confined space
- rescue equipment should be immediately available
- breathing apparatus should be self contained breathing apparatus (SCBA) and NOT emergency escape breathing devices (EEBDs)
- any rescue procedure should be practised frequently enough to provide a level of proficiency that eliminates life-threatening rescue attempts and ensures an efficient and calm response to any emergency.

Further reading
http://www.maritimenz.govt.nz/Commercial/Shipping-safety

Department of Labour Safe Working in a Confined Space 

IMO recommendations for entering enclosed spaces aboard ships, annex to Resolution A.864(20) adopted 27.11.97 

LOOKOUT!

Young people on board a commercial vessel fired emergency flares over the bridge of a local ferry and onto shore on the Saturday night following Guy Fawkes.

The expired flares were intended for disposal on shore, but were seized by a group of young people who had been drinking alcohol on board that evening.

The group had set off fireworks earlier in the evening and the skipper, who was the father of one of the group, had turned in for the night. He was woken from sleep and came on deck just as the last emergency flare was being fired into the water.

Passengers on board the ferry were attending an end-of-year function for senior students at a local high school. They saw a flare being fired vertically into the sky. A second flare was fired into a nearby hillside, where it continued to burn. Fortunately, no vegetation caught fire.

The ferry’s skipper motored over to the commercial vessel and spoke to one of the young people about the dangers of firing emergency flares. The young person responded that as it was Guy Fawkes, firing flares was okay.

The ferry resumed its course and shortly afterwards three more flares were fired over the ferry at shallow angles. One landed on the shoreline, where it burnt out, and two others landed in the sea.

LOOKOUT!

Flares are not toys. They contain explosive chemicals and burn at extremely high temperatures. If they are let off the wrong way, they can cause serious injuries and fires. Given the consumption of alcohol on board, it was fortunate no one was injured during the firings and that no vegetation caught fire from the two flares fired on shore into an environmentally sensitive area.

It is not known whether any of the flares were intentionally fired at the passenger ferry, but doing so constitutes a serious offence. The skipper of the recreational vessel didn’t know what the young people were doing, but as master he had the final authority for the control of his vessel and maintenance of discipline on board. MNZ formally warned the master, who indicated there would be no repetition of the incident.

The unwarranted discharge of emergency flares is an offence under the Maritime Transport Act. It is also an offence to operate a ship in a manner that causes unnecessary danger or risk to any other person or property, irrespective of whether or not any injury or damage occurs. Both of these offences carry a term of imprisonment of up to 12 months or a fine of up to $10,000 for an individual. A similar penalty applies to anyone making a hoax distress signal or call.
Maritime fatalities 2010

From 1 January to 31 March 2010 there were 5 fatalities – 0 in the commercial sector and 5 in the recreational sector.

This compares with 1 commercial and 10 recreational fatalities for the same period in 2009.

New SBEG edition

The 2010 edition of Safe Boating: an essential guide is now available, along with an updated Safe Boating in New Zealand DVD. You can order copies of these by emailing publications@maritimenz.govt.nz.

Free subscription to Lookout! and Safe Seas Clean Seas

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