

LESSONS LEARNT
BY ACCIDENT

LOOKOUT!

MARCH 2009 ISSUE TWELVE

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proves fatal***



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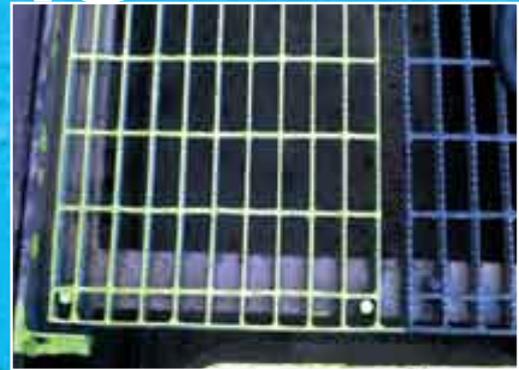
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LOOKOUT!

>Welcome to the March issue of *Lookout!* – the first for 2009. We’ve had a challenging start to the year, with a larger-than-usual number of fatalities, accidents and near misses in the recreational boating sector.

This issue features a guest editorial from Bruce Reid, CEO of Coastguard, who gives us his perspective on the holiday season and the importance of heeding basic safety messages. Among other things Bruce’s editorial reinforces the need to carry effective emergency communication devices and lifejackets. The fatalities discussed in two of the stories in this edition of *Lookout!* could both have been prevented by the wearing of lifejackets.

This doesn’t mean those in the commercial sector can be complacent about safety. The commercial incidents featured in this issue, although not fatal, could have been much worse – and all could have been prevented. Please take the time to read through and take note of the simple things that could have been done to prevent them.

There is a feature on survivability in the water in this issue, which outlines how you can increase your chances of surviving long enough to be rescued.

Do pass this copy of *Lookout!* to your colleagues and crew, or contact any one of our offices if you’d like more copies. If you’re interested in more detailed accident reports or safety information, check out our website: www.maritimenz.govt.nz

Catherine Taylor
Director of Maritime New Zealand



When euphoria turns to reality

Over the “holiday season” months Coastguard volunteers had a busy time rescuing many leisure boaties from the jaws of impending doom. From the simple task of jump-starting an engine on a sunny afternoon off Mt Maunganui, to a 2-day search in response to a text message simply saying “call coastguard we’re lost”, it is fair to say our resources and ability to respond have been tested.

The period 1 November to 31 January saw Coastguard units take part in 162 Category 1 or 2 search and rescue operations involving 2,431 volunteer hours, and assisting 335 New Zealanders to the safety of shore.

Many of those who get into difficulty are well prepared, have good communications, are knowledgeable, experienced boaties who get caught out by the elements, or have some type of equipment failure. The solution is then relatively straightforward, even in poor conditions. Our rescue crews know where the vessel is, keep in contact with them via VHF and, in the majority of cases, resolve the issue quickly and efficiently.

In my previous life with the trucking industry we spent as much time looking at “near misses” as we did the accidents themselves. The purpose was to identify the “root cause” of the problem, as opposed to looking at the incidents in isolation. The same needs to be done with the non-fatal recreational boating incidents that are occurring, so as a sector we can identify and manage the risk areas.

There is an increasing reliance on cellphones for communication on the water. In our everyday lives, cellphones are now part and parcel of how we live and communicate. However, cellphones are a very poor third cousin in most of the boating areas around New Zealand.

The coverage at sea is not reliable, and too many are heading out with the false sense of security that, if we get into trouble, we will be able to call someone. Great if you are broken down on State Highway 1, but completely ineffective off the coast at Maketu, as a family party of five found out just prior to New Year.

There was no VHF radio on board, so a text was sent and eventually received by a family member.

All the searchers knew was that the group was lost and needed help. Where to start? In this case, the combined efforts of all the rescue agencies failed to locate them in the first 24 hours, and it was another 18 hours before they were located and brought to safety.

From the notification of the search by Coastguard Tauranga duty officer Tom Scott, to his call almost 2 days later advising of the successful outcome, I worried for the safety of our people involved in the search. Big seas, low visibility and a long search all add to the risks posed to our volunteers.

“ FAILURE TO TAKE REASONABLE PRECAUTIONS SET THE SCENE FOR A POTENTIAL TRAGEDY. IT RISKED THE LIVES OF THOSE ON THE BOAT AND THE VOLUNTEERS WHO COMMITTED TO HEADING OUT TO FIND THEM. ”

I felt a sense of euphoria at the successful outcome, and it was only later, on reflection, that it sunk in how incredibly unwise the actions of these people had been. No flares, no VHF, no emergency locator beacon, no check of the weather report – all the ingredients for a high-risk excursion. Random text messages from a cellphone coming in

and out of service could have got them all killed.

I am sure those involved did not leave in the morning with the intention of becoming lost at sea, but the failure to take reasonable precautions set the scene for a potential tragedy. It risked the lives of those on the boat and the volunteers who committed to heading out to find them.

This incident, and the tragic start to the year, brought a focus on safety in the leisure boat sector, and taking these incidents in isolation brought out calls for legislation.

The Coastguard stance on this has been well reported over the years and remains the same. Coastguard does not support the introduction of compulsory licensing of skippers or compulsory registration of recreational vessels in New Zealand. The organisation’s position has been reinforced by the findings of the “Boating Safety Strategy” publication, prepared following a comprehensive review on boating safety by the New Zealand Pleasure Boat Safety Forum.

Our preference is clearly education over legislation, as demonstrated by the efforts of Coastguard Boating Education Services (CBES), centres of excellence, such as the Coastguard Northern Region Maritime School, and the trained tutor network delivering boating education courses across the country. Over 15,000 New Zealanders attend CBES courses each year, considerably boosting the number of knowledgeable boaties.

Coastguard has also completed investment in the Nowcasting network across the country, which provides free information on weather and sea conditions. This service has up-to-date



COASTGUARD WAIHI BATTLING ROUGH CONDITIONS.

information broadcast over VHF (provided by Coastguard auto weather stations and MetService feeds), which allows boaters to make informed decisions on the water, and before taking to the water.

“ MANY OF THOSE WHO GET INTO DIFFICULTY ARE WELL PREPARED, HAVE GOOD COMMUNICATIONS, ARE KNOWLEDGEABLE, EXPERIENCED BOATIES WHO GET CAUGHT OUT BY THE ELEMENTS, OR HAVE SOME TYPE OF EQUIPMENT FAILURE. ”

Continuing to target good positive safety messages and investment in the intellectual capital of New Zealand leisure boaters has proven more effective than legislating in the past, and will continue to do so in the future.

In the 14 months I have been in charge of Coastguard, I have seen a significant change across the sector with a greater co-ordination between government and non-government organisations. This will only improve the way we communicate safety messages, and our collective ability to respond more effectively when required.

Coastguard is committed to encouraging people onto the water to enjoy the wonderful recreational environment it provides. We will continue to encourage New Zealanders to take personal responsibility for themselves and other boaters.

In 2007/08 Coastguard volunteers gave over 300,000 hours and assisted over 5,000 New Zealanders, with radio operators receiving 294,000 radio calls. Coastguard volunteers collectively generated \$9.5 million to cover the cost of delivering New Zealand's primary on-water search and rescue response.

We are thankful for the dedication of our volunteers, the support of our commercial partners, the funds provided through the service level agreement

with government, and grants provided through trusts. All of this helps fulfil our community promise of saving lives at sea.



Bruce Reid
CEO of Coastguard New Zealand



Chancing the conditions proves fatal

A man drowned after deciding to chance rough sea conditions in a friend's 15-foot aluminium runabout.

The man and two other companions had met up at the same caravan park by the sea on a regular basis for 25 years. All three knew the bay well and made good use of the runabout for setting fishing nets and general boating. Although the vessel carried four lifejackets, none of the men routinely wore them.

The day before the accident, the three men had set a fishing net, planning to haul it in the following day. By the next morning though, the sea was too rough, with heavy onshore swells. The man monitored the conditions throughout the day, and by about mid-afternoon he was convinced that regular lulls between wave sets would allow time to get out past the breakers and reach the net.

He boarded the vessel with one of the men, who was the owner of the boat. The third man had decided to take a nap. The man was wearing the bottom half of a wetsuit, while the owner was dressed in shorts and a shirt.

The pair set off, managing to negotiate the first three or four waves. When the vessel was about 200 metres from shore, the pair saw a large wave building up ahead. The man was on the helm and he throttled back, hoping the wave would break ahead of them so he could drive over the white water. Instead, the wave continued to gather size and was about 2 metres high when it reached the vessel and began breaking. As it broke, the boat capsized and was tipped bow-over-stern. Both men were flung into the sea.

The capsizing was witnessed on shore, and an onlooker woke the third man. He donned a wetsuit and set out toward the men on a surfboard, carrying a rubber tube. At first the men clung to either side of the boat, but as it was dragged parallel to the shore, it was being tossed about in even rougher waters.

The men decided to abandon the boat and swim for shore. The owner

managed to reach one of the lifejackets, and also cut free a plastic petrol tank. He emptied the tank into the sea, and shared it with the helmsman as flotation.

At one point, the third man came as close as 20 metres from the two men, but was forced back to shore by the seas. The men disappeared from view around a rocky point.

The helmsman, who wore no lifejacket, was not a strong swimmer and subsequently drowned.

The owner managed to haul him to the rocky shoreline and tried unsuccessfully to resuscitate him.

The pair were met on the rocks by the third man, and soon after a rescue helicopter arrived and recovered the helmsman's body. The owner was taken to hospital and treated for minor cuts.

▲ THIS TRAGEDY INVOLVED TWO OF THE FOUR FACTORS COMMON IN PLEASURE BOAT ACCIDENTS – NO LIFEJACKETS AND FAILURE TO ADEQUATELY ASSESS WEATHER CONDITIONS.

LOOKOUT!POINTS

1. The decision to make the trip in these conditions contained an element of chance. The men had spent most of the day deciding not to take that chance, but in the mid-afternoon, they decided to go. The lulls in the waves that they felt had provided a suitable safety margin were described by witnesses as lasting "about the time it takes 10 waves to come in".

2. Neither man took the simplest of steps to mitigate risk. Neither wore a lifejacket. The men were in the water for about 20 minutes. A lifejacket would have been likely to provide sufficient flotation to keep the deceased from drowning.

Overcome by cold

A duck shooter drowned after he was tipped out of his open-topped canoe by a wind gust and waterspout.

The man and a friend were duck shooting together, using a Canadian-style or open-topped canoe fitted with a side-mounted motor. Both men were experienced recreational boaters and had intended to shoot ducks in two lakes joined by a stretch of river.

They shot the top lake, bagging two ducks before assessing the river for access to the lower lake. Lack of rain meant the river level was lower than expected, and the men opted instead to drive a short distance to a third lake. No cellphone coverage meant they were unable to advise anyone of the changed plan.

The weather at the third lake was initially calm, and although the men were well dressed for the cold, they had both forgotten to bring lifejackets. As the pair set off, it was becoming gusty and they decided to stay within about 30 metres of the shoreline, to ensure they remained in sheltered water. As the shoot progressed, the canoe ventured as far as 70 metres from shore.

Suddenly, the canoe was hit by a gust of wind that had funnelled through the valley, causing a waterspout, which struck the canoe abeam. The canoe rolled, tipping both men out, and then swamped. One man clung to one side of the canoe, and aside from the initial shock, was not overly concerned. The other man, who was clinging to the other side of the boat, was more concerned with his predicament.

The first man managed to calm his companion, but by then the canoe was being blown toward the opposite shoreline, which was rugged and uninhabited. The pair decided to cut loose two 20 litre containers from under the canoe seats, which had been used as additional buoyancy, and abandon the canoe.

The first man rolled onto his back clutching a container, and was able to kick toward shore. But the second man was struggling. On one occasion, his container popped away from him, and was blown out of reach.

The first man manoeuvred his container between the two of them and told his companion to kick for his life. But the second man saw a passing vehicle and pushed down on the container to wave out. It too popped up out of reach and was quickly blown away.

The first man struggled to keep his companion afloat, but his efforts were unsuccessful. The first man managed to reach shore dizzy, confused and suffering hypothermia. After resting to regain his vision, he was able to raise the alarm.

The following day searchers located the second man's body, the canoe, and most of the gear that had been on board.



▲ CANADIAN OR OPEN-TOPPED CANOES ARE POPULAR FOR RECREATIONAL USE AND DUCK SHOOTING, AS THEY ARE CAPABLE OF CARRYING HEAVY OR BULKY LOADS AND EQUIPMENT. THEY ARE LESS RESILIENT TO THE EFFECTS OF SWAMPING THAN CLOSED-TOP KAYAKS.



▲ THESE 20 LITRE CONTAINERS FROM UNDER THE CANOE SEATS, USED AS ADDITIONAL BUOYANCY FOR THE CANADIAN CANOE, WERE CUT LOOSE FOR FLOATATION WHEN THE CANOE ROLLED.

LOOKOUT!POINTS

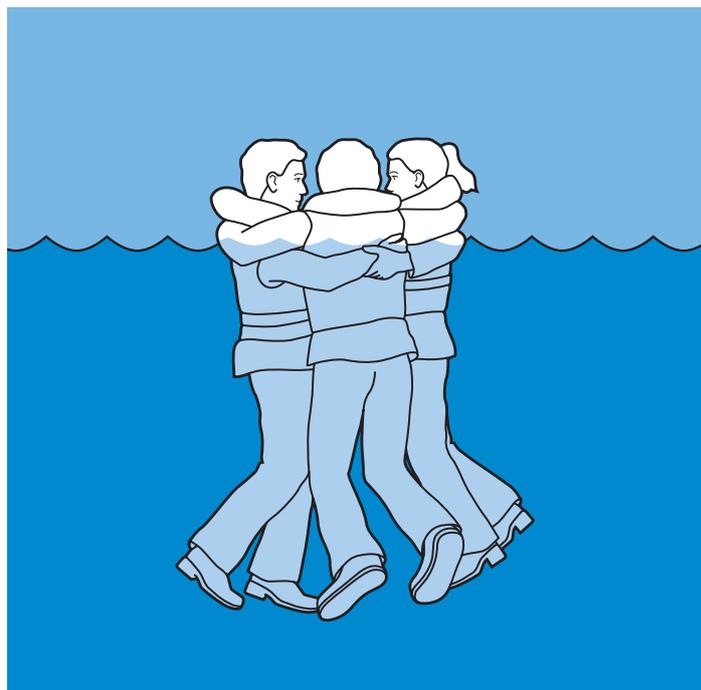
1. Neither man wore a lifejacket, which was an exception for them both. They were both known to be fastidious in their use of lifejackets, but had failed to carry them on this occasion. Maritime law requires that lifejackets be carried and be easily accessible. They must be worn when there is any increased risk.

2. Although the men knew there was no cellphone or VHF radio coverage in the area, they did not carry an emergency locator beacon or flares.

Conditions on New Zealand lakes can change dramatically in a short time, and conditions can vary at different parts of a lake at the same time.

Communications and emergency aids should be carried, even in the calmest conditions, and in some remote areas, only a PLB or an EPIRB will result in a rescue.

Survive in cold water



THE AIM OF THE "HELP" AND "HUDDLE" POSITIONS IS TO KEEP THE WARM WATER CLOSE TO THE BODY FROM BEING REPLACED BY COLDER SURROUNDING WATER.

Cold is one of the greatest threats to the lives of everyone on the water.

The human body is designed to operate best at about 37 degrees Celsius (°C). Just a couple of degrees is all it takes to throw that equilibrium off balance, and at 30 to 32°C, death is almost assured.

In waters of 10°C, the average person will be semi-conscious or unconscious within 1 hour. Death from drowning will occur within 2 hours, even with a lifejacket. In waters of 15°C, a person might survive for up to 6 hours.

The greatest threat from cold is hypothermia. In cold, the body first prioritises the vital organs – the heart, lungs and brain – to enable them to function normally. It reduces warm blood flow to the outer layers of the body and the extremities. Hands and feet feel cold, and shivering starts in an involuntary attempt to generate more heat.

As the body's core temperature drops, the vital inner-organs also become affected. As the brain cools, consciousness is affected. Without correct treatment, death will follow.

Cold can also kill quickly. The shock of suddenly entering very cold water can cause a large gasp for air, and a massive increase in lung and heart effort. This alone can result in muscle spasm, drowning, or heart attack.

Many of New Zealand's seas, lakes and rivers are very cold. While the effects of immersion in cold water vary depending on factors such as body fat, strength, and attitude, certain techniques can improve your chance of surviving long enough to be rescued.

Certain techniques can improve your chance of surviving long enough to be rescued:

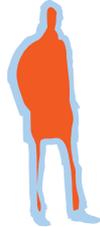
- **Wear a lifejacket.** A full lifejacket helps to keep the head and airway clear of the water, even when strength and mental capacity is waning. It will also make adopting heat-loss reducing postures much more stable.
- **The more clothes you have on, the better.** Do not get undressed to enter the water. If there is time, add more layers. A person wearing two layers of woollen clothing will lose less than a quarter of the heat a person wearing only a swimsuit will lose. Wear as many layers of wool as possible, covered with a waterproof layer. The wool will trap warmer layers of water closer to the body.
- **Try not to panic.** Panic can impair breathing and hasten the drowning process. Hyperventilation can occur when a person is unexpectedly immersed in the water. A mistimed breath can result in a laryngospasm, which sometimes results in loss of consciousness. A person who does not panic may simply have to cope with hyperventilation, which will eventually subside.
- **Where possible, get out of the water.** In water the body loses heat 20 to 30 times faster than it does in air. Even if you feel colder out of the water, try to clamber on top of an overturned boat or any floating wreckage.

How the body reacts to cold

The body must maintain the vital organs in its inner core – the heart, lungs, brain, etc – at a constant temperature of about 37.6°C to enable them to function normally. At normal temperatures the heat generated by the body is carried by the blood to all regions of the body. The body automatically regulates its blood flow to control body temperature. Any excess heat is removed by transferring it to the outer layers for dissipation.



As the temperature of the environment falls, the outer layers of the body begin to cool. The body now reduces blood circulation to these outer regions, so that the cooling is not transferred to the important organs in the deeper regions of the body. Hands and feet feel cold because of the reduced blood supply to these areas. Shivering starts, as an involuntary muscular attempt to generate more body heat.



With further cooling, the inner core of the body now begins to cool.* This is the beginning of hypothermia. The blood supply to the body's outer regions is further reduced, as the body now takes drastic measures to maintain the temperature of its vital organs. Shivering may now decrease or stop. The organs in the core are now being affected. As the brain cools, there is reduced control and consciousness is affected. Further cooling of the core will cause the organs to stop functioning.



Consciousness is lost. Death will follow unless treatment is immediate and correctly given.

*While progressive loss of body heat can result in loss of consciousness and death, many victims perish much sooner when immersed suddenly in cold water. Cold shock can affect some, causing cardiac failure within a few minutes. Increased breathing rates can lead to dizziness, and the muscles cool rapidly. Immersion in cold water can cause such rapid loss of muscular function that in minutes a person loses the strength to board a raft or even operate a flare. A fit person in these circumstances quickly loses the ability to make even basic movements to help keep themselves afloat. There have been many recorded cases of drowning in less than 10 minutes – long before the body core temperature has started to drop or the person is affected by hypothermia.

Adapted from *Safety in Small Craft*, written by Mike Scanlan, Coastguard Boating Education Service.

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- **If you are forced to stay in the water, adopt the HELP (Heat Escape Lessening Posture).** Hold the arms tight against the chest, press the thighs together, and raise up the knees to protect the groin. This posture will increase survival time by nearly 50%. It will be most easy to adopt when wearing a lifejacket.
- **Groups of three or more should adopt the huddle position.** The sides of the chests and the lower torsos are pressed together, arms hugging each other around the lifejackets. Intertwine legs as much as possible, and talk to one another. Children succumb to cold much more quickly than adults, and should be sandwiched in the middle of the group.

- **Consider options before swimming to shore.** If you decide to swim for shore, consider that tests show an average person wearing a lifejacket and light clothing could swim about 1.85 kilometres in water of 10°C. In one Canadian case, a 20-year-old strong swimmer drowned within 5 minutes in 10°C waters. When deciding to swim for it, consider your swimming ability, the weakening effects of the cold and anxiety, and the huge overall heat loss that the swim will cause. If in any doubt, stay with the boat.

Fire barely contained

Four people on board a motor launch were lucky to suppress an engine fire with limited fire-fighting equipment on board.

The group had left the launching ramp several days earlier and were fishing near some islands when the skipper heard an unusual noise coming from the port engine. On inspection, he found a valve spring had broken and made a hole in the tappet cover, with a resulting loss in oil pressure. The skipper continued on the starboard engine and topped up the port engine's oil, in case the engine was needed later.

That afternoon, one of the crew noticed the warning light for the starboard engine bay scavenge fan was lit on the control panel. The skipper went to check the fan, but as he lifted the starboard engine bay cover, he was met by a fireball.

The skipper slammed the cover down, collected the vessel's only fire extinguisher from the wheelhouse bulkhead, and discharged it into the engine bay. There was little effect and the skipper again slammed the cover shut and clambered through the toxic smoke to the aft deck.

The crew deployed the life raft, and the skipper managed to recover safety equipment and lifejackets. He could not reach the handheld VHF radio, or any cellphones.

Meanwhile, the smoke and flames were intensifying. One crew member stayed with the life raft, while the skipper and remaining crew set to work dousing the fire with sea water and buckets. After about 15 minutes the fire was extinguished.

The alarm had been raised by observers ashore and the Coastguard arrived and towed the launch back to shore.



▲ THE STARBOARD ENGINE FIRE WAS "ELECTRICAL" WHEN IT BEGAN, BUT PROGRESSED INTO A GENERAL FIRE, WITH A VARIETY OF SUBSTANCES, INCLUDING FOAM RUBBER, PLASTIC, WIRE INSULATION, OIL, METAL, GREASE AND DEBRIS, WOOD AND PAINT.



▲ A HEAVY OXIDATION PATTERN WAS VISIBLE ON THE OUTSIDE OF THE HULL AS A RESULT OF THE FIRE.

“ THAT AFTERNOON, ONE OF THE CREW NOTICED THE WARNING LIGHT FOR THE STARBOARD ENGINE BAY SCAVENGE FAN WAS LIT ON THE CONTROL PANEL. ”

LOOKOUT!POINTS

1. The exact cause of the fire cannot be determined, although it is thought to have been an electrical fire originating near the alternator and a bundle of wires leading to a battery bank. The fire may have been fed by the scavenge fans, and by the sudden rush of oxygen when the skipper opened the engine bay cover.

2. The vessel carried only one 2.3 kg dry powder extinguisher. Dry powder is good for fuel and oil fires, however the skipper reported that the extinguisher seemed

to be feeding the fire. By the time the extinguisher was used, the fire was likely to also have been burning wood, plastic and polyether foam. Given the potential for an electrical element to this fire, the safest and most efficient type would have been an AFFF (aqueous film-forming foam) extinguisher feeding directly into the closed engine bay.

3. The recommended complement of extinguishers for a boat of this size would be two 4.5 kg or 9 litre portable

extinguishers or two suitable dry powder equivalents, with one positioned near the engine bay, and the other in an easily accessible space away from the machinery.

4. In the absence of a fixed fire-fighting system, a covered hole or port can be cut to allow access to the engine bay. An extinguisher can then be dispersed into the enclosed area, without opening the cover, which avoids providing a fresh oxygen source to the flames.



▲ THESE 75MM DIAMETER STEERING CABLES ARE COMMONLY USED IN JETBOATS. THEY ARE TOO SMALL AND FALL BELOW THE RECOMMENDED MINIMUM SIZES.

Steering cable breaks

A jetboat loaded with passengers was speeding toward a rock at 85 km/h when the steering cable suddenly broke.

The experienced skipper quickly dropped the reverse bucket and managed to bring the vessel to a sudden stop. Due to the skipper's skill and quick thinking, no one was hurt.

The skipper later said the passengers had not even realised anything was wrong.

In the interim, the jetboat operator has reduced the cable replacement time from 1,000 hours to 500 hours. They have improved the cable inspection requirements, including the need to pay close attention to the normally hidden section behind the pulley. This requires turning the steering lock fully both ways, and using a mirror on an extension pole with a torch, to carefully check for any broken strands. If any broken strand is detected, the boat is immediately removed from service and the steering cable replaced.

LOOKOUT!POINTS

1. The operator's maintenance schedule required that the steering cable be replaced every 1,000 hours, whether it showed signs of wear or not. This cable had completed 941 hours and, a few days earlier, a junior mechanic had noticed a couple of broken strands on the cable. Checking with his superiors, he had been told that, as the cable was soon due for replacement, it would be fine for a few more days.

2. The pulleys the cable ran around were found to be smaller than recommended by the cable manufacturer, and this was later the subject of a Maritime New Zealand Safety Bulletin *Issue 17, Small Craft Wire Cable Steering Controls*. However, the relationship between cable wire and pulley diameter is a complex issue. New Zealand industry engineers are currently testing alternative systems that may allow smaller diameter pulleys to be safely used on jetboats.



Spotter deserts post

An inexperienced stevedore was struck by a forklift when the gang's supervisor stopped monitoring safety.

The six-person gang was loading steel coils into the hold of a container vessel. One man operated the crane, another was on the wharf. Three men were in the hold, and the foreman was acting as hatchman, supervising the work and ensuring safety.

As the task progressed, the forklift operator in the hold started having difficulty placing some of the coils in a tricky position. The foreman was the most experienced forklift operator in the

crew, so he left his post at the hatch and took over.

The crane operator lowered another coil into the hold and the inexperienced stevedore stepped forward to unhook the load. At the same instant the foreman reversed the forklift and struck him.

The stevedore was initially thought to have broken his leg, but was later discharged from hospital with severe bruising.

▲ TRICKY MANOEUVRING NEEDED FOR LOADING THE COILS RESULTED IN A CHANGE OF ROLES AND AN INJURED STEVEDORE.

“ THE FOREMAN WAS THE MOST EXPERIENCED FORKLIFT OPERATOR IN THE CREW, SO HE LEFT HIS POST AT THE HATCH AND TOOK OVER. ”

LOOKOUT!POINTS

1. The vessel's employer highlighted several safety measures following the accident. The company said that the foreman should have ensured he was replaced by a suitable supervisor before leaving his post. It also said the crane operator should have ceased loading until he was back in communication with a replacement hatchman via either hand or radio signals.

2. The foreman had checked behind him before moving the forklift, but did not continue to do so as he reversed. Forklift operators should always look in the direction they are headed, and limit themselves to a safe stopping speed.

3. Being inexperienced, the injured man was keen to prove himself to the team. He may have stepped toward the load without first checking his surroundings.

4. Information and tips on the safe operation of forklifts are available from the Department of Labour website, www.osh.dol.govt.nz/order/catalogue/a-z.shtml#F

Three strikes!

Incorrectly fitted deck grates on a container ship caused injuries to three different stevedores at three different ports on three consecutive days.

The crew in the lower deck had removed one section of grates to feed through the reefer cables that supplied power to the containers. Once finished with the cables, the crew reinstalled the grates.

On the first day, a port company foreman who was loading the forward hatch suddenly fell through one of the grates. He tumbled 1.5 metres and fractured his wrist.

The following day, the vessel arrived at the next port and a stevedore lashing cargo fell through a different set of grates on the vessel, suffering bruising that required medical attention.

At the third port, another stevedore fell through yet another set of grates. He managed to arrest his fall, but suffered a sprained shoulder and bruising.

A design fault was identified with these grates that allowed them to be incorrectly placed once shifted, leaving them unstable and insecure.

“ AT THE THIRD PORT, ANOTHER STEVEDORE FELL THROUGH YET ANOTHER SET OF GRATES. HE MANAGED TO ARREST HIS FALL, BUT SUFFERED A SPRAINED SHOULDER AND BRUISING. ”



▲ THE GRATES WERE ORIGINALLY DESIGNED SO THAT THEY WOULD ONLY BE SECURE IF THEY WERE PLACED CORRECTLY, HOWEVER, THE DESIGN MADE IT EASY FOR THE GRATE TO BE INADVERTENTLY REPLACED BACK-TO-FRONT.

LOOKOUT!POINTS

1. The design of the grates meant they could be fitted back-to-front and incorrectly while still appearing at-a-glance to be secure. The design included small gaps at one end of the grate, which were a snug fit over securing pins. Unfortunately, if the other end of the grate was fitted over the pins, the gaps were larger and were not a secure fit.

2. A second error could occur if the correct end of the grate was used, but not the smaller gap. When weight was applied to the unsecured end of the grate, the secured end slid easily over the pins and fell away.

3. The owners intend to fit hinges to one end of the grates, so they may be raised and lowered without being mis-fitted.

Owners considering this action should also ensure there is a system to lock the grates in place once raised, so they can not fall down on anyone accessing the space below.

Winch control smashes into mate

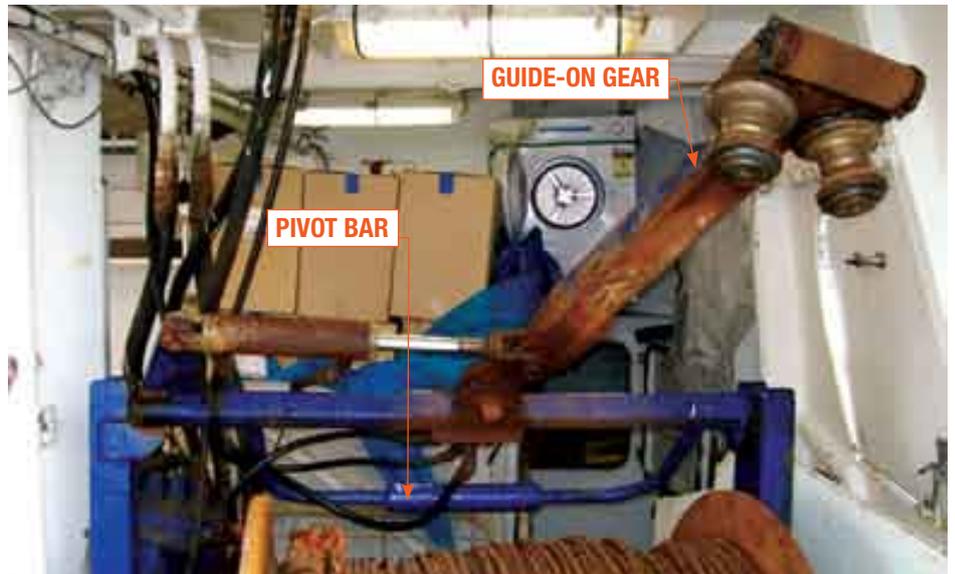
A pivot bar on a trawler's winch rebounded into a mate's chest, breaking two of his ribs.

The pivot bar was the manual control for the guide-on gear, which ensured the trawling wire was fed evenly across the winch drum. The mate had over 10 years' experience and had operated the winch without incident many times over the 4-day trawl.

When controlling the winch, the operator stands directly behind the winch drum. At one point the wire splits into two, via hammerlocks and a swivel. This portion of the wire is too wide to fit through the guide-on gear, so the operator must raise the rollers clear of the swivels and allow them to pass, before lowering the guide-on gear back into place. The operator raises the rollers by leaning their body down against the pivot bar.

On this occasion the pivot bar may have failed, and struck the mate in the chest. He walked off the deck suffering extreme pain and was later transferred to hospital for x-rays.

“ THE MATE HAD OVER 10 YEARS' EXPERIENCE AND HAD OPERATED THE WINCH WITHOUT INCIDENT MANY TIMES OVER THE 4-DAY TRAWL. ”



▲ DOWNWARD MOVEMENT ON THE PIVOT BAR LIFTS THE GUIDE-ON GEAR ASSEMBLY.



▲ THE OPERATOR MUST STAND BEHIND THE WINCH AND MONITOR THE WIRE LEVEL, AS WELL AS THE SPEED AND AMOUNT OF WIRE RETRIEVED SO FAR.

LOOKOUT!POINTS

1. The mate says he saw the swivels approaching, and slowed the winch and raised the guide-on gear to allow them to pass before increasing winch speed again. His view is that the pivot bar did not fail until the speed came on. The manual controls put the mate in a potentially hazardous situation.

2. The following alternatives may remove the need to have a person so close to a large moving winch:

- an automatic worm-drive-type guide-on gear operation
- changing the guide-on gear rollers to allow the swivels to pass through

without having to lift the rollers from the wire

- changing to a remote winch control similar to that found on several other vessels of a similar type and size operated by this company.

CHECK YOUR EMERGENCY BEACON

SWITCH TO
406 DISTRESS
BEACONS
www.beacons.org.nz

Do not delay, check your beacon – and upgrade if you need to – today

Will your emergency beacon work?

Only 406 MHz distress beacons will work. On 1 February 2009 the global satellite system that supported the old 121.5 MHz and 243 MHz Emergency Position Indicating Radio Beacons (EPIRBs) ceased to operate. This means if you need help in an emergency and try to use an old EPIRB to alert rescuers, the satellites will have no way of hearing you – it will not generate an alert or give your location. If you get into trouble and need to signal for help, you'll need to be carrying a registered 406 MHz EPIRB, or have one installed in your vessel.

What kind of EPIRB do you have?

If you do not know what kind of EPIRB you have already, check it now. Somewhere on its body it will be marked with an operating frequency. If it doesn't say 406 MHz, it will more than likely need to be replaced. If in doubt, take it to an EPIRB supplier for verification. A list of suppliers can be found at www.beacons.org.nz

How will a 406 MHz EPIRB help save your life?

- **It works.** Only 406 MHz EPIRBs are monitored by satellite.
- **It's faster than the old-style beacons.** Once activated, the signal from a 406 MHz EPIRB is picked up almost instantly by satellite. The satellites supporting the old 121.5 MHz and 243 MHz EPIRBs took several hours to determine your location – which could have been hours too late.
- **It's more accurate.** 406 MHz EPIRBs provide rescuers with a search area of approximately 100 square kilometres. GPS-equipped EPIRBs reduce the search area down to approximately 20 square metres. This takes the "search" out of search and rescue, and increases your chances of survival. Any 406 MHz beacon is a huge improvement on the 121.5/243 MHz system, which had a search area of more than 1,260 square kilometres.
- **It brings the right response.** With 406 MHz EPIRBs, alerts are cross-referenced against a database of **registered** owners. Having this information improves rescuers' ability to help you in an emergency, and to respond appropriately. Being able to contact you, or a person you nominate, also saves time and resources from being wasted on false alerts – out of the over a thousand 121.5 MHz activations in the past 2 years, only 9% were for a real emergency.

Maritime New Zealand rules

Pleasure vessels. Offshore pleasure vessels heading overseas and yachts undertaking coastal races where Category 2 or 3 safety rules apply are required to carry a 406 MHz EPIRB. For further advice, contact the Maritime New Zealand recreational boating team at recreational.boating@maritimenz.govt.nz

Commercial vessels. For some classes of commercial vessels, it has been compulsory to carry registered 406 MHz EPIRBs since **1 July 2008**. To find out if that applies to you, contact your nearest safety advisor or check out the relevant rules at www.maritimenz.govt.nz/publications/rules/EPIRBAmendment.pdf

Which 406 MHz EPIRB?

A wide range of 406 MHz beacons are suitable for marine use. They are waterproof and designed to float upright in water. Some are activated manually, while others will float

free and activate automatically if the vessel sinks. We strongly recommend you purchase a beacon with in-built GPS as this dramatically improves their accuracy. Each 406 MHz EPIRB has an individual hexadecimal code. These codes are allocated to different regions around the world. If you are buying a beacon, make sure it is coded for New Zealand.

In some cases a smaller, waterproof Personal Locator Beacon (PLB) may be suitable and can also be used for other purposes such as tramping, climbing, gliding and other outdoor activities. PLBs are small enough to fit in your pocket and are activated manually, but most **do not** float and have a shorter battery-life than EPIRBs. Talk to your local supplier about which 406 MHz beacon is best for your needs.

Free 406 MHz registration

It is vital that 406 MHz EPIRBs are registered with the Rescue Coordination Centre New Zealand (RCCNZ). This ensures a faster, more appropriate response in an emergency. Registration is free – **register online** or download the forms at www.beacons.org.nz. If you sell or buy a second-hand 406 MHz EPIRB, or if your personal details change (such as phone numbers or address), please take the time to update the registration information with RCCNZ via phone, 0800 406 111 or 0508 406 111, or email 406registry@maritimenz.govt.nz

Dispose of your old EPIRB properly

Old 121.5 or 243 MHz EPIRBs need to have their battery disconnected and then be disposed of in accordance with local regulations, as many contain hazardous materials. Go to www.beacons.org.nz for a list of suppliers who will help you dispose of your old beacon safely.

How does the 406 MHz beacon monitoring system work?



1. A 406 MHz distress beacon is activated.
2. The signal is transmitted to the nearest sub-orbital satellite. These can be satellites that remain in stationary position over the same area of the earth's surface or those that are constantly circling the earth in polar orbits.
3. The signal is transmitted from the satellites to the nearest local user terminal. These are placed around the globe, to ensure signals are received almost immediately.
4. The signal is passed to RCCNZ.
5. RCCNZ mobilises rescue resources and directs them to the coordinates of the signal.

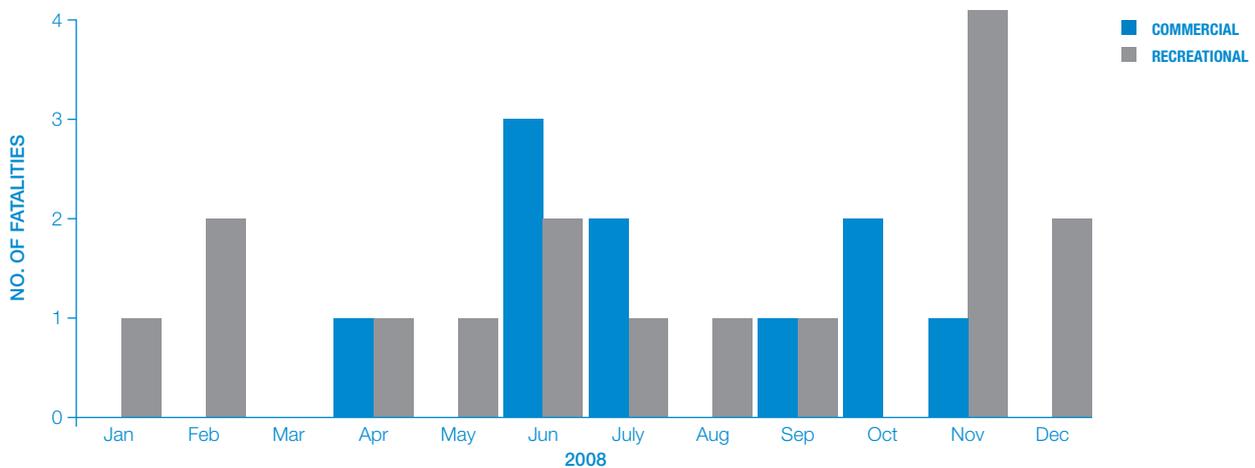
FOR MORE INFORMATION VISIT
WWW.BEACONS.ORG.NZ

Fatalities and accidents

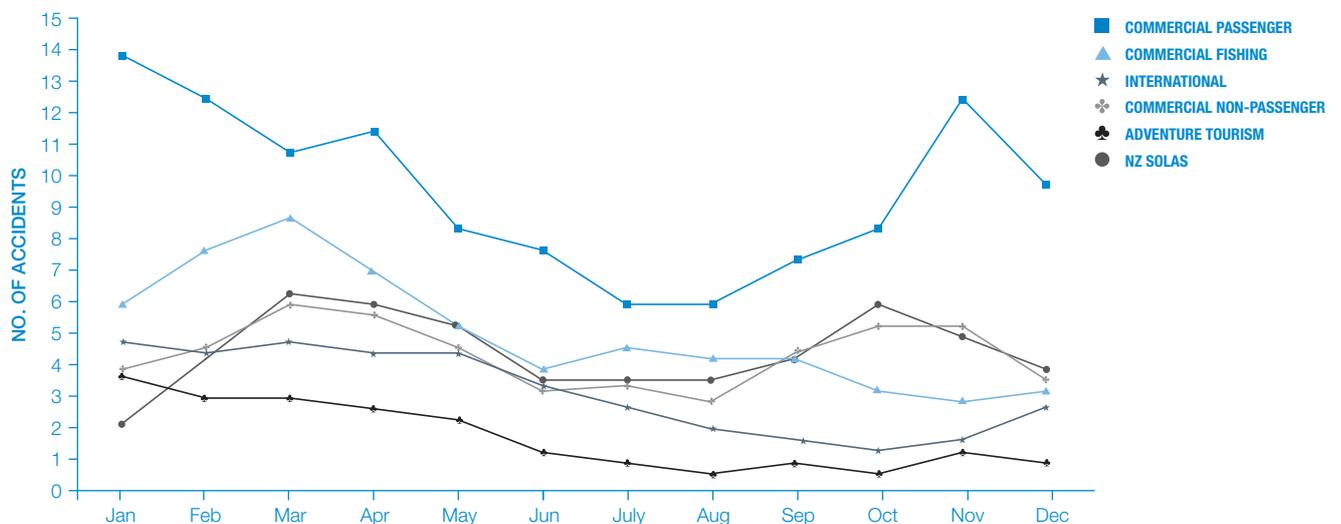
in 2008

These graphs show the number of commercial and recreational maritime fatalities for each month in 2008, the number of commercial accidents reported by type of vessel for each month, and an annual breakdown of the types of accidents reported on commercial vessels.

COMMERCIAL AND RECREATIONAL MARITIME FATALITIES BY MONTH, 2008

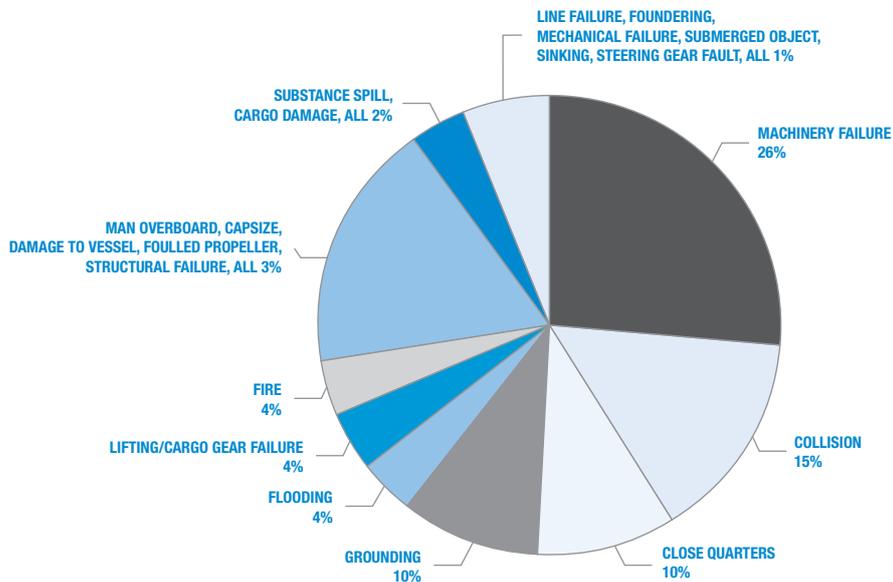


COMMERCIAL ACCIDENTS REPORTED BY VESSEL TYPE⁽¹⁾ BY MONTH, 2008



⁽¹⁾ Based on a three-month rolling average, or statistical data averaged over the past three months.

TYPES OF COMMERCIAL ACCIDENTS REPORTED 2008



GOING ASHORE?
NO LIFEJACKETS?
NOT LEGAL!

Every boat, including tenders, must carry a lifejacket for each person on board.

For more safety tips and info www.maritimenz.govt.nz or 0508 22 55 22

Safety updates

Maritime New Zealand publishes safety bulletins and marine guidance notices as a means of communicating and encouraging dialogue on a variety of safety issues and proposals relating to these. The bulletins and notices are published as required, and are distributed to those sectors directly involved. We welcome any comments you have on the recommendations and content in general. For more details on how to join our new email mailing list see below.

Marine guidance notices

Bulwark and guardrail height on fishing vessels

September 2008 – Issue 9

Use of electronic charts, ECDIS and ENCs in New Zealand

June 2008 – Issue 8

Large coastal ships – safety requirements

January 2008 – Issue 7

Guidance on compliance with Maritime Rules 24B. 10(2) and (3) – vehicle lashing arrangements

November 2007 – Issue 6

Safe winch operation and related appendixes

October 2007 – Issue 4

Inboard mounted outboard motors

September 2007 – Issue 3

Vehicle requirements for shipment by ro-ro

June 2007 – Issue 2

Advice on acceptable freeing port covers

May 2007 – Issue 1

For more information you can:

- download the safety bulletins and marine guidance notices from our website: www.maritimenz.govt.nz
- email us at: enquiries@maritimenz.govt.nz

100 years ago – from the Otago Daily Times' archives

CHRISTCHURCH: speaking of the wreck of the *Penguin*, a well-known government official, who is on a visit to Christchurch, said that the disaster was another strong argument in favour of fitting vessels with wireless telegraph apparatus. Had the vessel been fitted with an instrument, and been able to communicate with either the shore or passing ships, much of the appalling loss of life might have been averted. It was high time that the Government had stations on the coast, and that vessels were fitted with instruments. The cost would be as nothing compared with the safety which such an installation would ensure. In the case of the *Penguin* it would probably have resulted in ships arriving and saving many of those who were struggling in the water before they went under.

Incorrect image

The fishing vessel that appeared on page 5 of the June 2008 issue of *Lookout!* was unrelated to the "Finger lost to stingray" story. Maritime New Zealand apologises for any inconvenience caused by the use of this image, and regrets that the use of this image resulted in an unintended impression of wrongdoing on the part of those involved in the operation of the vessel shown.

Be up to speed with the latest safety info

Join our email mailing list

Maritime New Zealand (MNZ) puts out a range of safety information updates (including safety bulletins and marine guidance notices) targeted at the needs of different audiences in the maritime industry. In the future, we aim to send out advice about MNZ safety updates primarily by email.

If you would like to be added to our mailing list, please email your details to: publications@maritimenz.govt.nz

All our safety notices can be downloaded from our website: www.maritimenz.govt.nz



From 1 January
to 31 December 2008

26

MARITIME FATALITIES 2008

From 1 January to 31 December 2008, there were 26 fatalities – **10** in the **commercial sector** and **16** in the **recreational sector**.

 **MARITIME**
NEW ZEALAND

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New Zealand Government

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