

LOOK LESSONS LEARNT *BY ACCIDENT* OUT!

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Three rescued
after beacon activated

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Three rescued after beacon activated



The upturned 7 metre trailer boat was anchored overnight and sank while Coastguard was attempting to retrieve it the following morning. It was later recovered.

Three men balancing on the hull of an upturned boat were rescued after they set off their 406MHz distress beacon in an operation coordinated by the Rescue Coordination Centre New Zealand (RCCNZ).

The men had been fishing from a 7 metre hard-topped trailer-boat about 12 nautical miles from the harbour entrance. After checking the local weather forecast to ensure conditions for the day would be favourable, they crossed the harbour bar without incident, having made a trip report and confirmed their successful crossing to the local Coastguard.

When the men attempted to raise their anchor, they found it was snagged on the sea floor. After spending some time attempting to retrieve it, they left a marker buoy and visited a friend's boat nearby.

When they returned to try once more to uplift the snagged anchor, they tied the anchor warp to a cleat on the transom and the short length to a nearby handrail. The skipper revved the motor to try to free the anchor from the stern but the cleat gave way and hit one of the

passengers. The rope quickly fed out until the section tied to the handrail was taut.

The skipper then throttled back and went aft to cut the rope, but the boat was swamped and turned upside down within seconds.

The three men managed to clamber on top of the upturned hull. Two were wearing lifejackets and the skipper dived into the cabin to try to retrieve a lifejacket for himself, without success. He did however, manage to retrieve the boat's distress beacon.

"When we turned the beacon on and the light started flashing, it was a bit of a hallelujah moment," the skipper said. "We knew then that we would be rescued."

RCCNZ was able to use the distress beacon's signal to give the helicopter crew a very accurate position for the men and the beacon also had a strobe light.

The helicopter was equipped with night vision and a winch, but the crew was unable to uplift the men due to the rough sea conditions.

It remained on scene until a Coastguard vessel arrived, directing the Coastguard crew to the upturned vessel.

The crew of the Coastguard vessel recovered the three men and returned to base, where an ambulance was waiting. The men were checked and one was treated for mild hypothermia.

The Coastguard crew had anchored the upturned trailer-boat before departing the rescue scene. The following morning they returned with the boat owner to recover the boat, but as they started to tow it back, the rope broke, and the boat eventually sank. It was later recovered.

LOOKOUT!POINTS

■ A distress beacon is an effective and reliable way of calling for help, especially in areas where there is limited or no cell phone or VHF radio coverage. MNZ recommends that people carry at least two waterproof means of calling for help, such as a distress beacon, VHF radio, flares, or cell phone in a plastic bag.

■ The men had a hard-wired VHF radio and a hand-held VHF radio on board and also had one cell phone each. They also had coastal flares but were unable to retrieve them from the upturned boat. The skipper was able to dive into the upturned cabin to retrieve their distress beacon and activate it, raising the alarm.

It is often not possible to retrieve gear from an upturned boat. The skipper said "It was a matter of recounting how and where it was fixed to the hard top, holding my breath and taking my time to remove it without losing it".

The skipper had carefully considered beacon placement when installing the beacon. "If it was in any other location, like down between the helm seats and the bulkhead, recovering it would have been a real mission," he said.

MNZ recommends that people carry a means of calling for help on their person, rather than storing it on the boat where it can become inaccessible in an accident. Trouble often happens very quickly and there may not be enough time to retrieve gear.

Many people carry cell phones on their boats, but only about half of them seal their phones in waterproof plastic bags. The simple act of putting your cell phone in a ziplock bag can save your phone if it ends up in the water – and it could save your life.

The men had three cell phones on board, but only one was in a waterproof case. It was not being carried when the boat capsized.

■ RCCNZ Search and Rescue Officer Chris Henshaw said it was a textbook example of how effective beacons are and how beacon registration means a more targeted response can be launched.

"The 406MHz distress beacon was registered, so we were able to call the nominated emergency contact to establish the size of the party, type of vessel and what they were likely to be doing to inform the helicopter crew and Coastguard," said Mr Henshaw.

"The beacon meant we were able to quickly get a very accurate position for the vessel and locate them easily. The rescue helicopter and Coastguard worked together in a very successful rescue."

■ Lifejackets should be worn whenever practicable on a boat, even when conditions appear relatively calm. They should be worn at all times when there is a heightened risk.

Things can go wrong very quickly and there often is not enough time to retrieve and put on a lifejacket. Lifejackets reduce people's tendency to panic in the water and increase their survival times. Had the men ended up spending a night in the water, especially without lifejackets, the outcome could have been very different.

■ Retrieving a snagged anchor is a potentially risky situation and it would have been prudent for all on board to have been wearing lifejackets while they were attempting to do this. The men's attempt to retrieve the anchor by pulling it up from the stern, using the boat's engine, is likely to have caused the swamping.

Using the boat's engine caused the anchor rope to act like a bungee – when revs were lowered, the tension in the rope pulled the vessel's stern down under the water. The stern platform then acted like a giant scoop, flooding the vessel's stern. The rapid water ingress is likely to have dramatically affected the vessel's stability, causing the capsize.



Watch the clip "Anchors and mooring" on MNZ's **boatsafetyinnz** YouTube channel

▶ <http://www.youtube.com/watch?v=zyYzNB0ldwE>

406MHz distress beacon search – A rescuer's story

As told by a crewman from Auckland Rescue Helicopter Trust.

Early that evening, we had been tasked by RCCNZ to investigate a 406MHz distress beacon going off. The beacon was registered to a 7 metre alloy boat that had possibly three people on board.

RCCNZ was also able to tell us that the distress beacon was GPS capable and this information played a very big part in our planning. The helicopter was readied with extra equipment and fuel to enable us to conduct a search and, if circumstances permitted, a possible rescue.

Almost an hour later we found ourselves in very dark conditions well off shore, with the steady sound of a beacon coming through our earpieces and our direction finding gear indicating a beacon in our direction of travel.

Approximately 6 minutes later, one of the pilots said he had spotted a very weak flashing light. The light's position was where the direction finding gear was indicating, and not long after I gained a visual of the light too.

We started a very cautious descent and the flying pilot got the airspeed back so we could get a visual on what was with the flashing light.

Looking out through the night vision goggles we sighted an upturned hull of a boat and a very brief flash of reflective tape and possibly two people. The aircraft was repositioned to go overhead and attempt to get an accurate position fix.

Once we had done this, messages were relayed to RCCNZ via maritime radio and we were updated on a Coastguard vessel's estimated time of arrival to the scene.

We were asked to confirm how many people we could see, and we managed to get low and slow enough to confirm that three people were on the upturned hull with the dimly flashing light.

The Coastguard vessel was directed to the vessel's position and shortly after they advised they were able converse with each survivor.

The Coastguard vessel transported survivors back to shore where they were assessed by ambulance staff.

When I was talking with the crew after this job, a comment was made that the survivors needed to buy a lotto ticket!

Rescue crews around the country have been in similar circumstances plenty of times in the past and, unfortunately, things do not always end as well. I have been involved in a number of similar incidents and feel there is a pretty common theme to those that end with a 'positive outcome'...a 406MHz beacon.

Yes, they may seem a bit pricey and, yes, they may take up room, but if things go pear shaped they can be a game-changer!

Think of a distress beacon as your pre-paid lotto ticket with the ultimate prize...life!



Auckland Rescue Helicopter Trust crew make final adjustments to their night vision goggles before setting off on a rescue.

Runaway boat risks lives

A skipper who was thrown into the water was extremely lucky not to have been run over and seriously injured by his out-of-control vessel. The 4.3 metre boat, spinning in circles on a lake, also posed a danger to other vessels and people on shore.

The incident occurred at the end of a sailing club's race day, when a club member took one of the patrol boats out onto the lake on his own to retrieve the course marks.

The patrol vessel, used for race management and as a rescue boat, was a fibreglass open 'whaler' style boat, powered by a 25hp four-stroke engine. There was good visibility, with calm water and no wind.

The boat's skipper was manoeuvring close to a mark when one of his feet slipped. As he fell forward, he let go of the steering wheel and pushed the throttle lever forward. The boat accelerated and turned sharply, throwing the man into the lake.

The boat kept going, turning rapidly in tight circles. Fortunately, it slowly moved away from the man in the water.

A course mark anchor rope became entangled around the boat's fuel tank and flipped the tank upside down, drawing air down the fuel line and causing the engine to cut out. Without this occurring, it would have been almost impossible for anybody to board the runaway vessel and stop the engine. Further lives could have been put at risk and property damaged.

The incident was seen from the clubhouse and the alarm raised. Members quickly launched the club's other patrol vessel to rescue the person in the water, who was wearing a lifejacket and uninjured. There was no damage to the runaway boat.



A sailing club member with course marks in the patrol boat that had the accident.



A sailing club member with a cut-out cord attached to his leg.

LOOKOUT!POINTS

■ The lake is a popular spot for boating. As well as the skipper being at serious risk of being hit by the runaway boat, it could have collided with other vessels in the lake and on shore.

■ Had there been two people in the boat, as the club rules required, the incident would have been unlikely to occur. A second person would have been able to take control of the boat and prevent it accelerating and turning abruptly when the skipper fell. If events had occurred too quickly to prevent the man being thrown from the boat, a second person could have quickly brought it to a stop.

■ While the sailing club had a good safety record over the previous 12 years, the incident highlights the potential for people to become complacent about club rules. The club admitted that it did not always follow its rule to have two people in the patrol boat when conditions were

considered calm and they were just picking up marks at the end of the day. The incident illustrates the importance of following safety precautions, which should be industry best practice and strictly enforced.

■ The incident is also a clear example of the value of people on motor boats wearing a kill or cut-out cord, which stops the engine when the operator falls overboard or away from the motor. A lanyard (short piece of cord) extends from the engine shut-off switch on the tiller to a clip designed to be attached to the operator's body. When the operator falls overboard or away from the motor, the lanyard tightens and pulls out the ignition shut-off switch, cutting the motor off and causing the vessel to stop.

■ A fault was also identified that may have contributed to the seriousness of the incident. Other club members who had used the patrol boat had noticed that it had a tendency to turn

when the wheel wasn't held. An examination of the steering correction trim tab found that it was angled in the wrong direction. The club was unable to determine why or how the tab had been moved.

■ In this incident, a lifejacket was being worn and proved to be invaluable. Had the man not been wearing a lifejacket and been knocked unconscious when he slipped in the boat or was thrown into the water, he could have drowned.

Wearing a lifejacket also reduces people's tendency to panic when they unexpectedly end up in the water, and they are less likely to inhale water in the first few seconds, something which often causes drowning. If he had not been seen by people on shore, he could have spent a long time in the water, risking hypothermia.



Fish in the hold in brine chilled to approximately -17°C .

Fish processing workers suffer frostbite

On the same day two employees, both with minimal experience, suffered from frostbite while unloading fish from the holds of a purse seine vessel. The holds had been filled with brine and chilled to approximately -17°C . In the fish processing process, chilled brine causes the fish to float to the surface, where they can be manually loaded onto conveyor belts.

During the first employee's first two hours' work, water got into his gloves as he was reaching into the hold to unload fish from a vessel. He noticed his hands were numb and very cold, and subsequently took his scheduled break and returned to work with a new pair of gloves.

During his second two-hour shift, he ripped one of his gloves on the spikes of a fish, which caused water to enter the glove.

He noticed that his right hand had gone hard, and when he removed his glove at lunchtime, two of his fingers had gone black. The employee then notified his supervisor who immediately arranged for him to be transported to hospital where he was diagnosed as having frostbite. He was hospitalised for two and a half weeks.

The employee responded very slowly to treatment but still does not have use of the fingers on his right hand.

His fingers remain swollen and stiff, with the joints locked in a fixed position. He must continue to wear compression garments, and is likely to have permanent limited mobility in the four fingers. His treatment is ongoing.

A second employee, who was doing a similar job, noticed his hands were numb and sore at the end of his first shift. During his second shift, his hands became sore and he mentioned this to another employee, who advised him that the best thing to do was to get his circulation going and keep warm.

He continued to work, but tore his gloves on fish spikes, which allowed water to enter them. He put another pair on top, hoping that they would block the holes in the first pair.

At lunch time, the second man asked his supervisor about the best way to get the circulation back to his fingers. She advised him to wrap his hands around a hot cup of coffee.

During the afternoon, the second man was able to rotate between jobs, so his hands were not constantly going into the cold brine.

After his shift had finished, the second man noted that his hand had turned white. He went home but when he awoke the following morning, a large blister had formed over the little finger on his left hand. He then sought medical assistance. He has recovered from the frostbite but is unable to work in cold conditions.

The fish processing company faced a charge under Section 13 of the Health and Safety in Employment Act 1992 (the Act) of "failing to ensure its employees were sufficiently trained and supervised". It was fined \$16,000.



The first employee suffered serious frostbite and his treatment is ongoing.

LOOKOUT! POINTS

- All employees received a pair of thin rubber gloves and cotton glove liners, as well as other waterproof clothing. Both employees suffered frostbite as a result of working with their hands in extremely cold brine.

Both had also torn their gloves on fish spikes, which allowed brine to get into their gloves. In the first case, the employee obtained a new pair of gloves and, in the second case the employee put on a second pair of gloves.

Neither of these actions provided adequate protection from the cold. Just providing safety equipment is not sufficient – all practicable steps must be taken to mitigate or eliminate the hazard.

- Both men also received a safety briefing, but this did not specifically identify the dangers of working in extremely cold brine.

In the first case the man took action himself to reduce the effects of the cold, but this was unsuccessful. In the second case, the man sought the advice first from a fellow employee and then from a supervisor.

Health and safety is something that must be taken very seriously by employees and employers and any potential issues dealt with when they are first raised.

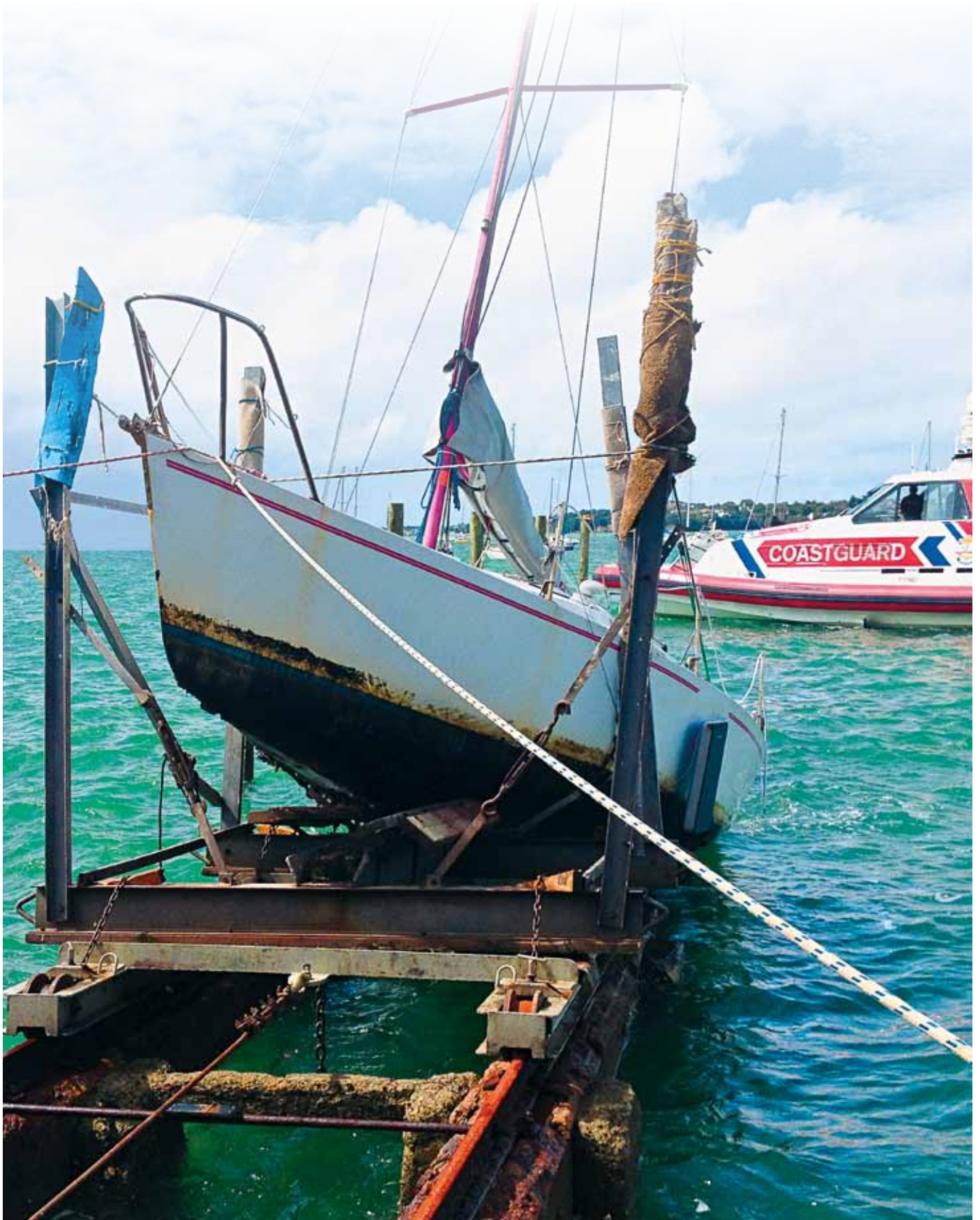
Actual gloves used.



Recommended minimum gloves.



Serious 'slip-up' on slipway



Three men were injured when they attempted to slip a yacht.

Two men were seriously injured and a third badly bruised when a routine operation to take a yacht out of the water for maintenance went awry. Only good fortune prevented someone being killed.

Three friends got together to slip a yacht, having arranged to use a slip service operated by an incorporated society of boat owners.

Two of the men rowed out to the yacht's mooring to bring the yacht to the slipway cradle – in this case, a trolley that runs on rails in and out of the water – and the third crewman remained on shore.

They had received little in the way of instructions from the winch operator but, once on board, they were signalled to position the yacht in the cradle. It was not an operation they had carried out before.

Weather conditions were fine, but the noise created by a 15-knot wind hampered communication between the winch operator and the two crew on the yacht. Aside from shouted instructions, there was no other means of communication in place.

Things got off to a shaky start when the yacht overshot the cradle on the first attempt. The two crew then attempted to reposition the yacht but, unknown to them, it was still not in the right place in the cradle – this time being too far back.

As the men attempted to secure the yacht to the cradle, the winch operator started hauling without warning. The yacht immediately tilted up at an angle of 45 degrees as the keel slipped backwards. The winch operator had assumed the vessel's keel design was similar to another type of vessel with a longer keel, but this was not the case.

At this point, the winch operator stopped the hauling process and left the winch shed to get a better view of the slipway and discuss the situation with the crewman who had remained on shore.

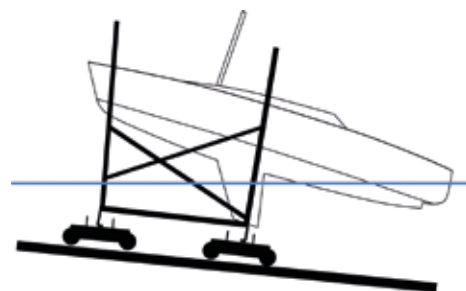
It was decided that the third crewman should row out in a dingy and try to help the other two men use their weight to get the bow down. Given the weight of the vessel – which weighed several tonnes – this was not a sensible approach.

Further confusion resulted, with all three men on the bow as the winch operator again tried to haul the yacht up. By this stage, the yacht was in an extremely dangerous position.

All crew should have left the vessel, but they were unaware of the danger and the three crew remained on the vessel's bow.

As the hauling continued, the yacht's bow rose higher, before dropping suddenly, which caused the keel to fall off the cradle entirely. All three men were sent into the air. One came down on the bollard on the bow, smashing his femur in two places, and another slid down the deck and broke two toes. The third man went over the side but fortunately managed to hold on. He suffered extensive bruising.

There was some delay in obtaining medical assistance, as there was confusion about the physical address of the site. Due to damage incurred as a result of the incident, the yacht is being written off by the owners' insurers.



LOOKOUT!POINTS

Following the accident, MNZ and Ministry of Business, Innovation and Employment conducted an investigation, as did the slipway incorporated society. They identified the following key safety messages:

- All slipways need to give clear guidance to yacht owners before they slip their yachts. Terms and conditions, including health and safety requirements, should be agreed and signed before slipping vessels. Boat owners should be briefed on how to secure vessels to a cradle, and on yard safety procedures.
- Keel design and shape need to be confirmed with the slipway, so that the most appropriate cradle can be used. This is vital to stop vessels falling off cradles. In this instance, the cradle was not appropriate for the yacht.
- Clear communication procedures must be established before slipping a vessel (eg VHF radio or mobile phone).

In this case, communication between the vessel and the winch man was insufficient, especially given the noise from the wind. Weather limits for operation should also be established and followed.

- Winch operators need to have clear sight of the slipway or a spotter in position.
- If yachts reach what could be considered a dangerous angle, all crew must be evacuated to prevent serious harm.
- Yards should have emergency procedures in place for incidents of this nature and accurate location information readily available for emergency services. This yard did not have emergency procedures in place. Following the accident, there was confusion about the physical address of the site, which is vital information for emergency services. The owners of the yacht had to call emergency services and arrange a crane to secure the

yacht, which had been left in a dangerous position.

- It is essential to have a team of experienced people on hand to assist with slippings. Manning levels in the yard and on board need to be appropriate to the task.
- Yards need to have a good working knowledge of their obligations under the Health and Safety in Employment Act 1992 – the society has obligations under the Act for the safety of yacht crews.
- Under the Marine Transport Act, both yards and vessel owners are required to report accidents/incidents to MNZ.
- Since the accident, the yard has extensively improved its safety and hazard management system, putting new in-depth procedures in place to ensure safer operation.

BE SAFE BE SEEN

– swimmers, snorkellers, divers, spearfishers and boaties

Imagine you are in a speedboat cruising more than 200 metres from the shore, when you see a small blue and white flag – or a red flag with a diagonal white stripe – at water level in the distance.

As a skipper, how would you react?

If you do nothing, and keep moving at speed, you may be lucky, and end up with nothing more unpleasant than an irate diver directing hand signals of a less than complimentary nature in your direction. But your luck (and the diver's) may have run out and the worst could happen – you could be disentangling a diver from your propeller and dealing with the potentially tragic consequences.

Under New Zealand law, divers must use the blue and white letter 'A' or alfa flag on their dive vessel to signal diving is being carried out in the area. But as many divers may be international visitors, use of the 'diver down' flag (red with a diagonal white stripe (as used, for example, in the USA and Italy)) is also increasingly common.

In reality, skippers seeing any kind of float on the surface, marked in any way, should use extreme caution.

Accidents involving swimmers, spearfishers and snorkellers being struck by powered craft can result in serious injury or death. And injuries caused by propeller strike are almost always serious.

Because there is very little a person in the water can do to avoid a boat, skippers need to be vigilant and aware of any person in the water, regardless of what activity they are undertaking. People in the water also need to do everything they can to be visible to skippers in boats.

As the number of people involved in recreational water use increases annually, so does the danger to swimmers and divers from vessels travelling at high speed.

Maritime rules place a range of obligations on vessel skippers and divers:

- » **Vessels are required to keep a proper lookout at all times.** This includes actively looking for persons in the water. A high level of vigilance is required, especially when operating close to the shore, where swimmers and divers are likely to be encountered.

- » **Vessels are required to proceed at a safe speed.** The likelihood of persons in the water should always be considered when determining a safe speed.
- » **An 'A' flag (the letter flag A (alfa) under the International Code of Signals) must be displayed from every vessel from which dive operations are taking place.** It means 'I have a diver down; keep well clear at slow speed'.

- » **Vessels are not permitted to operate in excess of 5 knots within 200 metres of a vessel or raft displaying an 'A' flag.**

- » **Vessels are prohibited from operating in excess of 5 knots within 200 metres of the shore.** Consequently swimmers and divers who are within 200 metres of the shore can expect protection from vessels operating at higher speeds.

- » **Vessels are required to keep 50 metres from other vessels or persons in the water if exceeding 5 knots.**

MNZ has investigated a number of accidents where serious harm has been caused to swimmers, spearfishers and divers by vessels operating in excess of 5 knots within 200 metres of the shore. Victims of these accidents have suffered serious injuries and in some cases have been killed.

In addition to complying with the maritime rules, it is recommended that the following points be followed to ensure the safety of persons in the water:

Safety for vessels

- » The responsibility to keep clear of swimmers and divers lies with the vessel.
- » Keep a lookout for swimmers and divers at all times, especially when operating within 200 metres of the shore.
- » There is no legal requirement for divers not accompanied by a vessel to display any flag, although many now tow 'A' flags on floats, or the red and white diver down flag.

- » Swimmers and divers can be encountered well offshore. They can be difficult to see, especially in choppy conditions or in bad light.
- » Vessels should be especially vigilant when operating near beaches in high population areas, where swimmers are likely to be encountered out to or beyond 200 metres from shore.

For dive vessels

- » When divers are swimming from your vessel, you are required to display an 'A' flag of at least 600 x 600mm. The flag must be visible to other vessels at a distance greater than 200 metres. Consider a larger dimension flag to ensure maximum visibility of the dive operation in question.
- » In calm conditions, it is recommended a rigid flag system be used so the flag will be visible to vessels approaching from different directions.
- » Carry a sound device on board to alert other vessels of the presence divers.
- » Dive vessels should ensure that their vessel remains at least within 200 metres of where divers are positioned in the water.
- » Avoid conducting dive operations in areas of high traffic.
- » If you intend operating your vessel, be aware **at all times** of the location of your divers.

Safety for swimmers, spearfishers and divers

- » Swimmers are advised to wear a bright coloured swim cap and swim within 200 metres of the shore.
- » Avoid swimming in areas of high traffic, for example headlands, narrow channels or entrances.
- » Avoid swimming in situations where it will be difficult for vessels to see you, for example where there is reduced visibility or choppy conditions.

» It is recommended that spearfishers and free divers tow a float displaying an 'A' flag. These can be purchased from most dive shops.

» When practicable and when not accompanied by a vessel displaying an 'A' flag, it is recommended that a static float with an 'A' flag be anchored where dive operations are taking place.

» Increasingly, spearfishers are diving into 'boil ups' a considerable distance from the shore to spear fish.

In these situations, other vessels are often unaware of their presence and will enter such areas to engage in fishing operations themselves. It is essential that an 'A' flag be displayed from the dive vessel **and** by the diver if they are venturing any distance from the vessel.

» Where a greater degree of visibility for an 'A' flag is deemed prudent, consideration should be given to a dan buoy rigged with an 'A' flag. This would enable a larger flag than those commonly found on most floats.

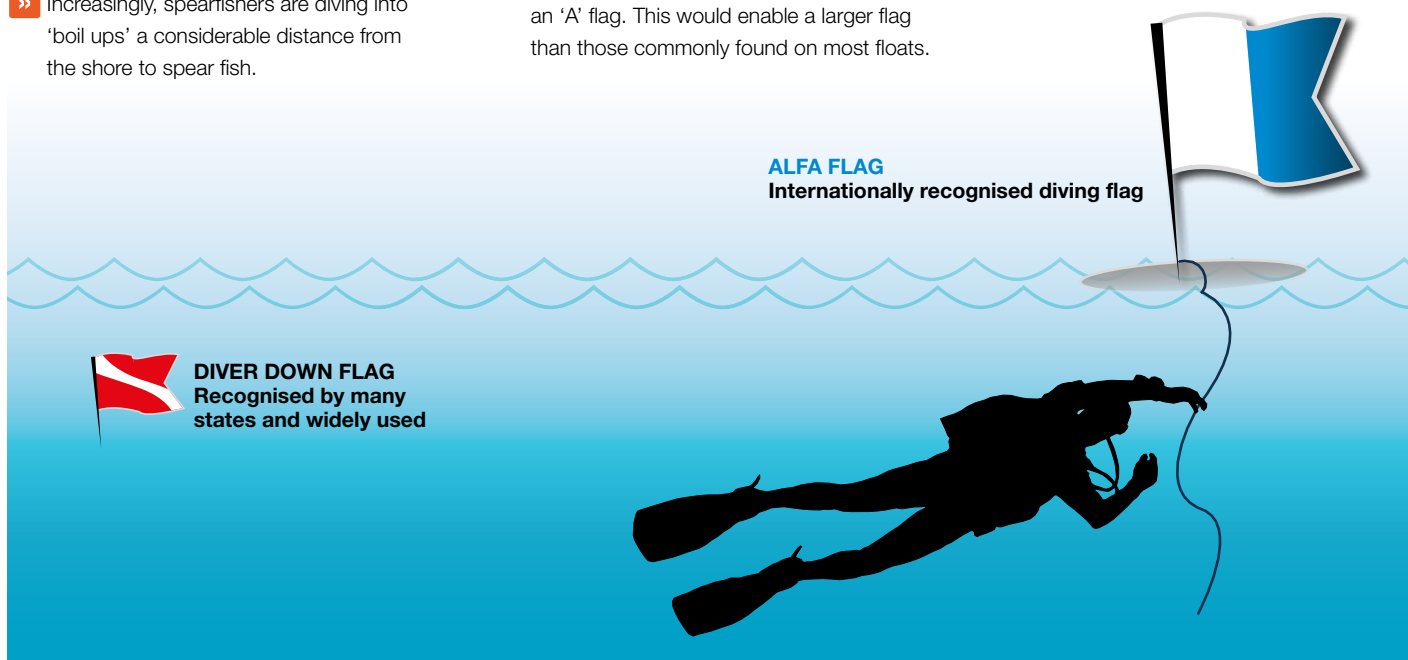
The flag can be displayed at a higher level, making it more visible to other vessels.

» Spearfishers should consider diving in pairs with one person remaining on the surface to keep a lookout for vessels that may present a hazard.

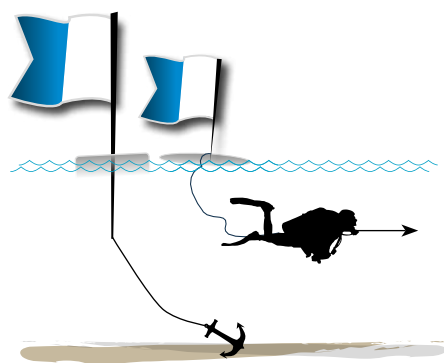
The maritime rules can be found on the MNZ website: maritimenz.govt.nz/rules

ALFA FLAG
Internationally recognised diving flag

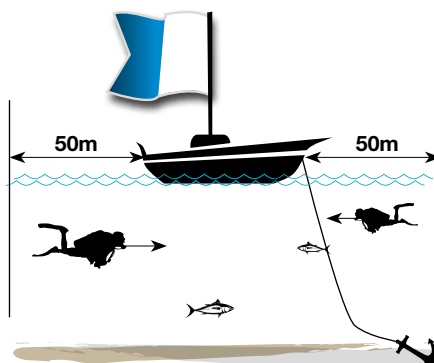
DIVER DOWN FLAG
Recognised by many states and widely used



It is recommended that spearfishers and free divers tow a float displaying an 'A' flag.



Spearfisher with 'A' flag attached.



An anchored vessel displaying an 'A' flag.

Correction

MNZ's December 2011 issue of *LOOKOUT!* (issue 23) contained a story "Vessel strikes spear fisherman" on page 13, where a spear fisherman, Mr Ulrik Pedersen, was hit by a glass bottomed vessel. It stated that the spear fisherman's flag was not the approved white and blue New Zealand dive flag. MNZ acknowledges this statement was only partly correct. Because Mr Pedersen was not diving from a boat, he was not required to display any flag or float under current regulations. MNZ acknowledges this accident was not caused by or contributed to in any way by the spear fisherman Mr Pedersen and apologises if this impression may have been given.

9

Maritime fatalities 2013

From 1 January 2013 to 30 June 2013 there were **9 fatalities** – **1 in the commercial sector** and **8 in the recreational sector**.

This compares with **12 commercial** and **7 recreational fatalities** in 2012.

