

**Report 08-201, fishing charter vessel, grounding, Murimotu Island,
North Cape (Otu), 13 April 2008**

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Report 08-201

fishing charter vessel *Pursuit*

grounding

Murimotu Island, North Cape (Otou)

13 April 2008

Abstract

On Sunday 13 April 2008 at about 1910, the fishing charter vessel *Pursuit* was lying to its anchor on the south-western side of Murimotu Island, North Cape when it grounded on rocks close to its anchored position. The *Pursuit* had 5 passengers and 2 crew on board. The New Zealand Rescue Coordination Centre and Police mounted a rescue operation using the Northland Emergency Services Trust helicopter but the helicopter was unable to winch anyone to safety owing to the weather conditions.. The vessel was subsequently towed off the rocks by another vessel.

There were no injuries to the passengers or crew, but, the *Pursuit* sustained considerable damage to the hull, drive train and steering.

Safety issues identified included:

- selecting a suitable anchoring position in inclement weather;
- the danger of not maintaining an anchor watch during adverse weather; and
- compliance with manning requirements.



The Pursuit in Houhora Harbour

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Abbreviations

DOC	Department of Conservation
FNCR	Far North Coastguard Radio
GPS	global positioning system
ILM	inshore launch master
kW	kilowatt(s)
m	metre(s)
MEC 4	marine engineer class 4
MEC 5	marine engineer class 5
MEC 6	marine engineer class 6
MetService	New Zealand Meteorological Service
mm	millimetres(s)
NIWA	National Institute of Water & Atmospheric Research
nm	nautical mile(s)
NZOM	New Zealand offshore master
NZOW	New Zealand offshore watchkeeper
SSM	safe ship management
UTC	co-ordinated universal time
VHF	very high frequency

Glossary

gross tonnage	a measure of the internal capacity of a ship; enclosed spaces are measured in cubic metres and the tonnage derived by formula
holding ground	bottom of the sea when its nature is such that an anchor will grip with a reasonable amount of security
overran	went past or beyond an anchor's position on the seabed
scope	the amount of cable by which a vessel rides to anchor
tripping	breaking an anchor out of the ground
trolling	a method of fishing where one or more fishing lines, baited with lures or bait fish, are drawn through the water behind a moving boat
wake eddy	a current of air, water, etc. moving against the main current and with a circular motion; in the wake (behind or downwind) of an island or structure

Data Summary

Vessel Particulars:

Name:	<i>Pursuit</i>
Type:	glass reinforced plastic covered wooden hull
Class:	passenger
Limits:	restricted coastal
Length:	16.1 metres (m)
Breadth:	5.04 m
Draught:	1.40 m
Built:	Tauranga, 1997
Propulsion:	2 x 324 kiloWatt (kW) Yanmar 6CX GTE2 diesel engines each driving a fixed-pitch propeller through a reversing gearbox.
Service speed:	15 knots cruising
Owner/operator:	White Island Marine Charters
Home port:	Whakatane
Minimum crew:	2
Date and time:	13 April 2008 at about 1910 ¹
Location:	Murimotu Island, North Cape (Otou)
Persons on board:	crew: 2 passengers: 5
Injuries:	crew: nil passengers: nil
Damage:	hull, steering and drive train damaged
Investigator-in-charge:	Captain Iain Hill

¹ Times in this report are New Zealand Standard Time (UTC + 12 hours) and are expressed in the 24-hour mode.

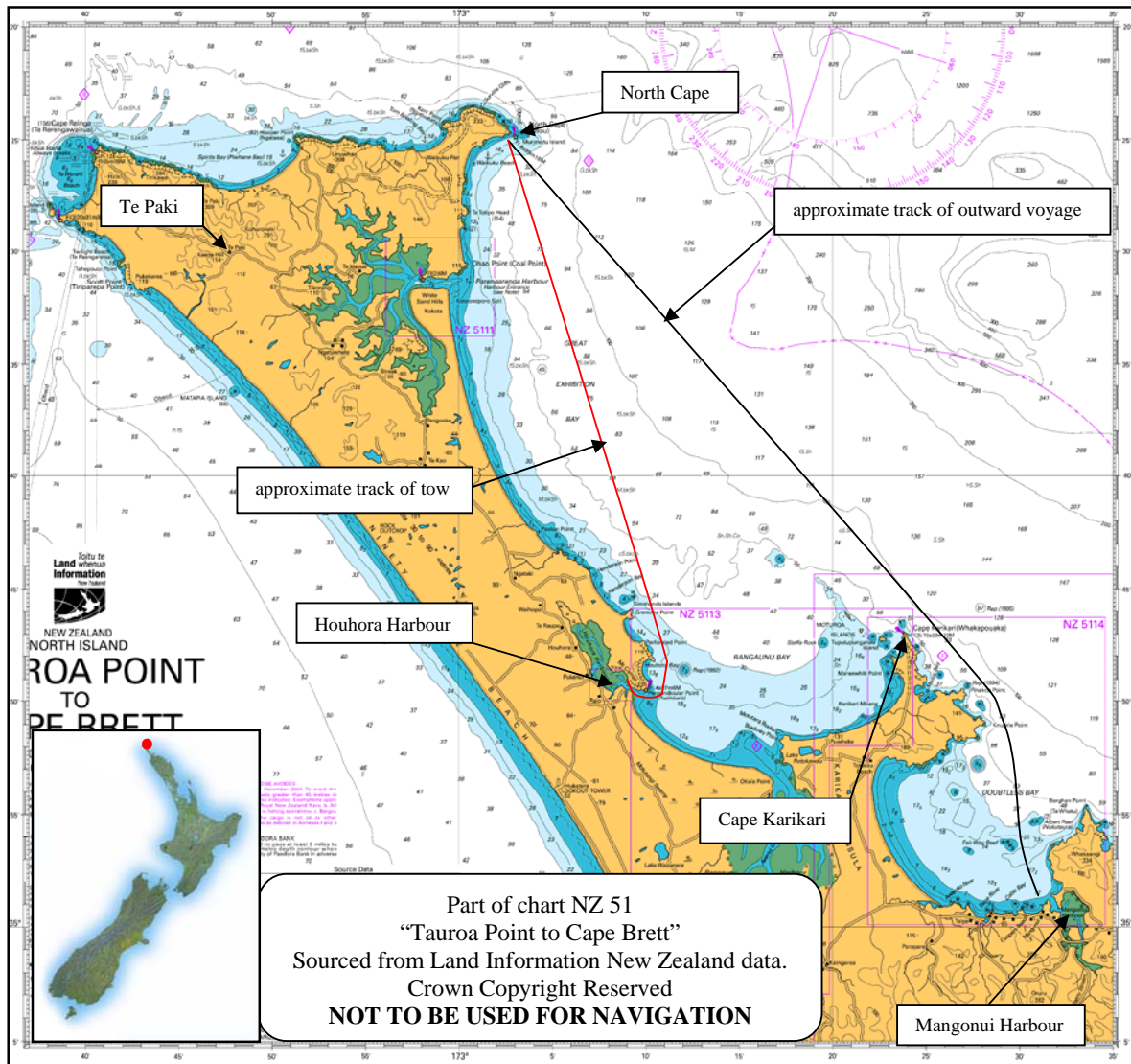


Figure 1
General area of the incident

1 Factual Information

1.1 Narrative

- 1.1.1 In the early evening of Saturday 12 April 2008, 5 passengers boarded the *Pursuit* at Mangonui Harbour for a 6-day fishing trip. They loaded their equipment and stores so an early start could be made the next morning.
- 1.1.2 During the evening, the skipper of the *Pursuit* discussed the inclement weather forecast and explained the fishing area options available. These options included cancelling the trip, fishing off Cape Karikari, going north to shelter behind North Cape until the weather moderated then making for the Three Kings area, or going to the west coast area.
- 1.1.3 The 5 passengers, all seasoned sport fishermen, elected the third option: to head north, shelter behind North Cape until the weather moderated then make for the Three Kings area.
- 1.1.4 On Sunday 13 April 2008 at about 0930, the *Pursuit* left Mangonui Harbour with the skipper, one crew and the 5 passengers on board. The skipper carried out a safety briefing, and once clear of the harbour they commenced trolling for marlin.
- 1.1.5 At about 1500, the *Pursuit* arrived at North Cape and the skipper and crew member anchored the vessel at the anchorage known as “under the light” in about 8 m of water. They then ran out an amount of anchor line that placed the *Pursuit* in about 12 m of water with the bow heading north east into the prevailing wind.
- 1.1.6 The *Pursuit* then sat comfortably at anchor on the same heading as the sport fishermen fished, talked and relaxed. The skipper and crew member regularly checked the vessel’s position using the global positioning system (GPS) and after it had started to get dark started to cook the evening meal. No one was keeping an anchor watch from that time, but the skipper had agreed a plan with the crewmember that if anything happened, he would man the wheelhouse while the deckhand tended to the anchor.
- 1.1.7 At about 1900, just as the skipper and crew member were serving the evening meal they felt the vessel hit an object. The skipper made his way to the wheelhouse while the crew member made his way forward to stand by the anchor winch.
- 1.1.8 The crew member commenced heaving the anchor and cable with the winch in the hope of pulling the *Pursuit* clear of the rocks, while the skipper started the engines and attempted to put the engines into gear. When the skipper engaged the engines he could hear and feel the propellers hitting rocks so he immediately disengaged the engines. The complete scope of the rope, chain and anchor was hauled into the boat but the *Pursuit* remained firmly aground, bow into the rocks.
- 1.1.9 At about 1905, the skipper realised that he could not clear the *Pursuit* from the rocks unaided and called the Far North Coastguard Radio on very high frequency (VHF) radio stating his position and requesting immediate assistance. Far North Coastguard Radio immediately made an all-stations call for any nearby vessels to render assistance and then telephoned Maritime Radio at about 1930 and the New Zealand Police Northern Communications Centre at about 1931. Maritime Radio alerted the New Zealand Rescue Coordination Centre (RCCNZ), which requested it to issue a distress relay message, which was done at about 1941.
- 1.1.10 Several vessels answered the initial all stations call, but, most were several hours’ steaming away from the incident site. At about 1920 the skipper of the *Outer Limits* contacted Far North Coastguard Radio to advise it that although he was in Houhora Harbour he was gathering equipment and personnel to assist him, and would be getting underway as soon as possible.

- 1.1.11 The container ship, the *Kota Jaya* was 20 nautical miles (nm) to the east of North Cape. The master offered assistance if required but the ship was considered too large to approach the scene and its assistance was declined.
- 1.1.12 At about 1940, the *Outer Limits* departed Houhora with the skipper and one crewmember, and 2 other experienced local boatmen on board. Once clear of Houhora Heads they gave their estimated steaming time of 3 hours.
- 1.1.13 At about 1941, the New Zealand Police Northern Communications Centre contacted the search and rescue officer, who advised that a helicopter would be needed to airlift the personnel off of the boat if necessary and he would contact the Department of Conservation (DOC). DOC advised that vehicular access to the Cape area was impossible at the time owing to the weather and ground conditions and the lack of an access road to where the boat was located. DOC suggested that search and rescue and the helicopter use the facilities and helipad located at Te Paki Field Centre.
- 1.1.14 At about 1945, the New Zealand Police Northern Communications Centre contacted the Northland Emergency Services Trust and requested it to dispatch its helicopter from Whangarei to assist in the rescue.
- 1.1.15 The skipper of the *Pursuit* ensured that all his passengers and crew were wearing their lifejackets. Realising that help would be some time away, he decided to increase the draught of the *Pursuit* aft by shifting as much equipment as possible aft and filling as many aft spaces as possible with water. He did this to prevent the boat being driven further ashore by the wind, sea and tide.
- 1.1.16 At about 2120, the rescue helicopter arrived at the scene, but after making several passes over the *Pursuit* the helicopter crew decided that weather conditions were too extreme to lift anybody off the *Pursuit*. The helicopter then returned to Kaitaia to wait for the weather to ease. By this time members of the Kaitaia Police and the Far North St John ambulance service had arrived at Te Paki Field Centre to set up a forward base.
- 1.1.17 At about 2240, the skipper of the *Outer Limits* reported that he had arrived at the scene and was preparing to tow the *Pursuit* off the rocks. By the time the *Outer Limits* arrived at the scene the skipper and deckhand of the *Pursuit* had prepared the anchor warp into a towing bridle made fast to the cleats on either side of the stern.
- 1.1.18 The skipper of the *Outer Limits* manoeuvred his vessel as close as he could to the *Pursuit* then 2 of the people on board launched the inflatable tender and made their way to the *Pursuit*. The *Pursuit's* anchor warp was passed over and made fast to a line from the *Outer Limits*.
- 1.1.19 At about 2257, the skipper of the *Outer Limits* manoeuvred the vessel to take the strain on the lines. As the *Outer Limits* took the strain, the skipper of the *Pursuit* ordered all the passengers to the bow of the boat as far forward as possible while he and the crewmember drained and bailed out as much as they could of the water that they had taken on to lighten the stern.
- 1.1.20 At about 2311, the skipper of the *Outer Limits*, increased the engine power and after a couple of minutes the *Pursuit* was pulled free of the rocks. Once clear of the rocks but still in the relative shelter of North Cape, the crews of the 2 vessels re-arranged the towline for the tow to Houhora Harbour.
- 1.1.21 At about 2330, the rescue helicopter was stood down along with the personnel at the forward base at Te Paki Field Centre.

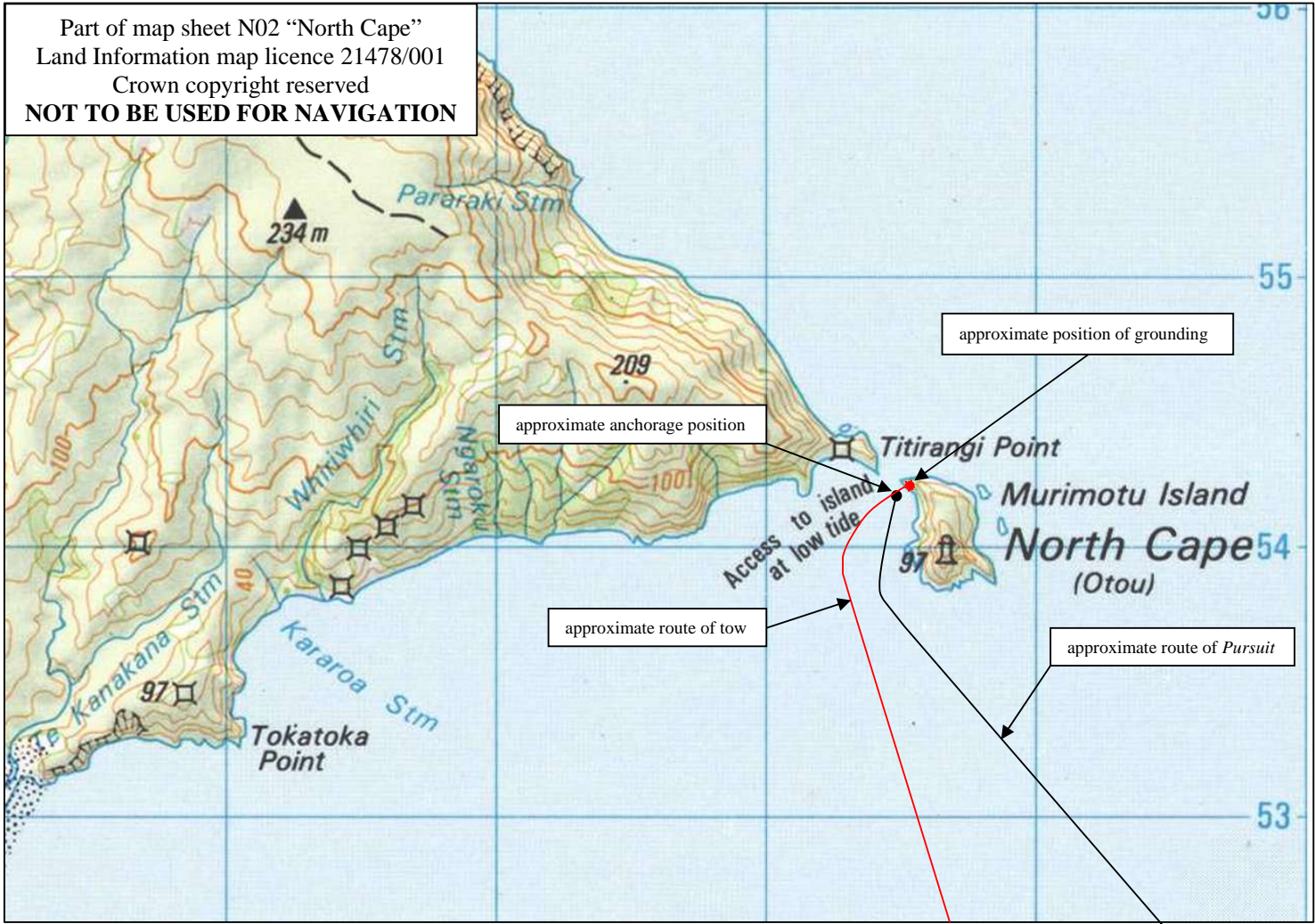


Figure 2
Map showing anchorage and grounding position

1.1.22 On 14 April 2008 at about 0530, as the tow was approaching Houhora Harbour the towline parted so the tow was shortened and the *Outer Limits* completed the tow of the *Pursuit* into the safety of the harbour.

1.2 Vessel information

1.2.1 The *Pursuit* was a 16.1 m monohull boat constructed of wood sheathed in glass-reinforced plastic. It had been designed by Nautic Marine and built by Aztec Marine of Tauranga, New Zealand in 1997. It had a beam of 4.91 m and a gross tonnage of 45.

1.2.2 The *Pursuit* had been built for and was owned by White Island Marine Charters of Whakatane, New Zealand.

1.2.3 The *Pursuit* was powered by 2 Yanmar 6CXM GTE2 diesel engines, each producing 305.74 kW at 2700 revolutions per minute. Each engine drove a fixed-pitch propeller through a reversing gearbox. The *Pursuit* usually cruised at a speed of about 10 knots and had a maximum speed of about 20 knots.

1.2.4 The *Pursuit*'s helm station was fitted with the following equipment for navigation:

- Plastimo Offshore 105 magnetic compass
- GME Electraphone GX 600 VHF radio telephone
- JMC TR-1500 single side band radio transceiver
- JRC NWU – 800 GPS receiver
- JRC JFV – 131 echo sounder
- JRC JMA – 2253 radar.

1.2.5 The *Pursuit* was equipped with 2 stockless anchors each weighing 36 kilograms with 18 m of 12 millimetre (mm) chain fitted. One of the anchors was permanently stowed on the bow of the vessel ready for use. This anchor also had a 170 m of 24 mm diameter terylene warp attached.

1.3 Anchors and anchoring

1.3.1 The essential principle in the action of all anchors is that a surface set at an acute angle to the ground will dig in if pulled horizontally. In order for an anchor to function properly it must satisfy 2 conditions. The first is that in whatever position it may fall as it strikes the sea floor, it must begin to dig in as soon as the pull comes on the chain. The second is that it shall remain in the “digging in” position while it is dragged into the ground or, in other words, it shall be stable in the ground.

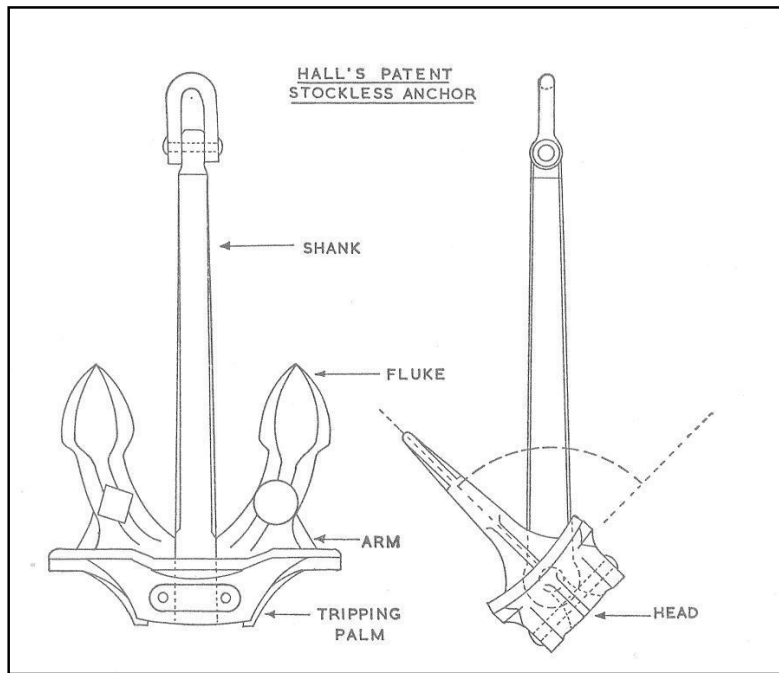


Figure 3
Diagram of a stockless anchor

- 1.3.2 In stockless anchors similar to those carried by the *Pursuit*, there are 2 digging blades set on opposite sides of the shank, and hinged to it by a horizontal hinge, which allows them to set themselves at the correct digging angle which ever way up the anchor may fall on the ground (see Figure 3). There is no difficulty in making them begin to bite as soon as the pull comes on the chain. However, the simple design, consisting of 2 blades set on opposite sides of a shank, is essentially unstable in the ground.
- 1.3.3 The stockless anchor has a holding power, in the region of 3 to 4 times its weight in efficient holding ground, but has a moving part that can become choked with sea-bed material. This can cause the flukes to fail to re-trip should the anchor be broken out of its holding position. The stockless anchor is useful on rocky, foul bottoms as it is relatively heavy and robust and if the anchor becomes fouled it can usually be wrenched clear; conversely the stockless anchor is less useful on shale, shell or mud and sand over a sandstone base. The seabed in the vicinity of where the *Pursuit* anchored was charted as being of fine sand and broken shell. Other more modern designs of anchors such as the plough, claw, delta and Rocna anchors have a greater holding power than the stockless in the bottom conditions in which the skipper anchored.

1.4 Environmental conditions

- 1.4.1 The incident happened in the Brett coastal waters forecast area. The adjacent coastal waters forecast area to the north was Kaipara. The New Zealand Meteorological Service (MetService) issued coastal waters forecasts at well documented, regular intervals.
- 1.4.2 MetService stated that coastal area forecasts were a general indication of average conditions expected in a particular coastal area. The forecasts were for open waters within 60 nm of the coast and did not apply to enclosed areas such as small bays and harbours.

- 1.4.3 The coastal waters' amended forecast issued at 0403, 13 April 2008 and valid until 2359 13 April 2008 was as follows:

Brett

GALE WARNING IN FORCE

Forecast

Northeast 25 knots, but 35 knots north of Doubtless Bay. Sea very rough in the north. Northeast swell rising to 2 metres. Poor visibility in rain.

Outlook

Outlook following 3 days: Northeast 30 knots, becoming Tuesday morning 15 knots, rising later Wednesday 30 knots. sea rough at times. Northeast swell, moderate for a time Monday

Kaipara

GALE WARNING IN FORCE

Forecast

Northeast 25 knots but 35 knots north of Tauroa Point, rising to 35 knots throughout late afternoon or evening. Sea becoming very rough throughout. Northeast swell rising to 2 metres in the north. Southwest swell 1 metre or less. Poor visibility in rain

Outlook

Outlook following 3 days: Northeast 35 knots and very rough sea, ease Tuesday morning northerly 15 knots, rise later Wednesday, 25 knots. Northeast swell in the north, moderate for a time Tuesday.

- 1.4.4 The coastal waters' amended forecast issued at 1606 and valid until 2359 14 April 2008 was as follows:

Brett

GALE WARNING IN FORCE

Forecast

Northeast 35 knots, easing to 25 knots Monday afternoon. Very rough easing. Northeast swell rising to 2 metres. Poor visibility in thundery rain.

Outlook

Outlook following 3 days: Northerly easing Tuesday afternoon 20 knots, becoming early Wednesday variable 10 knots. Moderate northeast swell easing Wednesday.

Kaipara

GALE WARNING IN FORCE

Forecast

Northeast 35 knots easing to 25 knots Monday evening. Very rough sea easing. Northeast swell rising to 2 metres in the north. Southwest swell 1 metre or less. Poor visibility in rain.

Outlook

Outlook following 3 days: Northerly 20 knots easing Wednesday 10 knots. Southwest swell becoming moderate for a time on Wednesday.

- 1.4.5 The skipper stated after the incident that when he initially went to anchor the wind was blowing through the gap between the mainland and North Cape island from a north-easterly direction with a steady force of about 20 knots and gusting to 25 to 30 knots. The swell was "wrapping" around the eastern extremity of the island and into the bay.
- 1.4.6 At the time of the grounding and from then onwards the wind appeared, to the skipper, to be coming from the "southerly quarter" refining into a south-south-westerly direction. Once the tide had changed, the vessel started to experience more of a surge onto the rocks.
- 1.4.7 The skipper of the *Pursuit* estimated that during the recovery tow from North Cape to Houhora, the wind was blowing from the north-east at a steady 30 to 40 knots, gusting more with heavy seas.

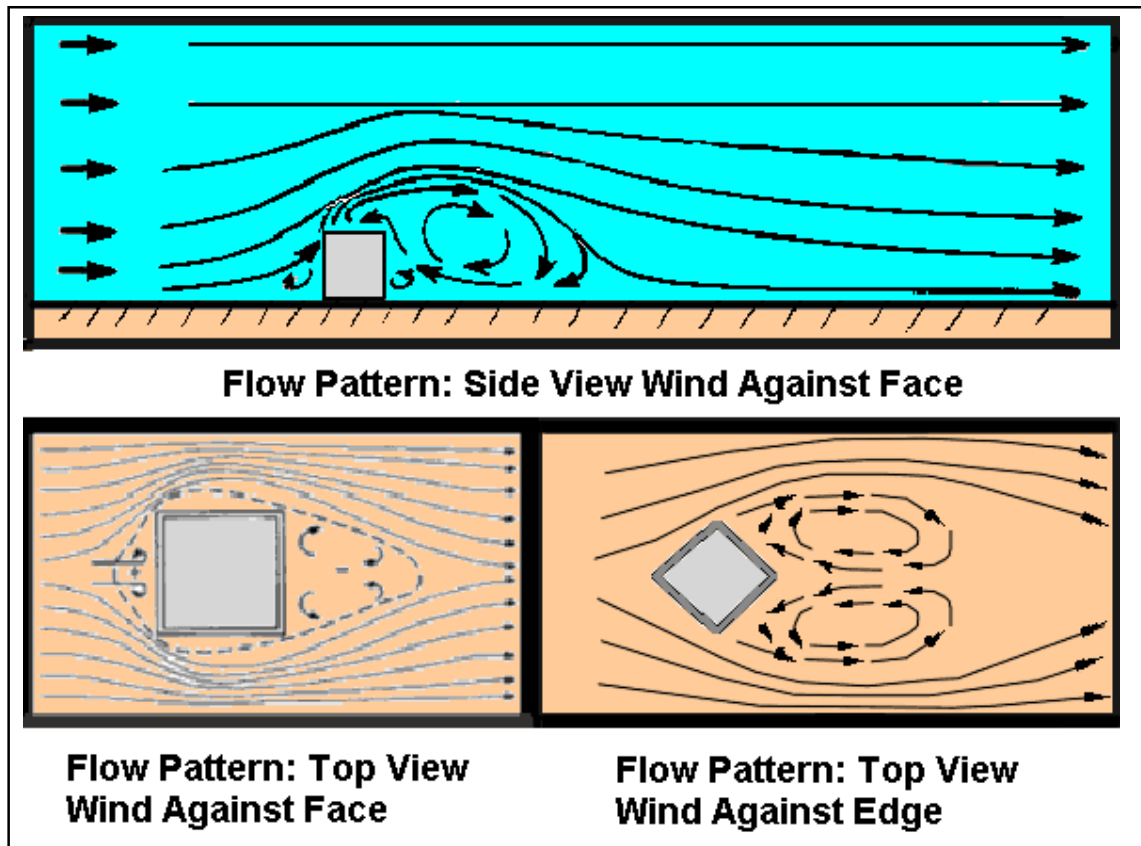


Figure 4
Air flow pattern around a cube

- 1.4.8 Research shows that when wind hits the face of an island, the flow splits and is diverted into several streams, the orientation and number depending on the angle of wind incidence relative to the island's edges and the "flatness" of the upwind island surface. For the simplest situation - a cube or rectangular solid - one flow path rises over the island and 2 go around it.(see Figure 4) The fourth diverts downward along the upwind face, eventually meeting the ground then travelling back upstream to form a reverse eddy in the flow. When the main point of flow separation is high on the island or when the winds are strong, the downward stream can be strong enough to cause hazards.
- 1.4.9 The side streams produce zones of accelerated flow near the island edges and vortices (areas of rotating flow like stationary dust devils) off the back, downwind edges of the island. Just behind it, a dead air zone of light and chaotic flow usually forms. The stream that moves over the island top accelerates along the top upwind edge, then descends some distance downwind from the island to combine with the side vortices to produce a wake eddy. In these vortex zones, and at the points where the flow direction is diverted from the original flow, the turbulence, i.e. the gustiness, is greatly enhanced.

1.4.10 The New Zealand Nautical Almanac did not include either a standard or a secondary port tidal prediction for the area around North Cape, however, the nearest secondary port included in the New Zealand Nautical Almanac was Parengarenga Harbour approximately 7 nm to the south-southwest. The National Institute of Water and Atmospheric Research (NIWA) provided an online service to determine the tidal height at any position around the New Zealand coast. This service was used to determine the times of high and low water for the actual incident location. The calculated times for high and low water at Parengarenga Harbour and North Cape on 13 April 2008 were:

	Date	High Water	Low Water	High Water	Low Water
Parengarenga Harbour	13/04/08	0136	0737	1357	1955
North Cape	13/04/08	0115	0730	1333	1950

1.5 Damage

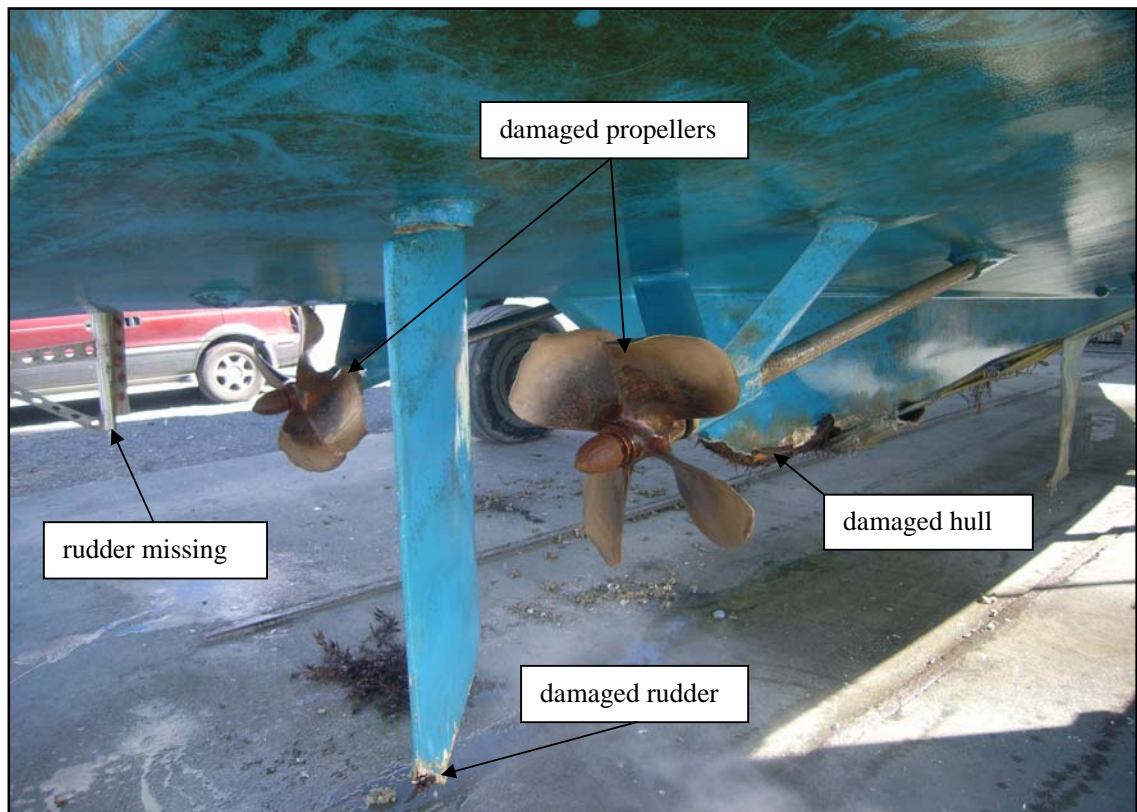


Figure 5
Damage sustained to the drive train and steering of the *Pursuit*

- 1.5.1 The *Pursuit* sustained damage to the underwater hull and fittings where they grounded on the rocky shoreline (see Figure 5). The major items of damage were:
- one rudder was lost
 - one rudder was damaged on its blade
 - both propellers were damaged beyond repair
 - both propeller shafts and drive train required alignment checks and crack testing
 - substantial damage to the hull throughout the length but more extensively toward the stern.

1.6 Safe ship management

- 1.6.1 The *Pursuit* was in safe ship management (SSM) with Maritime Management Services Limited. The certificate had been issued on 5 October 2007 after the specified 4-yearly survey and, subject to periodic audit/inspection of the ship and its management system, was valid until 31 August 2011.
- 1.6.2 On 1 February 1998, Maritime Rules Part 20; Operating Limits came into force, which defined the common operating limits for both fishing ships and non-fishing ships. On 31 August 1999, the *Pursuit* was re-surveyed under the new rules and issued with a fit-for-purpose certificate that designated the previous limits in enclosed, inshore, coastal and offshore areas. On 31 August 2000, the *Pursuit*'s SSM certificate was reissued to cover a similar, but slightly different, area of the coastal limits with an extension to encompass the Three Kings, Ranfurly Bank and Poor Knights Rise areas. On 1 September 2000, a new certificate was issued with the same area specified but this time in the offshore limits. On 31 August 2002, the area in which the *Pursuit* was allowed to operate was changed again to encompass a greater area of the coastal limits that included the previous extension areas within the coastal area.
- 1.6.3 The *Pursuit* was re-surveyed as fit for purpose and issued with a fit-for-purpose certificate on 5 October 2007. The vessel was considered fit to carry no more than 30 passengers in the enclosed and inshore water areas, and no more than 10 passengers in the coastal area.

1.7 Manning

- 1.7.1 Maritime Rules 31B Crewing and Watchkeeping – Offshore, coastal and restricted (Non Fishing Vessels) covered the manning requirements.

“Coastal area” means within the coastal limits set out in Appendix 2 of Part 20:

“Existing vessel” – means a vessel that, on 1 February 2001, is entered in a Safe Ship Management system in accordance with Part 21 or a Safe Operating Plan under Part 40A, Part 40D or Part 80:

“Passenger vessel” means any commercial ship that carries:

- (a) more than 12 passengers outside the restricted area; or
- (b) any passengers within the restricted area:

Rule 31B.6 General Requirements, stated:

- (1) Except as provided in rules 31B.6(2) and (7), the owner and the master of a vessel must not operate that vessel unless there is on board the number of crew necessary to operate the vessel safely, taking into account the requirements of rule 31B.8, and at least the minimum number of crew including seafarers holding the qualifications required by
 - (a) the applicable tables and flow-charts in rules 31B.9 to 31B.15 inclusive; or
 - (b) a Minimum Safe Crewing Document issued by the Director in accordance with rule 31B.7(3).
- (7) The owner and the master of an existing vessel in respect of which no current Minimum Safe Crewing Document is held may, despite rule 31B.6(1), operate that vessel until 1 February 2002, if they:

- (a) comply with the requirements of the Shipping (Manning of Restricted-Limit Ships) Regulations 1986 that were applicable to that vessel on 31 January 2001; and
- (b) carry on board the number of crew necessary to operate the vessel safely taking into account the requirements of rule 31B.8.

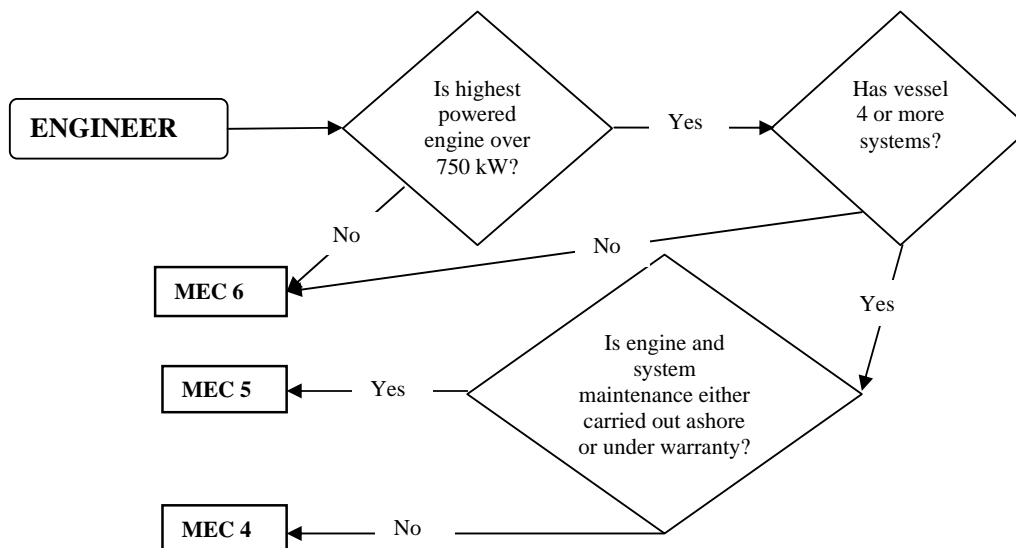
Rule 31B.13 Coastal Area stated:

Except as provided by rule 31B.6(1)(b), non-passenger vessels operating in the coastal area must carry at least –

- (a) seafarers holding the minimum required qualifications specified in Table 5 and in the accompanying flow-chart; and
- (b) the minimum crew specified in Table 5

Table 5

<i>Vessel</i>	<i>Minimum Required Qualifications</i>	<i>Minimum Crew</i>
24 m or more length overall but less than 45 m in length	Master – NZOM Mate – NZOW Engineer – in accordance with flow chart and may be the mate	3
Less than 24 m length overall	Master – NZOW with command endorsement Mate – ILM Engineer – qualification in accordance with flow chart and may be the mate	2



When Maritime Rules Part 31B was issued, an accompanying advisory circular was also issued. The advisory circular contained general advice on the purpose of advisory circulars:

Maritime Safety Authority advisory circulars are designed to give assistance and explanations about the standards and requirements set out in the rules. However, the notes contained in advisory circulars should not be treated as a substitute for the rules themselves, which are the law.

If advisory circular material advises how a rule requirement can be satisfied, then compliance with that advice ensures compliance with the rule. Other methods of complying with the rule may be possible, however the Maritime Safety Authority would require satisfying that those alternative means of compliance

were to an equivalent standard to the advice in the advisory circular. The advisory circular would then be amended to include those equivalents.

Advisory circular section AC 31B.10 Navigational Watchkeeping at Sea, paragraph (10) Watchkeeping under different conditions and in different areas stated:

Vessel at anchor

- (i) If the master considers it necessary, a continuous navigational watch should be maintained at anchor. in all circumstances while the vessel is at anchor, the officer in charge of the navigational watch should –
 - (i) determine and plot the vessel's position on the appropriate chart as soon as practicable; and
 - (ii) when circumstances permit, check at sufficiently frequent intervals whether the vessel is remaining securely at anchor by taking bearings of fixed navigational marks or readily identifiable shore objects; and
 - (iii) ensure that proper look-out is maintained; and
 - (iv) ensure that inspection rounds of the vessel are made periodically; and
 - (v) observe meteorological and tidal conditions and state of the sea; and
 - (vi) notify the master and undertake all necessary measures if the vessel drags anchor; and
 - (vii) ensure that the state of readiness of the main engines and other machinery is in accordance with the master's instructions; and
 - (viii) if visibility deteriorates, notify the master; and
 - (ix) ensure that the vessel exhibits the appropriate lights and shapes and that appropriate sound signals are made in accordance with Part 22 and any other applicable regulatory requirements; and
 - (x) take measures to protect the environment from pollution by the vessel and comply with applicable pollution regulatory requirements.

The information contained in the advisory circular reflected the contents of Marine Notice, Boats 12/1996, August; issued by the Maritime Safety Authority (see Appendix 1) after the grounding of a vessel at anchor.

- 1.7.2 The skipper of the *Pursuit* had been in and around the fishing industry in Southern California from about the age of 3. In the early 1970's he had obtained his United States Coastguard 100 ton ocean going operator's certificate. In 1978 the skipper moved to New Zealand and in 1979 was awarded a certificate of equivalent competency as a skipper, coastal fishing boat which was equivalent to a New Zealand offshore master's certificate limited to within 100 nm of the coast. The skipper also held a second class diesel trawler engineer's certificate of competency which was equivalent to an MEC6.
- 1.7.3 The deck hand on the *Pursuit* had worked on board the *Pursuit* since June 2007 but held no seagoing qualifications at the time of the incident.
- 1.7.4 All of the 5 passengers had been on board charter fishing vessels as passengers numerous times in the previous few years; all of them had been on board the *Pursuit* before. None of them had any maritime qualifications.
- 1.7.5 Where the incident occurred was within the inshore limits, so the deckhand in that case was not required to hold an inshore launch master (ILM) certificate of competency as for the coastal limits, but had the vessel reached its destination of the Three Kings, it would have been in coastal limits, where the deckhand would have required an ILM for the vessel to comply with the Maritime Rules.

2 Analysis

- 2.1 There were several possible reasons for the *Pursuit's* grounding on Murimotu Island. A vessel can swing around its anchor under the influence of wind, tide and currents. Tidal flows around islands, and in particular through channels such as between Murimotu Island and the mainland, can be erratic. Wind around high topography can be gusty and erratic in direction. The skipper could simply have anchored too close to the rocks, relying on a steady wind from the northeast to stream the vessel away from the island, so when the wind and possibly the tide changed, the vessel overrode the anchor and grounded bow first.
- 2.2 A second possibility is that the anchor was not set well and broken free from the bottom when the vessel overrode it or swung around and exerted a pull from another direction. There are a number of reasons why a stockless anchor might not set well; uneven holding ground, a twist or loop in the chain or debris jamming the moving parts to name a few.
- 2.3 The skipper of the *Pursuit* chose the anchorage position using his knowledge, that he had anchored there before and other vessels had been anchored there before. In deciding where to anchor he considered the comfort of his passengers ensuring that he did not anchor too far out from the shoreline where the sea and swell were greater.
- 2.4 By both the skipper and deck hand staying below and engaging in meal preparation, their reliance on the direction of the wind remaining steady and the anchor holding was total. Given the vessel's proximity to the shore and the forecast weather, keeping an anchor watch would have been a reasonable expectation.
- 2.5 The skipper thought that the scope of cable laid out for the anchor was sufficient for the *Pursuit* to lie comfortably at anchor in the weather at the time of anchoring and for the forecast increase in the strength of the wind. The *Pursuit* initially lay at anchor with its bow to wind and shore. However, in laying out the cable the skipper did not anticipate that the wind could change direction for the worse. When the strength of the prevailing wind increased the form of any wake eddy could change giving an apparent change of wind to the south and driving the vessel over the anchor.
- 2.6 When the vessel was built and outfitted it was equipped with 2 stockless anchors. These anchors were, at the time, the most suitable for the area in which the vessel was operating and suitable general-purpose anchors. More modern designs of anchors are available, of which some would have been more suitable for anchoring in the area around North Cape. However, it would be unreasonable to expect the skipper of any vessel to carry a range of anchors expressly for different types of seabed. Some form of compromise solution, such as the stockless anchor as fitted, suitable for several different sea beds would be required and the limitations noted.
- 2.7 The skipper and deckhand became engrossed in preparing a meal for the passengers which meant that an opportunity was missed for the skipper to ensure that a full and efficient anchor watch was being maintained utilising all methods available to do so. Had an efficient anchor watch been maintained the skipper would probably have been alerted to the *Pursuit's* movement and would have been able to take appropriate action before the vessel grounded.
- 2.8 The basic seaman like precautions to undertake while at anchor, especially in adverse weather conditions are widely taught through industry training organisations, Maritime New Zealand educational material such as "Marine Notice Boats – 12/1996 August" and contained in the Maritime Rules advisory circulars. The skipper might not have considered it necessary for a continuous navigational watch to be maintained at anchor, but it might have been more prudent for him to have done so considering the expected adverse conditions. Had the skipper decided that a continuous anchor watch was not necessary, it would have been reasonable to expect the skipper, in the prevailing conditions, to have ensured that an electronic watch was maintained using the alarm features provided on the navigational equipment such as the radar proximity alarm, echo sounder depth alarm and GPS alarm.

- 2.9 The skipper did not issue a distress call on the international calling and distress VHF channel 16. Instead he relied on calling on VHF channel 60. The Far North Coastguard Radio operator correctly instigated the procedures for a distress situation and informed all the appropriate agencies as part of Far North Coastguard Radio's distress/urgency procedure as well as transmitting an all-ships message on its radio frequencies. In this case there was little delay in all relevant parties being informed of the plight of the *Pursuit*, but the reluctance to use, or lack of knowledge on the correct distress frequency has caused delays in effecting rescues during other maritime emergencies.
- 2.10 The skipper said later that he thought that more vessels that could assist him would have been listening to the Far North Coastguard Radio working frequencies other than on channel 16. However, all vessels should have been monitoring VHF channel 16 while at sea and the appropriate authorities would have been immediately alerted to the incident and could have immediately taken appropriate action.
- 2.11 It is not clear whether the deckhand having the required maritime qualification would have altered the outcome of this event. But this is another example of non-compliance with the Rules. In this case the oversight by both the skipper and the SSM company may have been unintentional, as the operating limits had been changed several times and there had been previous "grandfathering" of old legislation regarding manning levels and qualifications. The Commission has highlighted a problem with non-compliance with Rules around operating limits and the manning of fishing boats in previous reports and SSM either condoning or being ignorant of non-compliance.
- 2.12 Two safety recommendations have already been made to the director of Maritime New Zealand. The first, 028/05, was made in 2005 and recommended that the director:
- In order to reduce confusion and the possibility of misinterpretation, develop a policy to rationalise and simplify the current maritime rules concerning the crewing and watchkeeping requirements for non-SOLAS vessels, and the limits in which they operate.
- The second, 037/07, was made in 2007 and recommended that the director:
- Review the qualifications structure and the seagoing limits so as to ensure that the intent of the Commission's recommendation 028/05 (see below) is upheld.
- On 15 November 2007, the Director of Maritime New Zealand replied:
- Maritime NZ has already identified this matter as a priority item within its action plans for the 2008/2009 year. This recommendation is acceptable to Maritime NZ.
- In view of this response no further safety recommendation covering this aspect has been made in this report. However, the results of the programme of work will be monitored through the Commission's recommendation status report instead.

3 Findings

- 3.1 The *Pursuit* ran aground on rocks when it overran its anchor cable, most likely tripping the anchor free from its holding ground when the wind increased sufficiently to form a wake eddy; on the lee side of Murimotu Island, with sufficient force to cause the *Pursuit* to be pushed onto the rocks.
- 3.2 A second possibility for the *Pursuit* grounding was that not enough distance had been allowed from the rocks in relation to the scope of the anchor chain and warp, resulting in the vessel running aground before being pulled up by the anchor when the direction of the wind and/or tide changed.
- 3.3 The total absence of any form of anchor watch was a significant factor contributing to the grounding.
- 3.4 The *Pursuit* was not crewed as required by the Maritime Rules for the intended voyage, although this probably did not contribute to the grounding.
- 3.5 The method of sending the distress message via local radio frequency was not in accordance with recommended procedures. Although in this event it resulted in a timely emergency response, the opportunity for rescue by craft listening on the dedicated international distress frequency VHF channel 16 was lost until Maritime Radio later initiated a distress relay call.

4 Safety Recommendations

- 4.1 The Commission has not identified any new meaningful recommendations that could have prevented this accident that have not already been identified and widely taught through industry training organisations and Maritime New Zealand educational material (see Maritime New Zealand Marine Notice, Boats 12/1996, August in Appendix 1 and the extract from the Maritime Rules 31B advisory circular in Appendix 2). This occurrence report does, however, offer a number of lessons that can be useful to the maritime industry and the general public simply through its dissemination and readership.



**Boats - 12 /1996
August**

Notice

Anchor watches

Recently, in only moderate sea conditions, an anchored vessel grounded off the coast of New Zealand. Prior to the grounding, it was found that only an occasional watch had been kept of the vessel's position.

Mariners are reminded of the importance of keeping, when necessary, a continuous navigational watch when at anchor.

In all circumstances, while at anchor, it is recommended that the Mariner who is keeping a watch should:

- (i) Determine and plot the vessel's position on the appropriate chart as soon as possible after anchoring.
- (ii) When circumstances permit, check at frequent intervals whether the vessel is remaining securely at anchor by taking radar/visual bearings and distances of fixed navigation marks or readily identifiable charted shore objects.
- (iii) Ensure that an efficient lookout is maintained at all times.
- (iv) Ensure that inspection rounds of the vessel, including the anchor cable, are made periodically.
- (v) Keep a careful check on weather and tidal conditions and the state of the sea and swell.
- (vi) Immediately notify the Master/Skipper if the vessel starts to drag anchor.
- (vii) Where possible, ensure the main engine is kept on stand by, ready for immediate use, in the event of an emergency.
- (viii) Ensure that the vessel exhibits the appropriate lights and shapes and that appropriate sound signals are made as required by the Collision Regulations.

Appendix 2

Advisory Circular Part 31B Crewing & Watchkeeping - Offshore, Coastal & Restricted (Non-Fishing Vessels)

AC 31B.10 Navigational watchkeeping at sea

Vessel at anchor

- (i) If the master considers it necessary, a continuous navigational watch should be maintained at anchor. In all circumstances while the vessel is at anchor, the officer in charge of the navigational watch should –
 - (i) determine and plot the vessel's position on the appropriate chart as soon as practicable; and
 - (ii) when circumstances permit, check at sufficiently frequent intervals whether the vessel is remaining securely at anchor by taking bearings of fixed navigation marks or readily identifiable shore objects; and
 - (iii) ensure that proper look-out is maintained; and
 - (iv) ensure that inspection rounds of the vessel are made periodically; and
 - (v) observe meteorological and tidal conditions and the state of the sea; and
 - (vi) notify the master and undertake all necessary measures if the vessel drags anchor; and
 - (vii) ensure that the state of readiness of the main engines and other machinery is in accordance with the master's instructions; and
 - (viii) if visibility deteriorates, notify the master; and
 - (ix) ensure that the vessel exhibits the appropriate lights and shapes and that appropriate sound signals are made in accordance with Part 22 and any other applicable regulatory requirements; and
 - (x) take measures to protect the environment from pollution by the vessel and comply with applicable pollution regulatory requirements.



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