



Accident Report  
*San Tongariro*  
Grounding at French Pass  
on 11 August 2004



REPORT NO.: 04 3528  
VESSEL NAME: *SAN TONGARIRO*

### Casualty Details:

Date of Casualty: 11 August 2004  
Time of Casualty: 0315 hours New Zealand Standard Time (NZST)  
Casualty Type: Grounding  
Casualty Location: French Pass  
Weather Forecast Area: Stephens  
Investigator: Domic Venz



REPORT NO.: 04 3528  
VESSEL NAME: *SAN TONGARIRO*

Vessel Details:

Ship Name:	<i>San Tongariro</i>
Date of Build:	1996
Ship Category:	Fishing vessel
Certified Operating Limit:	Unlimited
Overall Length (m):	32
Maximum Breadth (m):	10.02
Gross Tonnage:	498
Net Tonnage:	149
Flag:	New Zealand
Registered Owner:	Sanford Ltd
Classification Society:	Bureau Veritas



## SUMMARY

On 10 August 2004, the fishing vessel *San Tongariro* departed Port Nelson bound for the hoki fishing grounds of Cook Strait.

During the morning of 11 August, the vessel approached French Pass. On the bridge was the Skipper and the Mate. The second steering pump was activated and the Skipper activated hand steering for the transit of the Pass. At about 0315 hours, while attempting to correct the port swing of the vessel, the steering system failed with the rudder over to starboard. The vessel swung to starboard. The Skipper was unable to correct this and the vessel grounded immediately south of the Channel Point light at French Pass. Checks were made of the vessel and no ingress of water was found. The vessel later refloated with the north flowing current and returned to Port Nelson for repairs.



## Key Events

- 1.1 At 1200 hours, New Zealand Standard Time (NZST) on 9 August 2004, the fishing vessel **San Tongariro** arrived in Port Nelson to discharge its catch of Hoki.
- 1.2 At 0800 hours, on 10 August, shore based company staff commenced unloading the vessel. The ship's crew went about their own personal business for the day.
- 1.3 During the evening the vessel was prepared for departure. At 2300 hours, the vessel departed Port Nelson bound for Cook Strait via French Pass.
- 1.4 The Skipper was helming the vessel from the wharf until they had cleared the entrance to the port; the Skipper set the variable pitch control to 85% which gave a speed of about 9 knots. He then handed over the watch to a crewman near the pilot boarding station, outside the port. The Skipper then retired to his bunk.
- 1.5 At 0230 hours, on 11 August, the crewman woke up the Skipper approximately 1.25nm due west of Okuri Point. The Skipper came to the wheelhouse and sent the crewman to bed. He told him to wake up the Mate on his way down.
- 1.6 The Mate came to the wheelhouse shortly after this.
- 1.7 With about 4½ nm to run to French Pass, the Skipper heard another fishing vessel, **Amaltal Mariner**, give its 10 minute south west bound call on VHF channel 16.
- 1.8 When **San Tongariro** was about 2 nm away from French Pass, the Skipper gave his 10 minute call on VHF channel 16. At this point they passed the southbound **Amaltal Mariner**.
- 1.9 With 1 nm to run to the Pass, the Skipper took the vessel off automatic pilot and engaged manual steering and activated a second steering pump. He put the manual toggle steering control over to 20° each way to test the reaction time and see if the second pump had come on line. He found the steering working satisfactorily.
- 1.10 When the vessel had closed to within about 150 metres of the Pass, the Skipper took one last look at the radar and then solely navigated the vessel by looking at Channel Point light to starboard and the French Pass reef light to port. While the Skipper conned the vessel from the navigation console, positioned amidships in the wheelhouse, the Mate went forward to stand close to the forward wheelhouse windows.
- 1.11 The vessel reached a position with about 50 to 100 metres to go to transit the Pass. The Skipper made a small alteration of 15° to starboard. He then applied about 15° of port helm to correct this, but the vessel did not respond immediately in the usual manner. He then attempted to apply more port helm but to no avail.
- 1.12 At this time, the bow of the vessel was still swinging to starboard and the Mate remarked to the Skipper that the Channel Point light was getting very close ahead. The Skipper then attempted to put the rudder over to full port but the vessel did not respond.
- 1.13 At 0315 hours, **San Tongariro** grounded by the bow, about 12 to 15 metres immediately south of the Channel Point light (*See Appendix 1 - Grounding Position*).
- 1.14 The Skipper pulled the variable pitch propeller back to zero and activated the general alarm. Shortly after this, all crew had mustered in the wheelhouse and the Skipper assigned them various areas of the vessel to check for damage and water ingress.



- 1.15 The Skipper then called *Amaltal Mariner* on VHF channel 16 and advised them of the grounding. He also asked them if they could return to French Pass and tow them off. The Skipper of *Amaltal Mariner* declined the request. He called the Vessel Manager by cellular phone and advised him of the situation.
- 1.16 The vessel had come to rest in a bow up attitude with the bulbous bow exposed and a list to port. The stern was well out in deep water and an investigation, using a searchlight, revealed that there was an ample amount of clear water all around the aft area of the vessel. After a time the starboard generator started to overheat due to the fact that the cooling water intake was out of the water. The Engineer switched over to the port generator which continued to supply electrical power to the vessel.
- 1.17 Shortly after this, the Skipper attempted three times to manoeuvre the vessel clear of the ground, but the main engine overheat alarm sounded each time after he applied full astern pitch and high main engine revolutions.
- 1.18 The Skipper then walked out the anchor and readied the rescue boat by hanging it over the side of the vessel. He also instructed the Engineer to start pumping out the fresh water. He got the crew to turn on all the fresh water taps in the accommodation.
- 1.19 At 0450 hours, the stern of the vessel started to swing to port, the Skipper immediately applied full astern pitch and the vessel came off the rocks. The stern continued to swing to port and before the Skipper could activate ahead pitch, the aft area of the vessel struck rocks immediately under Channel Point light. Ahead pitch then activated and he steamed the vessel out of the Pass area, south through Current Basin and back to Port Nelson.
- 1.20 During the passage back to Port Nelson the steering was operating satisfactorily both in automatic pilot and manual modes. The rudder indicator did however show that the rudder was at 10° to port while the vessel steamed in a straight line.
- 1.21 The vessel arrived in Port Nelson at about 1000 hours, where the Maritime Safety Authority, the Owners and Bureau Veritas, the ship's Classification Society, attended. An underwater camera survey of the hull and rudder was commenced which revealed serious damage to the box keel and rudderpost, necessitating that the vessel be slipped.
- 1.22 On 12 August the vessel was slipped and repair made to the rudderpost and box keel.
- 1.23 The Owners stood the Skipper down for 5 days and the vessel's crew was instructed not to transit French Pass until all steering problems had been fixed.



# Key Conditions

## 2.1 Vessel Details

- 2.1.1 *San Tongariro* is a trawler of steel construction, built in Spain in 1996. She was purpose built for New Zealand conditions as a fresh fish (bin and ice) vessel. She has an overall length of 32.0 metres, a breadth of 10.02 metres and a gross tonnage of 498. A 1 000 kW Caterpillar main engine, model 3546, powers the vessel via a variable pitch propeller (VPP).
- 2.1.2 Sanford Limited owns the vessel.
- 2.1.3 The vessel had a valid certificate with the Bureau Veritas (BV) Classification Society. The vessel also had a valid Safe Ship Management (SSM) Certificate with SGS-M&I-M&I Ltd. She was fit to ply as an unlimited fishing vessel.

## 2.2 Manning Details

- 2.2.1 The Skipper holds a Skipper of a Deep Sea Fishing Boat (SDSFB) Certificate, obtained in 1997. He also holds a valid Port Nelson Pilot exemption. He has been Skipper of *San Tongariro* since the vessel was a new build. He has transited French Pass over 200 times.
- 2.2.2 The Mate holds a New Zealand Coastal Masters (NZCM) Certificate, obtained in 1992.
- 2.2.3 The vessel was correctly manned in accordance with **Maritime Rule Part 31C**.

## 2.3 Navigational Equipment

- 2.3.1 The Skipper was navigating using the following navigational aids: -
- C Plot computer based track plotter
  - Furuno GD 188 GPS receiver
  - 2 x Furuno echo sounders, 1 on 20 metres, and 1 on 100 metres
  - Furuno radar
  - Robertson AP 45 autopilot
  - The Skipper activated the second steering pump when close to French Pass. This gave a lock-to-lock time for the rudder of 7 seconds.

All the above equipment was operating satisfactorily during the steam from Port Nelson until immediately before the grounding.

## 2.4 Vessel Inspection/Damage/Repair

- 2.4.1 The Owners, using underwater camera technology, commissioned an in-water occasional survey. This revealed that the box keel was damaged between frames 44 and 53. A weld on the box keel at frame 49 was cracked along its entire breadth. The lower cover of the transducer housing was damaged and rubbing marks were observed at various points on the underwater hull structure.
- 2.4.2 On 12 August, the vessel was slipped. Additional damage to that referred to in **2.4.1** was found. This included the rudderstock twisted to approximately 12° over an area of about 600 millimetres (mm) of the length of the stock. Buckling in the forepeak tank bottom transverse at frame 53. Hull plating set in over an area approximately 300mm x 300mm between frames 52 and 54.



2.4.3 The following repairs were carried out:

- Box keel between frames 44 to 53 cropped out and renewed, total length 4.6m
- Lower cover of the transducer housing renewed using 12mm plate
- Thickness gauging carried out on the hull near rubbing marks, all within 10.0 mm to 10.3mm.
- Rudder stock dismantled, old key way welded and new key way machined and fitted. Rudderstock was stress relieved in a furnace at 625° for four hours.
- Forepeak tank steel renewed on bottom transverse at frame 53 using 12mm steel plate.
- Steel renewed on hull structure between frames 52 and 54 using 12mm steel plate.

## 2.5 Steering Malfunctions

2.5.1 The Skipper of *San Tongariro* reported steering problems when using the autopilot on previous trips. Electronics technicians attended the vessel in Nelson on 21 July 2004 and found the port and starboard steering relays to be badly pitted and burnt. These were replaced and the system tested satisfactorily.

2.5.2 On 9 August, technicians were again called to vessel for ongoing intermittent steering problems with the autopilot. They found a loose solenoid connection on one steering pump, replaced a relay in the autopilot, tested the system and found it to work satisfactorily.

2.5.3 On 12 August, the technicians visited the vessel but were unable to identify the cause of the manual steering fault.

2.5.4 During a trip after the grounding, the vessel suffered a problem with the steering, both when on autopilot and in manual modes. After getting back to port in Timaru, a problem was found with a secondary feed line from a back-up flux gate compass to the autopilot. Since removing this feed, the system has been operating correctly.



## 2.6 Environmental Details

2.6.1 The weather conditions were poor when *San Tongariro* was steaming up Tasman Bay for French Pass. The wind was about 30 to 35 knots from the northwest with an associated wind swell and chop and poor visibility.

2.6.2 Upon approach to French Pass the vessel was in a lee created by D'Urville Island. The wind reduced to 15 to 20 knots from the northwest with good visibility.

2.6.3 While the vessel was aground, the wind strengthened to around 30 to 35 knots from the north-northwest.

2.6.4 French Pass tidal stream information, as listed in the New Zealand Nautical Almanac for 11 August 2004 states:

*"tidal stream will begin flowing to the northeast at 0319 hours."*

*San Tongariro* grounded at the Pass at 0315 hours.

2.6.5 By 0450 hours, the stern of the vessel was moved by the increasing northeasterly tidal stream flow. The Almanac states that these streams can attain rates from 5 to 7 knots. A change to a tidal stream to the southwest was predicted to start at 0959 hours.

## 2.7 Human Factors

- 2.7.1 All seagoing crew were well rested. They were not required to participate in the unloading of the catch. The unloaders started at 0800 hours, the morning after the vessel berthed from the previous trip.
- 2.7.2 Both the Skipper and Mate manned the wheelhouse for the transit of French Pass and both were rested.

## 2.8 Instructions to Masters

- 2.8.1 Sanford Limited had issued to the Skipper and Mate a copy of 'Skipper's Declaration and Instructions to Masters'. The Skipper signed his declaration in May 1997 and the Mate in March 2001. This indicates, among other things that they had received a copy of 'Instructions to Masters' and had read and understood them.
- 2.8.2 Contained within the 'Navigation' section of the Instructions to Masters under part (h) is the following: -

*'Ensure that the vessel is placed on hand steering when navigating in narrow channels or close to other vessels or any hazard to navigation'.*

This is the only reference to any procedures for the safe navigation of hazardous areas such as French Pass. There are no set company instructions documented for the ready reference of the Skipper or watchkeeper. There is in fact no requirement documented for the Skipper to be present in the wheelhouse when transiting French Pass.

- 2.8.3 On board the vessel was a folder containing various Maritime Safety Authority Boat Notices. This did not have **Boat Notice 09/2000 Caution when attempting to transit French Pass:**

*'Following a number of recent groundings in French Pass the Maritime Safety Authority draws the attention of mariners to the following general directions from the New Zealand Pilot (N.P. 51).*

*With local knowledge and care, vessels can navigate French Pass at slack water, or with the tidal stream. Passage against the stream is very dangerous as not only does a vessel sometimes fail to answer her rudder owing to the stream on the bow, but there is the possibility of meeting another vessel coming in the opposite direction and they may not see each other in time to avoid collision. A vessel meeting a contrary stream should therefore anchor to await the turn of the stream, or proceed N around Stephens Island or through Stephens Island passage.*

*When proceeding ENE through the pass care should be taken to prevent a vessel being swung round on to Collinet Point by an eddy that sets towards that point.*

*Attention is also drawn to the Caution contained on charts NZ615, NZ6151 and NZ6152 which states:*

*Te Aumiti (French Pass) Radio Reporting Point*

*All vessels intending to transit Te Aumiti (French Pass) are to give warning to "All Ships", ten minutes before reaching the narrows, on VHF Channels 16 and 65.'*



# Contributing Factors

*N.B. These are not listed in order of importance.*

- 3.1 The vessel had experienced steering problems on two previous trips. These problems were confined to use of the autopilot and had been repaired and the steering equipment tested and found to be fully operational. Prior to the transit of French Pass on the particular voyage, the steering equipment was operating satisfactorily. During the transit the vessel suffered steering failure when the Skipper applied port helm in manual steering mode.

## Cause

### Human Factor

<input type="checkbox"/> Failure to comply with regulations	<input type="checkbox"/> Drugs & Alcohol	<input type="checkbox"/> Overloading
<input type="checkbox"/> Failure to obtain ships position or course	<input type="checkbox"/> Fatigue	<input type="checkbox"/> Physiological
<input type="checkbox"/> Improper watchkeeping or lookout	<input type="checkbox"/> Lack of knowledge	<input type="checkbox"/> Ship Handling
<input type="checkbox"/> Misconduct/Negligence	<input type="checkbox"/> Error of judgement	<input type="checkbox"/> Other . . .

### Environmental Factor

<input type="checkbox"/> Adverse weather	<input type="checkbox"/> Debris	<input type="checkbox"/> Ice	<input type="checkbox"/> Navigation hazard
<input type="checkbox"/> Adverse current	<input type="checkbox"/> Submerged object	<input type="checkbox"/> Lightning	<input type="checkbox"/> Other . . .

### Technical Factor

<input type="checkbox"/> Structural failure	<input type="checkbox"/> Wear & tear	<input checked="" type="checkbox"/> Steering failure
<input type="checkbox"/> Mechanical failure	<input type="checkbox"/> Improper welding	<input type="checkbox"/> Inadequate firefighting/lifesaving
<input type="checkbox"/> Electrical failure	<input type="checkbox"/> Inadequate maintenance	<input type="checkbox"/> Insufficient fuel
<input type="checkbox"/> Corrosion	<input type="checkbox"/> Inadequate stability	<input type="checkbox"/> Other . . .



- 4.1 While operating in manual mode the steering failed, due to an unknown reason, which caused the vessel to swing to starboard. Due to the restricted nature of French Pass, the Skipper was unable to correct the swing before grounding.

# Opinions & Recommendations

## 5.1 Opinions

- 5.1.1 A number of electronics technicians have inspected and made repairs to the steering systems on *San Tongariro*. The complete system has now been thoroughly checked and any suspect joints or replaceable items have been attended to.
- 5.1.2 Since the corrupted flux gate compass feed line has been removed and replaced, the system has operated as designed.

## 5.2 Recommendations

- 5.2.1 That Sanford Limited re-issue 'Instructions to Masters' to all vessels capable of transiting French Pass. These are to include, but not be limited to, clear instructions for the use of: - the second steering pump, Masters to be in the wheelhouse, complete check of manual helm, gear box or VPP checks before transit, tidal stream within power and manoeuvrability parameters of vessel.
- 5.2.2 That Sanford Limited ensures that a complete set of Boat Notices is held on all of their vessels.



# Appendix 1

