



Class A Accident Report

Clan MacLeod

Machinery Failure

At the Port of Greymouth on 29 June
2004

KEEPING YOUR SEA SAFE FOR LIFE



Maritime Safety

MARITIME SAFETY AUTHORITY OF NEW ZEALAND
Kia Maanu Kia Ora



REPORT NO: 04 3502

VESSEL NAME: CLAN MACLEOD

Ship Type: Commercial Fishing

Certified Operating Limit: Unlimited

Port of Registry: Dunedin

Flag: New Zealand

MSA No.: 129860

Built: 1983

Construction Material: Steel

Length Overall (m): 29.80

Maximum Breadth (m): 5.00

Gross Tonnage: 62.00

Net Tonnage: 18.00

Registered Owner: Alan MacLeod

SSM Company: Lloyd's Register of Shipping

Accident Investigator: Zoe Brangwin

KEY EVENTS

- 1.1 At about 1000 hours, New Zealand Daylight Time (NZDT) 29 June 2004, the fishing vessel *Clan MacLeod* was alongside the Talleys ice wharf, port side to, at Greymouth. There were three crewmembers onboard; a Master and two Deckhands.
- 1.2 The Master was in the process of turning the vessel at the berth in order to fill the outboard hold with ice.
- 1.3 The Master put the gear lever to idle speed for six seconds and then attempted to return the gear level to neutral. However, the gearbox did not respond and the vessel continued moving ahead at slow speed. The wheel was hard to port.
- 1.4 The forward spring line arrested some of the forward motion before it finally parted. The vessel continued ahead in idle, slewing tightly to port around the end of the berth (*See Appendix 1 - Diagram of Accident*).
- 1.5 The bow of *Clan MacLeod* then struck *William Steer* on her port bow. This caused *William Steer* to surge parting some of her mooring lines and then colliding with a vessel berthed astern.
- 1.6 The Master stopped the vessel by shutting down the main engine from the engine room.
- 1.7 *Clan MacLeod* was manoeuvred back to the berth using lines and capstan.
- 1.8 After the vessel was secured, the Master tried the controls on two different occasions up to 15 times and found each time that the Nabco air control would not disengage from forward to neutral. It would only engage from neutral to reverse or neutral to ahead.

KEY CONDITIONS

- 2.1 *Clan MacLeod* is a fishing vessel of steel construction. The vessel was built in Japan in 1983 as a Naval Patrol Craft and subsequently converted to a fishing vessel when it was brought by Highland Fishing Limited. She has a length overall of 29.8 metres, a breadth of 5 metres and gross tonnage of 62. A single 750 kW Yanmar diesel engine powers the vessel.
- 2.2 Highlander Fishing Limited owns *Clan MacLeod*. The vessel was purchased in 2002.
- 2.3 The vessel has a valid Safe Ship Management (SSM) Certificate with Lloyds. The vessel was fit to ply unlimited limits. A Maritime Safety Inspector (MSI) last inspected the vessel in May 2004.
- 2.4 The Master was also the owner of the vessel. He held a Mate Deep Sea Fishing Boat (MDSFB) Certificate obtained in 1973. He had over 30 years experience of operating vessels.
- 2.5 There had been no previous mechanical problems with the vessel during the 2½ year period of ownership.
- 2.6 There was no one onboard *William Steer* at the time of the accident.
- 2.7 The impact caused damage to the rubbing strakes, low bulwarks and the handrail of *William Steer* over a distance of 1.2 to 1.6 metres.
- 2.8 Damage to *Clan MacLeod* was restricted to a minor indentation of the bow and scratching of paint.
- 2.9 There was no damage to the tender berthed outboard of *William Steer*. No damage was sustained by the vessel moored astern of *William Steer*.
- 2.10 Emergency shut down control buttons were situated on the wheelhouse dashboard of *Clan MacLeod*, (for the main engine and auxiliary engines). There was also a gauge on the dashboard to indicate reserve air pressure. The vessel had a secondary alarm system. The fuel shut offs were situated on the main and upper decks.
- 2.11 The Skipper chose not to shutdown the engine as he was hoping he could put the vessel in reverse from the engine room and therefore maintain manoeuvrability.

- 2.12 There was an oil and moisture trap in the control air system. A glass bowl type model was visible and had been maintained in the past. There was also a secondary trap within the system. Whilst the Maritime Safety Inspector was aboard, both systems were pulled apart to check for any signs of moisture. None was found.
- 2.13 The valve piston was assisted by a stainless steel spring, which, although appearing to be satisfactory, was still replaced as a precautionary measure. It was also intended to replace the rubber seal, at the end of the piston, if one can be obtained.
- 2.14 The vessel did not have a documented maintenance schedule for the moisture separator. This will be included in future maintenance schedules.
- 2.15 Inspection of the Nabco air controls revealed a sticky air valve preventing it from returning to its neutral position.
- 2.16 After cleaning the old lubricant off the valves and reinstalling the controls they were returned to fully operational status.

Subsequent to the Investigation

- 2.17 A few months after the accident the Owner of *Clan MacLeod* reported to the MSA that the problem with the reverse control was different from the original reported explanation. After more problems with the control lever and further investigation the problem turned out to be located in the air ram mounted on the gearbox, which puts the gear box in and out of gear via the control lever.
- 2.18 The Owner replaced two 40x30x6 seals. One of the seals had allowed air to pass and vent back through the wheelhouse control giving the impression that was the problem point.
- 2.19 The owner also stated that, “the air ram interior was in good condition, free of water and containing only a little oil. The seals looked ok but the system works at 5 bar (70 psi) so they obviously need to be perfect.”
- 2.20 The Owner has had no further problems with the system.
- 2.21 The Owner contacted the NABCO agent regarding the problem, the agent stated that it was a fairly common and misleading problem.

CONTRIBUTING FACTORS

- 3.1 The lever failure was initially thought to have been caused by a sticky Nabco control air valve due to a build up of lubrication. However, after further problems with the control lever and further investigation the problem turned out to be located in the air ram mounted on the gearbox, which puts the gear box in and out of gear via the control lever.
- 3.2 The Owner replaced two 40x30x6 seals. One of the seals had allowed air to pass and vent back through the wheelhouse control giving the impression that was the problem point.

CAUSE

Human Factor

- | | | |
|---|--|--|
| <input type="checkbox"/> Failure to comply with regulations | <input type="checkbox"/> Drugs and Alcohol | <input type="checkbox"/> Overloading |
| <input type="checkbox"/> Failure to obtain ships position or course | <input type="checkbox"/> Fatigue | <input type="checkbox"/> Misconduct/Negligence |
| <input type="checkbox"/> Improper watchkeeping or lookout | <input type="checkbox"/> Physiological | <input type="checkbox"/> Error of Judgement |
| <input type="checkbox"/> Lack of knowledge | <input type="checkbox"/> Ship Handling | <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 and tear | <input type="checkbox"/> Steering failure |
| <input checked="" 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 The problem was traced to the air ram mounted on the gearbox, which puts the gearbox in and out of gear via the control lever.

OPINIONS & RECOMMENDATIONS

- 5.1 It is recommended that this report be disseminated to all Safe Ship Management companies to heighten awareness of this potential problem with regard to other vessels that have similar air control systems.