

The principal purpose of the Transport Accident Investigation Commission shall be to determine the circumstances and causes of accidents and incidents, with a view to avoiding similar occurrences in the future, rather than to ascribe blame to any person.



OCEAN PIPELINE RIB WAS NOT FIT FOR PURPOSE

Two men returning to Lyttelton on October 28, 2008, after working on an ocean outfall project died when the boat they were on, the 5.8m rigid inflatable boat *Mugwop* “feasibly suffered a total failure of its inflatable pontoons”, says the Transport Accident Investigation Commission’s report.

The body of dredge operator was found the next day, while that of engineer-deckhand, was not recovered until 15 days later. Both were wearing lifejackets. Neither man was qualified to drive her, nor had they been trained to operate a RIB in heavy seas. The *Mugwop* was never found.

The *Mugwop* would normally have been lifted on board the 53m dredge *Machiavelli* for the voyage, but 1-2m high seas made it too risky.

The report on the drowning identified failures of the safe ship management system. It said Survey Nelson should not have issued the *Mugwop* with a fit for purpose document, as she did not comply with all maritime rules.

Her owner, Heron Construction, began the SSM process on June 11, 2008. On October 14, the Survey Nelson surveyor signed a fit-for-purpose document stating the *Mugwop* could operate within five miles of the coast and carry up to six people.

The TAIC said the *Mugwop* should not have been issued with the document because she did not comply with maritime rules regarding her stability, subdivision of the inflatable pontoons and having a water deflector forward. She also lacked a shelter, as required under rule part 40C.16.

The *Mugwop* was not completely surveyed by the safe ship management company on the basis that it was an existing standard production boat. But for this to have been allowed, a similar prototype boat had to undergo an assessment. There was no evidence that this had ever been done, the Commission said.

“If it had been done properly, it would have found the buoyancy pontoons did not have the required subdivision, the tag at the bow was not secured to the hull and the boat was not fitted with the required spray cover for 15 percent of her length.

“The SSM company should have picked up these issues and the *Mugwop* not permitted to operate until they had been rectified.”

Survey Nelson determined the *Mugwop* did not require a full survey to bring her into safe ship management, as she was a series production boat with a record of at least five years of safe operations.

The *Mugwop*, a production 5.8XL Sportline model built by



The *Mugwop*

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Naiad Inflatables (NZ) Limited in 1996, was one of seven vessels involved in Christchurch Ocean outfall project in Pegasus Bay, north of Banks Peninsula, on October 28.

The largest craft was the backhoe dredge *Machiavelli*, which was being used to dig a trench for an outfall pipe.

Earlier on October 28, the *Mugwop* had pitched into a wave and caused a supervisor to hit his face on a metal rail above the steering console. The boat diverted to Sumner so he could be transferred ashore for medical treatment.

The night shift crew arrived at the *Machiavelli* at about 1630 and decided the weather was too rough to lift the *Mugwop* on board, so they tied the boat to the stern.

By 1730 the wind had increased to 55 knots and the decision was made to tow the dredge to the safety of Lyttelton Harbour. The crew noted the dredge’s wash could damage the *Mugwop*, so they decided the dredge operator and engineer-deckhand would drive her to Lyttelton.

At about 1909, the dredge supervisor telephoned the surveyor to inform him the *Mugwop* was en route. The surveyor arrived in Lyttelton about 10 minutes later but could not see the *Mugwop* and began searching the wharves around the port.

He boarded the 8.5m survey vessel *White Pointer* to search the outer harbour, saw the dredge being towed in and headed towards her. Sumner Coastguard was alerted at 2015 and numerous vessels were involved in the search, plus a helicopter and two fixed-wing aircraft.

An autopsy of dredge operator concluded that he died of immersion and drowning. Tests also showed a positive result for cannabis of 1.4 micrograms per litre. This indicated ►

he had recently used cannabis. "It was not possible ... to determine what effect it may have had on his performance," the autopsy report said. Cannabis is known to accelerate the onset of hypothermia.

The *Mugwop* was constructed of 3mm aluminium with a single inflatable pontoon along each side, rather than the usual two as required under the maritime rules. She had no bilge pump and water drained out through two "duckbills" fitted to the transom.

She had previously suffered five problems during the project.

The Commission said that whatever happened to the *Mugwop*, "the onset appears to have been rapid and the result catastrophic". One crewmember attempted to make a mobile phone call but was unsuccessful. The EPIRB was not activated and the VHF radio was not used, although both were in easy reach of the driver. The RIB should have been able to handle the conditions if in good condition and driven with care.

At the time of the accident there were 4 defects that made the *Mugwop* more vulnerable to catastrophic failure of its inflatable pontoons and sinking:

- the hull was leaking and almost certainly contained a significant quantity of water in its void space
- the outboard motor could not be trimmed to achieve a bow-high trim
- the inflatable pontoons did not have the required subdivision in the inner tubes
- the securing tag for the pontoons at the bow was not fastened to the hull.

She was likely travelling in the same direction as the following rough sea with a bow-down trim, and possibly travelling faster than the waves at the time.

Similar circumstances have caused inflatable pontoons to fail at the bow on at least three other RIBs in New Zealand, the Commission said.

A "grab bag" of survival equipment, an EPIRB, flares or a waterproofed portable VHF radio could all have helped save the two men's lives. The temperature of the sea meant Campbell could have survived for about six hours after the accident.

The inquiry picked up a number of defects and non-compliances with Maritime Rules, some of which should have been picked up by the attending surveyor before an application for safe ship management was made and others that were incumbent on the owner to rectify.

The inquiry also found that the outfall marine operation did not have sufficient maritime knowledge at the appropriate level of management to understand the fundamental principles of safe ship management and what it was supposed to achieve, and how to apply those principles to an operation that spanned 3 operators and several vessels, each with its own safety management system.

Following the accident, Maritime NZ audited all the vessels involved in the ocean outfall project, for which McConnell Dowell was the principal contractor. One vessel was identified as being unsuitable to be used as a crew transfer vessel and another was stopped from being used as a towing vessel. McConnell Douglas also put in place numerous safety initiatives.

The commission recommended Maritime NZ issue information on small boat driving techniques in rough seas, particularly to skippers of RIBs.

It also repeated recommendations published in earlier accident reports that the SSM system for New Zealand domestic watercraft be reviewed, and the need for legislation to set limits for and test alcohol "and other performance-impairing substances" on all vessels on the water.



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