



ARATAKI MEETS RISING DEMAND FOR **PILOT SERVICES**

BY KEITH INGRAM, IMAGES BY TARA HOYLE

The Port of Tauranga has gone through some very positive years of growth as a principal access port for the central North Island and, dare we say it, Auckland. In fact, as the days roll by, these two ports are beginning to overlap and their freight movements are being seen by many freighters to merge as one.

This is especially so when we saw the first six of KiwiRail's 20 new DL class locomotive engines being unloaded at the Port of Tauranga last month. China's Dalian Locomotive and Rolling Stock Company built the \$80 million order to KiwiRail specifications. They are expected to be in service before Christmas on the Auckland-Hamilton-Tauranga "golden triangle" freight route and also on the Bay of Plenty forestry route.

The Port of Tauranga has an annual cargo throughput of more than 13 million tonnes. It is claimed to be New Zealand's largest and most efficient port, with direct links to international markets in Australia, Asia, the Middle East, the Pacific Islands, South America, the United States and Europe.

The port is now preparing for the bigger ships with their larger cargo volumes expected in New Zealand waters in the next few years. Larger ships will bring with them lower operating costs and greater fuel efficiency, enhancing the competitiveness of New Zealand exporters and lowering freight costs for importers. Preparations for larger ships include ensuring harbour access and

on-wharf equipment are able to handle vessels around 50 percent larger than those berthing today.

The port is applying for a resource consent to widen and deepen Tauranga Harbour's shipping channels. Dredging will enable it to welcome vessels of up to 7000teu (20ft equivalent units) and provide 14.5m draught at all tides.

The port enjoys excellent rail connections, with significant additional route capacity already available on the rail line between the container terminal, Hamilton and the inland port, MetroPort, in Auckland. MetroPort, and the adjacent freight distribution hub at Tapper Transport (bought by Port of Tauranga in April), is in the middle of the commercial zone which produces and receives 80 percent of Auckland's imports and exports.

Meanwhile, the port continues to invest in on-wharf equipment. It installed a new Liebherr gantry crane in July last year, increasing its fleet of cranes to five. The new crane can lift two containers at a time and is large enough to service ships up to 18 containers wide.

The new pilot launch *Arataki* is yet another example of the port's investment in new technology. It has been served well by its present pilot launch, the *Tauranga II*, built in Wanganui in 1985. Experience with this launch put them in a good position to determine a new launch for the future, with a small team lead by the port marine manager and including a launch master, pilot



A well laid out and practical helmstation



and the launch maintenance engineer. This team had the task of determining the requirements of a new vessel and keeping an open mind on the specific design.

Expressions of interest were requested from interested parties, both within New Zealand and overseas, and considered the various designs submitted. Through this process the team decided to go for a planing mono-hull.

From this list, the winning tender was the Wanganui company Q-West, and a thorough specification and contract documents were drawn after discussions with the builder and designer.

A number of features are required for any pilot boat design as it has to perform the unique task of deliberately colliding with a moving ship to allow the transfer of the pilot to and from the larger ship in various sea states and wind conditions. Conversely, the pilot boat must be fast enough to catch a ship in order to evacuate the pilot as she leaves port.

This presents a number of limitations on the design, such as the size of the cabinhouse, as the vessel must be able to roll to 30 degrees without the cabin striking the ship. There cannot be outboard safety rails for the same reason and the bow rails need to be designed to provide maximum visibility to the coxswain during an approach.

Safety rails therefore are inboard around the cabin with the deck crew and pilots clipping a harness onto a rolling car and track system. Good all-around visibility is also necessary from the cabin.

The plan form of the deck is tapered toward the stern to allow the boat to turn away from the ship without striking the rear quarter during the manoeuvre. In addition, the boat needs to deal with the specific sea conditions experienced out of Tauranga, including large, steep seas, so seakeeping ability was given high priority when developing the hull form. The hull features a warped bottom with a very fine, deep entry.

The result is a very soft ride to allow the pilot boat to ►

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The pilothouse can seat six for action

maintain a high average speed even in rough seas. The aft sections are reasonably flat and allow her to achieve respectable top end and cruising speeds and the keel maintains directional control in a following sea. This style of hull is well-proven in various parts of the world, including the lobster boat fleet which operates off Western Australia.

In addition, the design had to cater for non-pilot duties such as search and rescue and recovery. This means access to the water and a recovery basket for picking people from the water, and an extended operational range well beyond what is required for the reasonably short runs from the dock near the entrance to Tauranga Harbour.

“Regular visits to the yard over the building period allowed the port to have confidence in the building programme without compromising the ability of Q-West to get on with the job required,” said port operations manager Nigel Drake. “The resulting standard of build and detail is a credit to all the parties involved.”

The *Arataki*'s 16.3m length and service speed of 25 knots provides the flexibility of working in the often rough seas off the exposed Bay of Plenty coast. Strong tidal influences experienced in the harbour entrance required a boat capable of meeting the very difficult wind-over-tide conditions which often occur. The *Arataki* is expected to excel in these conditions in the course of her everyday work around the port.

As the *Arataki* will be the first contact with the port for ships' officers and also represents its corporate image to the public, the port placed considerable emphasis on her external colour scheme, which can only be described as striking.

After blasting her aluminium hull above the waterline with abrasive, the contractor, Altex Coatings Limited, applied an Altex epoxy anti-corrosive system. This was followed by the



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finishing coats of E-Line 379 epoxy paint in a striking “lemon chrome” yellow, which make her stand out vividly against a backdrop of other craft or in restricted visibility.

The aluminium below the waterline was also blasted with abrasive, then coated using the full Zeca copper-based antifouling system. Special contrasting pilot boat decals add the finishing touches to this handsome vessel.

She features wide decks, safety rails and travellers around the fore deck and rescue arrangements at the stern for retrieving a person from the water. The wheelhouse affords excellent visibility for all on board and incorporates a state-of-the-art Garmin electronics system supplied by Bay Marine Electronics.

The choice of a full Garmin navigation and communication package for this vessel is significant. Typically, we would expect Furuno or Simrad solutions to be the usual choice. However, when the port asked for ideas on a system for the new vessel, Bay Marine Electronics were keen to let the team know where Garmin had moved to in the market in terms of their larger multi-function systems.

As the *Arataki* would have a number of skippers operating her, it was important for the system to be easy to use so they could come up to speed quickly without having to dive into the operating manuals. The Garmin’s intuitive and easy touch screen interface immediately appealed.

After investigating all the other manufacturer’s solutions, the port decided to go with a full Garmin system consisting of three GPSMAP7015 multi-function displays, the latest release in their top display series, featuring dual processors for zero map redraw. Networked into these displays are a Garmin GMR24HD 48nm digital radar scanner, digital sounder module, AIS transponder and two VHF radios. The package also includes a low-power ▶



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The head



Her hull lines ensure spray is lifted away

DC computer developed by Bay Marine Electronics. There is no need for a separate computer screen, as the PC is interfaced to the Garmin so any display can act as a monitor. All the Garmin components are covered by a two-year replacement warranty.

The steering system selected by Q-West for the *Arataki* is the well-proven C-Drive electric steering solution designed by TMQ Electronics and supplied by Innovations In Motion.

Q-West frequently specifies this system as it offers real advantages for multi-steering stations and multi-hull designs. There is no need for bulky hydraulics at each steering station, just an electric steering control, either a wheel helm or a jog lever.

In multi-hull systems the dual rams and rudders are always in alignment, due to the control of the dual-valve constant running

pump by the TMQ electric C-Drive control unit, which is the heart of the TMQ steering system.

For the *Arataki*, a main wheel helm with aft deck jog as a second steering option was provided. Each station is activated by a select button. Fast steering response is especially important for this vessel. Her skipper needs to be able to steer quickly for close manoeuvres around large container vessels in rough conditions. The TMQ's hydraulic system requires only one turn from lock to lock at the helm.

There is seating in the deckhouse for six in hydraulically dampened KAB514C seats complete with arm and headrests. Finished in attractive leather trim, these ergonomically designed seats provide high levels of comfort across a range of applications



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Once a person is secured in the seat with a four-point safety harness and the mechanical suspension adjusted to suit their weight, they can enjoy a comfortable ride, even in rough seas. Two more people can be accommodated on a bench seat if required.

The interior is finished in serviceable soft grey and charcoal tones using paint and soft fabrics.


A stairway leads to toilets under the deckhouse sole and the full headroom engine room.

Perhaps one of the best features of her design is the engine room space and the large for'ard deck hatch access. The *Arataki* will be very busy running on average 17 trips to ships with a pilot each day, so easy maintenance was paramount. The engine room is generous in size and the easy access will encourage regular maintenance. Should an engine require removal it can be craned directly out of the hatch above.

The *Arataki's* twin Scania DI1643M marine diesels drive through two Twin Disc MGX gearboxes onto a Pacific Driveline conventional drive chain to two Henley 29 x 38.5 five-bladed Tiger propellers to give her a service speed of 25 knots.

Up on the aft deck, a small, general-purpose davit may also be deployed to lift people from the water in a helicopter rescue strop or a body basket. If this fails, a lower, fold-down rescue platform may also be used for recoveries or to give the crew access to small craft or when recovering objects from the water. There are both manual and remote-release lifebuoys at the stern for emergencies if a pilot falls into the water during a transfer.

The *Arataki* is configured as a day working pilot launch and has no overnight facilities or galley, so the crew will have to get by with packed lunches. But she is capable of venturing further afield when the need arises for search and rescue operations.

Otherwise, the *Arataki's* trips from her base to the pilot station are relatively short. Her added seakeeping ability gives the Port of Tauranga pilot service much wider operating parameters than in the past. 

SPECIFICATIONS

Type of vessel	pilot boat
Hull construction	aluminium
Length overall	16.5m
Beam	5.4m
Draft	1.1m
Displacement	25.25 tonnes
Main engines	2 x Scania DI 1643
Power	2 x 550kW
Gearboxes	2 x Twin Disc
Fuel	3000 litres
Fresh water	100 litres
Maximum speed	30 knots
Cruising speed	26 knots
Designer	Bakewell-White Yacht Design
Builder	Q-West Boat Builders

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