Heavy seas no barrier
TO THE LAW

The *Lady Elizabeth IV* continues Wellington's strong maritime police tradition. She combines search and rescue, law enforcement and a multi-agency role in one impressive package.

Towing the 70 tonne fishing boat *Patriach* from Karori Light into Wellington Harbour is not easy for an 18.5m boat at the best of times, and is even more difficult in a heavy swell.

But Wellington's new police boat, the *Lady Elizabeth IV*, showed she is fit for purpose by towing her safely back to port with few problems, even though the *Patriach* weighed nearly twice as much.

"That was the first test of our towing capability," said Sergeant Dave Houston of the Wellington Police Maritime Unit. "We were nervous how she'd perform with such a heavy tow first up, (but) we took things very slowly and had additional crew on board."

Another benefit of the new boat was the crew's ability to launch her 4.3m RHIB rescue tender from the hydraulic cradle to ferry clean fuel to the *Patriach* "to see if that might solve the problem," said Sergeant Houston.

In the two months since she entered service, the *Lady Elizabeth IV* has carried out 18 search and rescue assignments, ranging from flare sightings to searching for a missing swimmer and investigating missing and sinking boats.

The crew had gone through a steep learning curve, developing new standard operating procedures for towing, boarding other craft, winching and crew safety, said Sergeant Houston. "Many call-outs have been at night, which has tested the crew on the various electronic systems on board." The thermal imaging system had been a vital aid.

The name *Lady Elizabeth* has a long and proud police maritime tradition in the Wellington region. The public readily identifies with the name, which dates back to 1941, when the Police Launch Services was born and the government requisitioned the 38ft pleasure launch *Lady Elizabeth*.

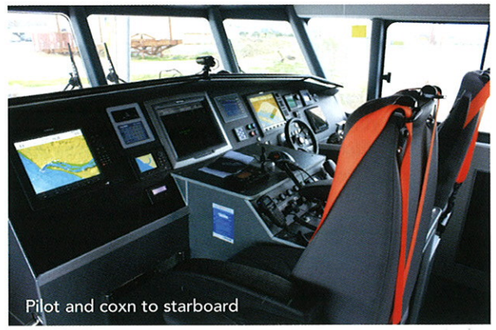
The fourth and latest, *Lady Elizabeth IV*, entered service in August. She reflects the changing roles of the Police Maritime Units in Wellington and Auckland, as she is aligned with the government's desire to have multi-agency vessels equipped and manned for close-to-shore patrolling.

"She's a very different boat (from the *Lady Elizabeth III*) to operate. She's stable, fast and handles well," he said.

According to Sergeant Houston, the people of Wellington have quickly accepted the new 18.5m foil-assisted patrol boat. "Our arrival in Wellington was supposed to be low key, but word got out and we had a small flotilla accompanying us up the harbour."

A few days later, the police crew were checking a pleasure boat to make sure her crew's catch was within quota limits when another pleasure boat pulled up on her other side and asked the crew to check their catch, purely so they could get a close-up view of the new boat.


Operational command centre


Pilot and coxn to starboard

Built in Wanganui by Q-West Boat Builders Ltd, the *Lady Elizabeth IV* is based on Auckland's successful *Deodar III,* with some modifications for local conditions to cope with heavy weather seakeeping and towing.

The support from Q-West had been "fantastic", said Sergeant Houston. "They fully understand our needs. Anything we discover that needs looking at they respond mmediately and it becomes quickly sorted."

The $3.5 million police launch, funded from the national police budget, is built to full coastal survey. Her operating area encompasses the Wairarapa coast up to Castlepoint; Kaikoura and the Marlborough Sounds; Tasman Bay and the western coast up to Whanganui. Most tasks, however, are within Wellington Harbour and Cook Strait.

Her two hulls are plated with 6mm Sealium marine alloy, a lightweight plating designed for high-speed ferries that is said to have about 15 percent more welded strength than conventional 5083 marine alloy plating. Her topsides and deck are built of 4mm Sealium plate.

One minor change from the *Deodar III* has been dispensing with the for'ard-facing lower windows of the saloon. Facing heavy seas is part of her duties, so the risk of a window blowout when striking solid green water has been removed. Likewise, the side windows have a horizontal mullion through the centre to give added support against crashing beam seas.

Her 6.9m beam provides her with a huge saloon. The floor is fitted with tracks so ferry-style seating for up to six passengers and a table can be installed. A multi-purpose cabin to port, accessible from both the aft deck and the main cabin, can be used as ▶


Launching the RHIB


Accommodation and heads

extra accommodation or as a hospital bay. It will take a standard ambulance stretcher or become a small "brig", with holdfast points to restrain handcuffed prisoners.

Yes, they do cuff prisoners to anchor points between their legs at sea, for the safety of both the prisoner and the crew. One can imagine the damage a prisoner could do running amuck if allowed their freedom.

The interior incorporates Ayres composite panels that use an aluminium honeycomb core with a paint finish bonded to the outside. "It's ultra-light, strong, easy to maintain and can be bent to take a nice radius," says Colin Mitchell of Q-West.

The *Lady Elizabeth IV* is designed to patrol independently for up to seven days with a crew of eight. A full galley for'ard supplies sustenance during duty days or extended operations. This includes a four-burner stove and oven, a microwave, large refrigerators and a freezer.

Because the for'ard windows have been removed, the galley has additional stowage above and extra cupboards. One cupboard above the stove is a concealed lift-out rangehood for the cooker. A substantial handrail across the facing of the bench for added crew safety.

Short companionways on each side of the galley lead down into the hulls. On the portside for'ard is a head and vanity and aft is a two-berth cabin. Opposite to starboard is a shower and vanity for'ard and a duplicate two-berth cabin aft. Under each of the lower bunks is a small satellite airconditioning unit that services each cabin. A further two units service the saloon and master's cabin and the enclosed wheelhouse. The four cabins provide berths for up to nine personnel and there is also a day berth in the wheelhouse.

A watermaker produces about 57 litres of potable water an hour to supplement the 600 litre tanks to ensure there is sufficient water for extended deployments without carrying a lot of extra weight.

The *Lady Elizabeth IV* is powered by two 8V2000 MTU diesels developing 800kW each at 2100rpm. MTUs were chosen for their fuel efficiency and compliance with emission standards for at least the near future. They drive Hamilton Jet 403 units using the Blue Arrow electronic controls. The intercooled MTUs drain their fuel from 4700 litre underfloor tanks for'ard of the enginerooms. One 18.5kW Lombardini generator supplies 230 volts for the household and other appliances.

Following on from the extremely successful electronics package supplied previously to the *Deodar III*, Crystal Electronics Ltd of Auckland was again chosen to supply and integrate the electronics. The backbone of the systems is the integrated Simrad NSE network, conceived and designed in New Zealand.

The NSE's innovative technology includes a multi-function rotary knob screen control, digital radar processing, professional-standard Navionics charting and special software that allows the New Zealand Police to specify, control and display functions they could not have achieved elsewhere.

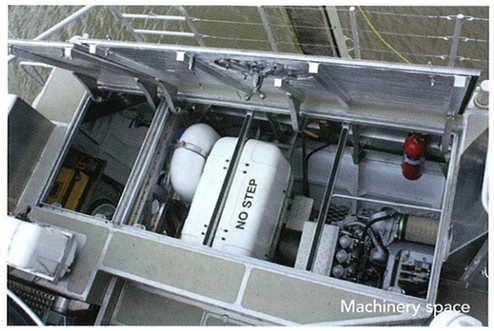
Information is displayed on four main 12in and 15in screens on the bridge and a single 12in screen on the flybridge. Navigation and charting can also be displayed on the saloon television screen for operational and training purposes.

The Simrad autopilot is fully interfaced into the Blue Arrow steering package.

Heading information is provided by a Furuno master GPS and satellite compass system that provides integrated navigation signals to the radar, WASSP sonar, Navionics charting system and autopilot. Weather information comes from an Airmar electronic sensor.

The Simrad AIS class B transponder has its own display


Main saloon and galley



Machinery space

and is also integrated into the NSE network. Two radars provide short and long-range radar ability, and two Simrad 50/200kHz sounders complete the navigation package. One of these has Simrad's structure-scan technology, which enables underwater objects and the seabed to be searched or profiled in detail.

Night vision is enhanced with the latest Carlisle & Finch combo Nightfinder. All these images, plus those from the Iris Marine closed-circuit television cameras, are integrated into the network for viewing on the screens.

Engine and vessel monitoring with displays on the bridge screens was paramount. Tank levels, bilge pumping, DC and AC power systems, navigation lights MTU engines, generators, watermaker and on-board pumps are all fully integrated. A complete alarm log allows planning of engine and general maintenance.

Marine computers developed by Crystal Electronics and Navico undertake special computing tasks. The Police also have their own dedicated laptops and equipment on board.

"We are still learning the finer details of the WASSP system but the electronics are easy to read and navigation is much simpler than on the Lady *Elizabeth III*," says Sergeant Houston. "Night rescues are much easier and the thermal imaging is a great help. Crew fatigue is also much lower."

The wheelhouse colour scheme is not the traditional police colours of red, white and blue. Rather, the colours have been kept to a minimal palette of charcoal grey, mid-grey and silver, accented with berry red. This ensures the least amount of glare from the sun and minimises light reflections off the instruments.

Stepping outside, the only exterior paint is the non-skid coated decks, while below the waterline her Intersleek fluoropolymer antifouling will help save fuel. The super-slippery coating prevents marine growth from taking hold, without using biocides.

The Oceanlift personnel recovery crane allows a small number of crew to rescue several people at one time.

The hydraulically operated cradle between the two hulls at the stern enables rapid launching and retrieval of the 4.3m Naiad RHIB rescue tender. This boat is powered by a 60hp four-stroke Yamaha outboard. The unique design of the cradle enables the tender to be launched and recovered with up to six people on board in reasonable seas and at speeds of up to 15 knots.

"The RHIB retrieval system is fantastic. It's quick and easy and we use it all the time," said Sergeant Houston.

Up for'ard, the two hulls have huge stowage space for deck equipment and gas bottles. An hydraulic reel capstan holds 30m and 150m of chain and 100m of warp for the 63kg Manson anchor.

The jets have a high-pressure outlet for fire-fighting. An hydraulic reel winch on the after deck has 200m of 20mm towing warp stowed ready for use. It's generally regarded to be safer to rescue and tow a boat and her occupants than take them off.

The *Lady Elizabeth IV*'s external flybridge is a secondary conning position for use during public events, searching for lost boaties or when the crew are listening for a plaintive cry in the night.

The main central towing post has been beefed up in keeping with the need to tow heavier vessels in Cook Strait. A substantial intermediate belting protects the hull when she lies in her berth against a wharf or when other vessels come alongside.

Safety on all vessels is paramount, and the *Lady Elizabeth IV* is no exception. On board is a complete set of lifejackets for the crew and personnel, the latest satellite EPIRB, a flares package and a liferaft.

"Policing doesn't stop at the high tide mark," says the head of the Wellington Police Maritime Unit, Senior Sergeant John Bryant. "Criminal offending takes place off the shore, and this new boat will give us the continued patrol and rescue resources we need."

Crew training is continuing, including deployment around Wellington and the top of the South Island in December to test her role as a multi-agency vessel.

The *Lady Elizabeth IV* is an impressive vessel. Every conceivable thought and consideration has gone into this patrol boat. She is a leap ahead of her forerunner. ■

specifications

Construction	Sealium alloy
Length	18.5m
Beam	6.9m
Draft	750mm
Engines	2 x 8V2000 MTU 810kW marine diesels
Drive	2 x Hamilton Jet 403 units with blue ARROW control system
Service speed	30 knots @ 65 percent power
Range	15 hours @ service speed
Genset	18.5kW Lombardini
Fuel	4700 litres
Water	600 litres
Watermaker	Enertec
Survey	Maritime Management Services
Designer	Teknicraft Design
Builder	Q-West Boatbuilders