

TACTICAL SUPPORT SHIP extends Protector capability

BY KEITH INGRAM

Three years ago, the government, in consultation with the Ministry of Defence, the New Zealand Defence Force and the Royal New Zealand Navy, made some key decisions that would affect our Navy's future and direction for the next 25 years at least.

On identifying New Zealand's maritime defence needs as an island nation, in protecting our seaways and 200-mile exclusive economic zone, they looked at our commitments to our international treaty alliance partners and our Pacific neighbours.

Modern warfare has dramatically shifted in the last decade. And while there is always a risk, New Zealand requirements to focus on providing ships that service the country's defence requirements near to home, while not forgetting the need to support other friendly international maritime forces.

Granted, New Zealand will always have to maintain a wartime support capability to assist our international partners in key conflict areas, wherever in the world they may be. But the people of New Zealand were demanding and expected protection closer to home, and so the Protector fleet of the New Zealand Defence Force evolved.

During this time our needs, risks and threats were identified as the New Zealand Defence Force searched for a range of new ships that would service New Zealand's requirements in the coming decades. Now affectionately known as the Protector fleet, these included:

- four 55m inshore patrol vessels
- two 85m offshore patrol vessels, and
- one 131m multi-role support ship.

They would join the existing fleet of our two ANZAC class frigates, *Te Mana* and *Te Kaha*, the tanker *Endeavour*, the diving support vessel *Manawanui* and the hydrographic ship *Resolution*.

A contract was finally let to Tenix Defence Systems Pty for some \$500 million. While the ships essentially will look like warships, they have in essence been built to civilian International Marine Organisation and Lloyds survey standards, in what can only be described as "the deal of the century", as other small nations review New Zealand's pro-active position in expanding our defence capabilities within such a tight budget.

On May 31, our Navy's new tactical sea lift ship, *HMNZS Canterbury*, was handed over to the New Zealand Ministry of Defence in the Australian port of Williamstown, Victoria, and then to the RNZN. *Canterbury* was built by the Merwede shipyard in Rotterdam, in the Netherlands, which acted as a sub-contractor to Tenix. She was launched on February 11, 2006 and undertook her initial sea trials that July in the North Sea.

A commercial crew with four Navy personnel on board delivered her as the *Nuship Canterbury* to the Tenix yard in Melbourne, Victoria on September 24, 2006. She was then fitted out internally



ABOVE: The 25mm rapid firing canon in action
BELOW: Bridge command station



with additional military equipment, including communications systems and a 25mm automatic cannon.

Interestingly enough, on her delivery voyage the *Canterbury* carried hull modules on her flight deck for the offshore patrol craft that were built under contract in the same yard.

One of the key components identified by the Defence Force as being a priority with the Protector fleet was an ability to participate in joint agency utilisation as they collectively work to secure the sovereign security and coastal safety of our island nation.

These joint agencies include the New Zealand Army, the Royal New Zealand Air Force, the New Zealand Police, the Ministry of Fisheries, the Department of Conservation and the Ministry for the Environment and Biosecurity. The delegated authority for coordinating this cooperative use has been given to the National Maritime Coordination Centre, which is located with the Joint Forces team in Trentham.

Canterbury's design is based on the lines of the modern ro-ro ferry *Ben-My-Chree* currently operating in the Irish Sea. The ship needed to be able to respond to cyclone relief in the Pacific, or transport military personnel and equipment of the New Zealand Army and Air Force safely to areas of conflict.

She needed to have summer month Southern Ocean ice capability during fisheries patrols in the deep south. As a tactical sea lift ship, she needed to be able to unload troops and vehicles while ►

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ABOVE: HMNZS *Canterbury* arriving in port
LEFT: The ship's landing craft are proving to be a versatile and valuable asset

such times when stopped and holding position at rest, or when lying at anchor in the remains of a reasonable ocean swell. But then our merchant seamen on the island trading run have been doing this for years without any major incidents and using far more antiquated equipment.

On either side of the ship are two large openings or boat ports that house the rigid hull inflatable rescue and workboats. While the concept of the stowage of these boats in this position is good, in reality they have been a problem in heavy weather, which the Defence Force is currently addressing

standing at anchor and run them ashore. Equally, she had to be able to load and unload heavy equipment and vehicles while alongside. Finally, she needed to be able to carry up to 262 fully equipped troops in comfort so that they arrived at their destination in peak physical and mental condition, ready for action.

To assist in this, *Canterbury* has been fitted with a stern ramp capable of unloading in stable conditions a 20 tonne military vehicle into the ship's two 59 tonne Landing Craft Medium (LCM), capable of carrying 50 tonnes at nine knots with a range of 250 miles.

A pair of "flippers" on the door guide the LCM into the docking station of the ramp, and the addition of stern lines to the stern of the barge holds it in position while loading.

The flight deck can be opened up with two large hatches to allow cargo and standard 20ft shipping containers to be lowered below. The cargo deck can carry up to 13 containers, and there is also an on-board elevator to bring pallet-sized loads of equipment up from below.

When conditions do not suit the use of the stern door, she had to be able to lift these vehicles using one of her two 60 tonne cranes that can reach over the flight deck to above the access hatch to the vehicle deck, lift these heavy loads, swing them over the side and lower them safely into the LCM tied alongside.

One can only imagine the tricky seamanship skills required at

with the shipbuilder after the recent loss of a \$150,000 waterjet-powered RHIB. (See *Skipper* issue 59, page 50.)

Following *Canterbury's* arrival at her home base in Devonport, the team at *Professional Skipper* was invited to review the ship. Having served part of my time at sea in the Grey Funnel Line, we were delighted to do so.

On approaching the jetty, the sheer size of *Canterbury* quickly became apparent. She is not just a little cargo ship, as she towered over *Endeavour* and the ANZAC frigate *Te Mana*.

Just looking at the ship's lines, her immense volume, the large cranes, the landing craft, a cannon for'ard and a huge flight deck, she was a ship of business. Any thoughts of the past disastrous conversion of an orange boat were long since gone.

Even the top of the bridge wing was over 30m above the sea. We climbed the accommodation ladder, and once the security formalities had been carried out, our guide, Ensign Matt McQuaid, led us aft to the huge flight deck.

The NH90 helicopter has been selected as the Defence Force's preferred medium utility helicopter to replace the Royal New Zealand Air Force's Iroquois. Up to four NH90s can be carried on board for deployment ashore in support of Army operations and disaster relief activities. She can also operate the SH-2G *Seasprite*, and the helicopter deck is able to handle a Chinook-size helicopter.

Our tour throughout the ship included the crew's accommodation and dining, the embarked troops' accommodation and dining hall, the large main vehicle deck, and the engine rooms and control rooms. We had the freedom of just about everywhere.

On stepping onto the bridge, not only is it high, it's wide and huge. While it contains all the ship's navigation, steaming and control areas, including communications radar and obstacle avoidance sonar, it also has the main features of the operational command area, including the automatic 25mm cannon gun control panel, where the gunner sits within metres of the helmsman and the captain.

The panel contains both visual cameras on the gun, and radar target contact and tracking displays, with full electronic control of the gun. We noted the need for a gunner's mate and loading number to be readily available in the ammunition supply room near the gun mount, hence the safety aspect of the CCTV. To supplement this rapid-firing cannon, the ship has two .50 calibre mounted machine-guns, plus an armoury of automatic small arms.

Conning of the ship may be controlled at the main conning position amidships or from each bridge wing, which protrudes nearly two metres clear of the beam of the ship.

A large glass panel cut into the deck floor of the wing assists in giving situational awareness to the officer in charge or the captain when berthing, as he or she has a clear view fore and aft of the ship's side, and can see down to the water some 30m below, eliminating any blind spot.

Given that the ship has been built essentially to civilian specifications, *Canterbury* has been fitted with a number of state-of-the-art safety and operational systems to reduce damage that might be caused by a major incident or hostility event on board.

Both the main engine rooms and the auxiliary engine rooms are designed as unmanned engine spaces, with total bridge control. There is an additional manned machinery control space down in the bowels of the ship that anyone wishing to enter the engine spaces must pass through at sea, leaving their ID name tag behind on the entry board to alert the control room of men below.

On-board closed-circuit televisions give the controllers additional visual information as well as the hundreds of electronic components that provide the status of valves, doors, fuel, water, electrical supplies and even what is happening in the sewage plant.

In addition to the two nine-cylinder Wartsila main propulsion engines, the *Canterbury* carries three Volvo Penta D49 1170kVA gensets. The Wartsila main engines are maintained at a warm 60 degrees on standby when not running so that they can be ready for sea and fired up at a moment's notice.

An on-board oil treatment plant in a separate compartment adjacent to the engine rooms processes all the diesel, aviation fuel and oil lubricants, even if newly acquired, to ensure that they are as clean as possible. *Canterbury* can receive fuel from our fleet tanker, *HMNZS Endeavour*, and supply smaller craft, such as the new patrol craft.

Both the main and the auxiliary engine rooms are fitted with carbon dioxide drenching systems, in addition to each of the engines and the three generators having their own, independent freshwater spray drenching systems. The freshwater fire systems may be activated independently or collectively.

Note the use of fresh water and not salt. Part of the requirement is to be able to get key machinery isolated, the fire put out and the engine room up and running again within a short time. The carbon dioxide drenching system when activated deadens the ship until the engine room fire is out and cooled down and made safe for re-entry when the engineers can restart and bring power back on line safely.

The safety features go further. The vehicle deck is fitted with a saltwater drench that can be supplied either independently or ►


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The machinery control room monitors all engineering equipment besides the main engines and gensets



Port bridge wing control station



An example of the troop's accommodation

collectively to the five different areas of the vehicle deck. There are additional flooding systems for the containers that may be packed with army munitions and explosives.

To cater for the large numbers of crew and transit passengers requires a large galley, and *Canterbury* effectively has two, adjacent to the large dining rooms, with enough equipment to be able to feed an army.

The ship's galley is fitted with a water mist fire suppression system over each of the deep fryers. Why water over fat and grillers, you might ask. The new, modern freshwater misting systems have been proven to be the most efficient form of eliminating air and cooling down a fat fire in the quickest possible time.

The other advantage is that once the fire is out and the temperature reduced below the flash point, the area can be cleaned up, and new oil poured into the fryers so the galley can operate again within a few hours, rather than losing this cooking ability for days. A carbon dioxide drenching system is fitted within each galley's exhaust ducts.

The flight deck is covered by two large foam monitors mounted on the rear of the boat deck above the hangar doors. They can be operated either automatically from the helicopter control room, above the hangar door, or manually, and are capable of reaching and smothering any part of the flight deck. Both hangars are fitted with foam drenchers.

Throughout the ship the majority of compartments, accommodation and crew spaces are fitted with automatic temperature-activated sprinklers.

We all know that stability is an issue on ships at sea, and the free surface effect of water from fire systems. It's an inherent risk and sadly, we

have lost ships that started with a fire, only to have the fire successfully put out but the ship to then sink, because the onboard free surface water affected her stability.

In order to combat the possible stability issue caused by large volumes of water being unloaded on a fire, *Canterbury* is fitted with large drains from all compartments and deck areas to allow any water to be removed quickly.

There are some 270 compartments on board, and new damage control methods and training have been developed. Because the core ship's company is only 53, everyone must be ready for an emergency.

The 250 troops and up to 35 Navy trainees and other agency personnel are essentially passengers who will be directed out of the way to muster stations. Wide staircases, such as would be found on a ferry, allow for easy movement of troops, especially when wearing their full kit.

Reliance on ship's damage control must come back to the trained core ship's company. To assist in this, a new two-man fire team method is being trialed on board.

The introduction of the new Elkhart fire hose nozzle allows one person to act as either a water wall or fire fighter with ease, as these new nozzles give a fine mist water wall and a jet of water independently or at the same time. This combined spray/jet nozzle means that two people may be able to extinguish a fire quickly without the need to employ an entire fire-fighting team.

This ship has a fully equipped sick bay, a ship's hospital and an operating theatre, which may be used in emergencies, or provide a medical and surgical relief centre for civilians when she attends cyclone relief emergencies. Plus she

has her own morgue, and hopefully the only dead marines it will see will be the ship's beer stock.

In case of the unmentionable and personnel are required to evacuate the ship at sea, the *Canterbury* is fitted with two marine evacuation systems located on the port and starboard sides of the No. 1 deck. When the system is activated, two-man slides and 100-person liferafts inflate on each side. At the same time, the six additional 50-man liferafts located on 03 deck some 20m above the waterline are deployed, and can be subsequently pulled alongside the rescue slides.

The ship has a total liferaft capacity of 500 people, and can take on board additional lifesaving equipment when she is required to evacuate large numbers of civilians during an emergency such as a cyclone, earthquake or a tsunami. In this situation the vehicle deck and hanger can become overflow shelters.

Because of the multi-role utilisation of the ship, she carries 10 flight crew and helicopter engineers supplied by the Royal New Zealand Air Force. Seven soldiers, all trained in terminal operations, are responsible for operating the cranes, forklifts, trucks and other vehicles on board, including securing cargo, and especially the safe lashing down of Army vehicles and equipment.

Clearly, even though *Canterbury* has been built to civilian lines, her back-up and damage control systems are up with the latest technology, which gives her crew the comforting edge of knowing that she is capable of acquitting herself well in any expected situation she is likely to operate in.

Over the coming months, Joint Forces will be working the ship up to her full operational efficiency, and after reviewing her, we can only conclude that the Navy has one of the finest tactical support ships capable of doing all the expected tasks expected of her as part of the New Zealand Protector fleet.



One of the Volvo gensets

SPECIFICATIONS

Length overall	131m
Beam	23.4m
Displacement	9000 tonnes
Speed	19 knots
Total ship's complement	360
Core ship's company	53
Flight personnel	10
Government agency staff	4
Army ship's staff	7
Trainees	35
Troops	250
Propulsion	2 x Wartsila diesel engines
Armament	25mm and two .50 calibre machine guns
Builder	Tenix Defence Pty Ltd

PROMOTIONAL FEATURE

NEW WEBSITE PROVIDES A VALUABLE RESOURCE

Maritime Management Services has launched its new website

www.maritimemanagement.co.nz

The site aims to provide a valuable information resource for marine operators in the commercial sector, with access to a diverse range of subjects, including commercial safety equipment requirements, master and crew responsibilities, and even the ability to update a safe ship management plan.

- As well as the home page, the site contains
- an information page with details of how to access Maritime Management Services' new client information pack, equipment guidelines and a membership agreement
- a corporate profile, with photographs of five of the principal staff behind MMS
- links to two industry partners
- a contact page that includes an order form for requesting an official ship's log book, number decals, marine labels, New Zealand charts and other material

- a page of frequently asked questions is also being set up.

"One of the most exciting features of the site is an invitation to sign up to our regular newsletter updates," says the chief executive officer, Margaret Wind. "The updates will keep you in touch with developments in the marine industry, surveyor tips and any amendments to Maritime New Zealand rules. The intention is not to clog your email inbox with more spam, but to keep you right up to date with any changes that could ultimately affect the way you conduct your business."

You can subscribe to this free service simply by clicking on the "Sign up now" button on the home page of the site. MMS Ltd is hoping to provide an effective communication resource with owners and skippers of commercial craft, whether used for transporting passengers, private charter, fishing or marine farming. The website is an important part of our ongoing service.