



SPIRIT RECEIVES A NEW LEASE OF LIFE

MARK BARRATT-BOYES

The 1960s saw a revival of interest in square-riggers, not as cargo ships or for professional maritime training but as a unique environment for youth development. The *Spirit of New Zealand*, launched in 1986, is a prime example.

Each year the 45.2m steel three-masted barquentine makes about 25 voyages, carrying 40 boys and girls aged between 15 and 18, plus special voyages for those who have a handicap.

Their excitement is palpable as they assemble alongside the ship, ready to begin the 10-day voyage, usually around the Hauraki Gulf but sometimes further afield to the Bay of Islands or south to the Bay of Plenty, around East Cape or the South Island.

Under the guidance of the captain and the permanent crew of 14, the trainees hoist and set the large and heavy sails, climb the ratlines and of course there are the renowned dawn swims.

Learning to sail the ship is a means to an end, not an end in itself, and the diverse challenges ensure they return home having learnt a great deal about themselves, along with resilience, confidence and leadership skills.

In between the youth voyages, the *Spirit of New Zealand* also carries out public sailings ranging in length from half a day to three-day weekends, making a total of about 340 days at sea.

She has had regular surveys and refits throughout her life, but last year the *Spirit* had the first stage of a life enhancement programme.

The 11-week refit, carried out at Ship Repair New Zealand's yard in Whangarei, began in late September by focussing on components below the waterline. The 14 items on the "to do" list included installing an improved rudder, a bowthruster, the shaft assembly and the stern tube oil system.

Her repower project started 2.5 years ago, with Tony Whiting from Whiting Power helping with the evaluation and the propulsion design.

Given that this was a tall ship, the team had to take into account lessons learnt from two groundings, where insufficient power had resulted in the ship beaching.

They considered all brands of engines and drives before deciding a Yanmar diesel and Hundested variable-pitch propeller were the most compatible fit.

On November 17 a Yanmar 6AYM-STE rated at 490kW at 1900rpm continuous was dropped into the ship through an opening in the crew's lounge. The Hundested CPG325.11:1 reduction gearbox is a combined gear and pitch control is a fully controllable pitch propulsion system fitted with a new Hundested VP9.5 1700mm diameter four-blade propeller.

The new propulsion system effectively triples the available thrust compared with the original 8L3 Gardner, and naval architect Captain Ted Ewbank had to redesign and strengthen the stern.



The wooden spars and top masts were fully restored



The feathered 1700mm Hundested propeller



The new heart transplant underway



The new exhaust system sneaks past the rudder post and steering gear

This completely new drive train aids in manoeuvring, and varying the pitch for motorsailing reduces the engine's fuel burn. Her cruising speed under power is now 10 to 10.5 knots, with a top speed of 12.8 knots, compared with seven knots, or four knots if the wind was on the bow, with the Gardner.

Engine services such as cooling water, air and fuel supply and the wet exhaust were extensively modified, and new generators, wiring and electrical systems installed. A sewerage plant was also fitted.

The *Spirit of New Zealand* appears very similar to when she was launched 25 years ago, but the hull has been waterblasted, sandblasted with wet sand and painted as part of her usual refit. A new type of antifouling anticipated to last for two years was also applied. The forward hatch surrounds have been rebuilt and her topsides sandblasted where required.

The spar and rigging and the hull also received close attention.

Her wooden top masts and spars were removed, repaired and varnished, and most of the metal fittings repaired or replaced. Her elegant bowsprit was also repaired, varnished and reinstalled with all its rigging components.

Below decks, Tradeline refitted the wheelhouse interior to accommodate the new engine instruments and adapted the trainee's chart table to make it easier for them to use. The aft, or great cabin, was also upgraded.

During her life the *Spirit* has not had an effective airconditioning system and as part of their support to youth training, Tony and Margaret Whiting, in association with Dometic Environmental Corp, donated a new Cruisair Turbo airconditioning system for the accommodation and saloon areas.



At sea again and loving it

The *Spirit of New Zealand* was back in the water in mid-December for sea trials in the Whangarei River estuary and the open sea.

Her first voyage after the refit, number 588, left Auckland on December 29.

The new Yanmar engine increases her safety margin on coastal passages and the refit ensure the *Spirit's* crew and trainees enjoy her for another 25 years or so. 