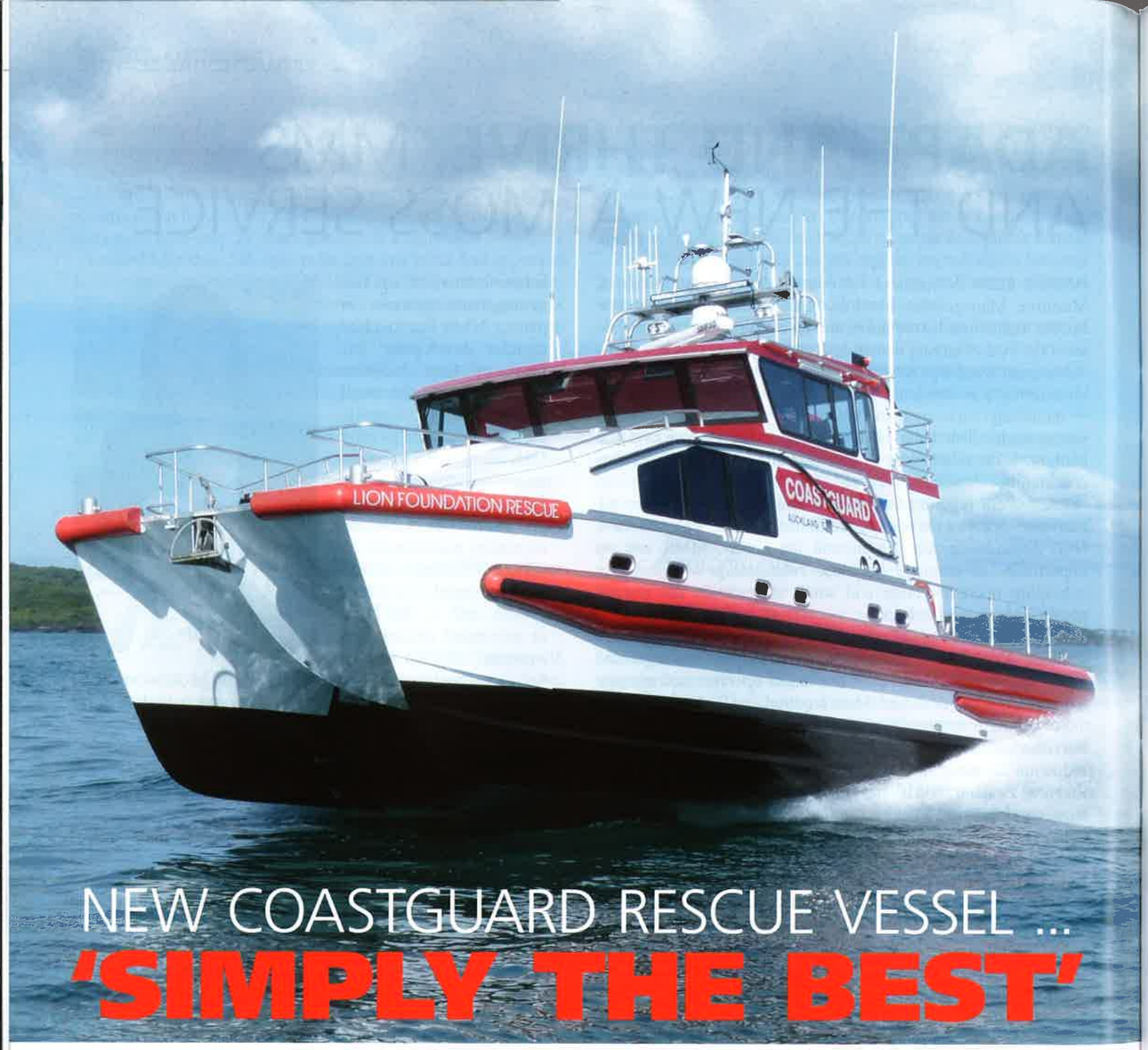


NEW COASTGUARD RESCUE VESSEL ... 'SIMPLY THE BEST'

BY KEITH INGRAM

The Royal New Zealand Coastguard Federation maintains a volunteer rescue and training infrastructure around the coast of New Zealand. Their mission: to ensure there is a ready-response marine emergency and rescue service for mariners in need.

The 70 coastguard units throughout the country remain independent volunteer groups supporting their local communities. That term 'volunteer' gets some folk hung up in out-of-date negative thinking – envisioning these guys as a bunch of well-meaning boaties, or worse still, likening them to 'Dad's Navy'. The truth is very different.

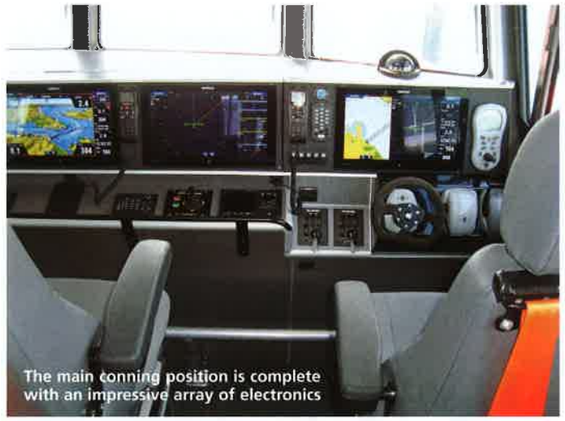
While there *might* have been an element of that in the past, I am happy to advise that in today's world – with the demands of providing a 24/7 emergency on-water rescue service around our rugged coastline – things have changed. A lot.

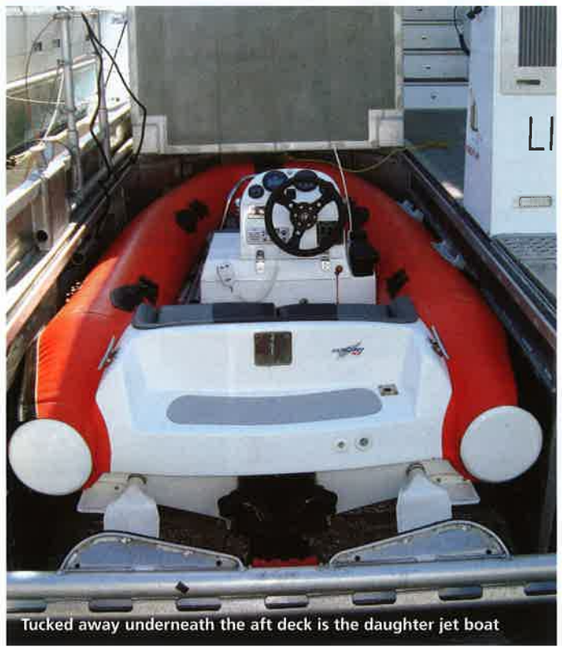
Today the Coastguard consists of a modern fleet of 90 dedicated rescue vessels of all sizes designed to meet their local communities' marine rescue needs.

About 12 years ago the National Federation divided the country into four regions – Northern, Eastern, Central and Southern. The aim was to better manage Coastguard communications and emergency alarm monitoring and to coordinate rescue response services – providing the best response in the shortest time for each region.

The Northern Region coverage area is from Thames across to Kawhia and up both coasts to Cape Reinga. Its assets include 25 Coastguard units with 32 strategically located dedicated rescue vessels; two search aircraft; and a comprehensive marine VHF coverage network. Roughly 1,000 volunteers drawn from all walks of life operate this infrastructure around the clock.

The individual coastguard units remain independent and autonomous. Their personnel are made up of local volunteers – in many cases professional fishermen and seafarers. It will surprise some readers to learn that these Coastguard units receive very limited direct government funding. The majority of their operating costs come from public donations and other community sources, or through the unit's own hard-earned fund-raising efforts.

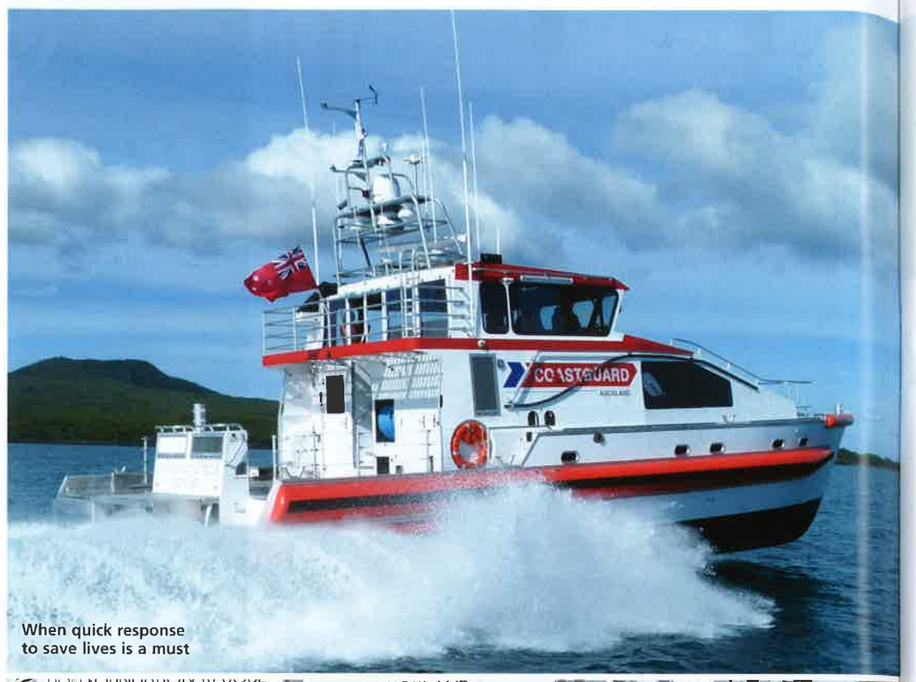

The main conning position is complete with an impressive array of electronics

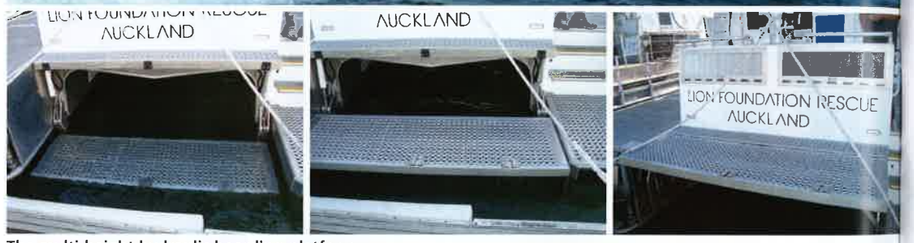

Tucked away underneath the aft deck is the daughter jet boat

Auckland Coastguard Incorporated has a heritage that dates back 80 years to 1935. The organisation is based at the Auckland Marine Rescue Centre in Mechanics Bay, sharing the facilities with Coastguard Northern Region, Surf Lifesaving Northern Region, Maritime Police and the Auckland Harbourmaster.

While Auckland Coastguard has always owned vessels, the number and certainly the calibre of these vessels has waxed and waned with the financial strength of the organisation. Because of these constraints, Auckland Volunteer Coastguard was the first to formalise and integrate into a Search and Rescue service with private vessels as 'auxiliaries'. These "Rescue Cutters" filled the gap as a group of privately owned vessels that performed an unpaid professional search and rescue service. Over time, this group became known as "the Cutter Group".

The Cutter Group was legendary, at one stage numbering ▶


When quick response to save lives is a must



The multi-height hydraulic boarding platform

over 40 vessels – a fleet that changed over the years, grew in size, and increased in speed and capacity. Members also fitted new technology as it arrived – things we take so much for granted now: radar, GPS, chart plotters, etc. This was a unique organisation without peer anywhere in the world.

Being private vessels, they had one distinct advantage over our present dedicated rescue vessels: they had well-stocked bars on board, and with that *esprit de corp*, the raft-ups (on board parties) were equally legendary.

One legacy of the Cutter Group era is the overnight patrols still carried out by *Lion Foundation Rescue* and *ASB Rescue*. It is believed that internationally, only the German Coastguard service comes close to how this unit operates with overnight patrols.

The point of difference from all other Coastguard units being that the crews live aboard doing their duty patrols – every weekend, and on all public holidays – including nearly three straight weeks over the Christmas/New Year holiday period.

In Auckland this practice originated from the Cutter Group days, where large, well-equipped private launches crewed by volunteers would sail on a Friday afternoon to various points around the Gulf. The aim was to be able to effect an immediate response to an emergency. (Remember, eight to nine knots was considered the norm in those early days – and 12 knots was *fast*.)

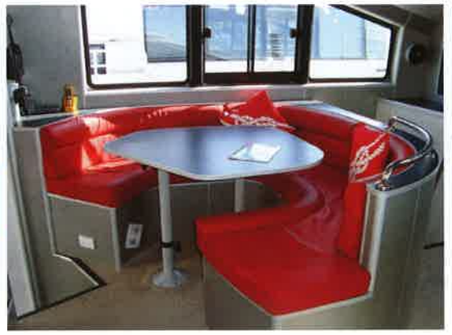
As the years progressed, vessel speed improved, along with sea-keeping abilities. While the use of private vessels for patrols may have ceased, this service remained in vogue until 10 years ago.

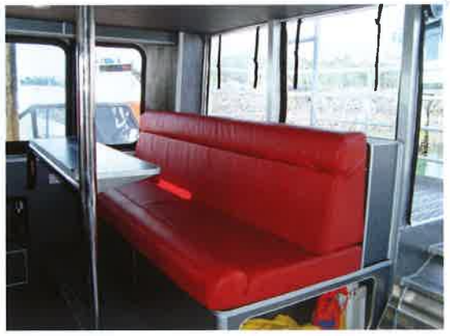
Today, Auckland Coastguard has two large, fast, dedicated rescue craft able to handle even the worst the Hauraki Gulf can offer as they respond to some lost soul at sea. They also have the smaller *Trillian Rescue Alpha* (similar to most units) for close-to-home inner harbour rescue services. This vessel is supported in the inner Hauraki Gulf by Coastguard rescue units at Howick, Maraetai, Waiheke Island, Hibiscus Coast and North Harbour.

The launch recently of a new 15m Teknicraft-designed rescue vessel named *Lion Foundation Rescue* replaces a 12 year old vessel of the same name – which is now up for sale.

Built by Q-West Boatbuilders in Wanganui,


One twin or double cabin


The dinette seats six comfortably


The observers/passengers seating

this new catamaran moves Auckland Coastguard giant steps forward in terms of design and capability.

The design is based on the already proven Teknicraft cat used by both the New Zealand Police and Victoria Water Police as well as Auckland's Sealink Pine Harbour ferry service.

Talking with Senior Master Brooke Archbold, the question was asked: Why a Teknicraft Cat? Brooke explained that when he was scoping out the plans for a replacement vessel for the previous *Lion Foundation Rescue*, he observed the Pine Harbour ferries operating safely in some of Auckland's most atrocious weather. And you can bet on getting it *all* when some hapless soul in serious trouble calls "May Day".

"Nothing seemed to stop them – even when other ferry services were being postponed or cancelled."

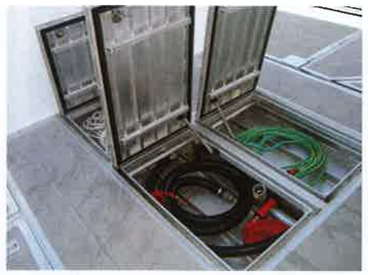
After doing a few runs courtesy of Pine Harbour ferries, Brooke's mind was made up: these boats could handle just about anything. The very function of a Coastguard vessel and crew requires them to operate in situations where other vessels wouldn't normally go, and when most other boaties are safe at home.

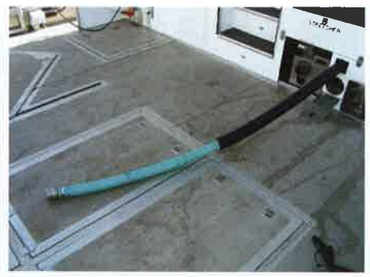
With the availability of large, fast, gin palaces – sometimes sold to a new owner with little or no boating knowledge – when the call goes out for help, it's often in rough conditions. Or, the call might be from a small runabout with six new New Zealanders onboard in trouble because the weather has cut up rough. In either case, the situation is urgent. People might soon find themselves in the water. Lives are at risk. The modern Coastguard vessel must be capable of responding quickly and safely.

Retaining Auckland Coastguard's live-aboard function for the nine rostered crews (each crew consisting of four to six volunteers) was regarded as *essential*. It was clearly a part ▶


Main tow line


Stowed davit


Wingdeck stowage under deck


The donkey prick! Extendable suction pipe

Honda portable pump


Scoop and boat stretchers


MOB stick


Forward fixed fire nozzle

of the culture. More importantly, it had also proved to be an operational function that *worked*.

Not only were the crews on active duty and patrolling the harbour, response time delays were greatly cut. No more pager delays alerting crews; volunteers caught up in Auckland's unkindly traffic; then time to assemble at the base before departing the Marine Rescue Centre. Much better.

DESIGN

The build committee did not want a large exposed cockpit space, because of crew safety in rough seas. The vessel needed to meet the needs of supporting multi-agency use – St John Ambulance, Police, DoC and the Harbourmaster – when required. The Coastguard craft are not and never will be a compliance vessel for Maritime NZ.

Because of the many islands and the population in and around the Hauraki Gulf, the Coastguard is called to do a lot of medical and stretcher transfers. (*Lion Foundation Rescue's* medical cabin or 'Ambo Bay' is capable of taking any one of the three differing designs of stretchers currently in use – plus the emergency rescue baskets or boat-type stretchers.)

Constructed in AA5383 H116 *Sealium* high strength marine alloy, outwardly *Lion Foundation Rescue* looks like a serious rescue craft. To be fair, she's a vessel we will struggle to do justice to in this short review.

Her fender system is a bit different, with solid slab-sided hulls. This is quite a large vessel, but she still needs to be able to go alongside another vessel *softly* – leaving no dirty skid marks. The fender pontoons are made by Lancer and are constructed using Lancer's combination of a three-density foam inner, with an air encased Orca 1100/1870 Dtex Hypalon tube outer. In essence, for a feather touch landing, the softer layer of air in the outer casing takes the cushion – but land slightly harder, and you start leaning on the softer of the foam inners … and so on. This system takes the jolting thump out of even the worst landings.

On first impression the extensive painted topsides are striking – but actually, it's all plastic stick-on film and decals. Kitted out in Coastguard livery, even the main white hull and structure are covered in this plastic film. One advantage of this system, it was explained, is that if a portion of the film is damaged, it can be cut, removed and replaced easily – without the need for expensive paint jobs. That's not a bad system – especially for a vessel of such high use and with the potential for bumps and scrapes, as Coastguard vessels are prone to.

Below the water, International Paints Inter-sleek aluminum underwater anti-foul paint system for high-speed craft has been used. That's a good match.

WALK AROUND

On stepping aboard we note the hydraulic boarding platform. This may be submerged to recover inert swimmers (or a body) or raised to the marina level for step-aboard or stretcher wheel-on use, then raised to deck level where they maybe wheeled on board.

To starboard is a wide set of boarding steps for the capable, and to port – concealed in its own fold-out, roll-off launching ramp – is the vessel's onboard emergency rescue 'daughter boat'.

On raising the foldaway deck hatches, this daughter boat (equipped with 120hp jet) can be deployed in five minutes. This little boat is powerful enough to tow vessels under bridges to their mooring, or to work in restricted waterways.

Central across the transom is a raised console that also supports the main towing post and engine room air outlets. The remainder of the cockpit is protected by quick-release guardrails – collapsible for when the boat is working alongside other vessels.

To starboard, alongside the cabin there is a long hatch. Lifting it reveals a 200 kg SWL Ocean Lift davit.

In the centre of the cockpit above the wing deck are four hatches for ready access under-deck stowage. The last two large hatches give access to twin machinery spaces below.

Across the aft screen of the deckhouse there are a number of access points and features. From starboard, the cockpit conning position is in the corner. The next door is the shower compartment where recovered swimmers may be warmed up quickly before changing into dry overalls. We note a number of hatches in here, with the one to starboard revealing the 'swap and go' gas bottles in their own ventilated weatherproof locker. It's interesting that it is no longer an option to own your own alloy gas bottles as most local service stations or supply outlets have now gone to 'swap a bottle'. Changing times.

A watertight Freeman hatch in the deck allows access to the front end of the starboard engine room. Another large hatch in the forward bulkhead gives access to the large electrical space and onboard gas-califont for water heating. Next door to this is the main heads. Then, recessed on its own drum, is the main rescue polypropylene floating towline. Below this is the emergency boat stretcher, as well as a back injury recovery stretcher in its own under-floor slide-out locker. There is a tube for boat hooks, and the extendable suction pipe for the emergency pump, onboard fire hydrant and last but not least the Honda portable fire or salvage pump – all of these have a home.

The next set of steps gives access to the main bridge and conning position (more on this later). The last door gives access to the 'Ambo' bay which is fully equipped with emergency medical supplies, oxygen, defibrillator and various first aid and medical kits to cater for most emergencies.

There is another patient heads and shower that may double as the women's facilities. Obviously Brooke (a big man) has had something to do with the design of the spaces as he could access most of these with ease.

There's a MOB stick or marker in the corner – for use when training or doing searches. Designed to be deployed in man overboard and other search situations, these markers drift in the current at the same speed as a floating person.

Moving through the medical bay, by lifting the stairs one ▶

gets access to the port engine space watertight bulkhead door and to the front end of the engine room. Because of the size of the big red beasts – Scania main engines – we suspect that even Brooke might have trouble accessing the machinery spaces in an emergency. However, we are sure he will have a much smaller engineer on hand capable of crawling around in these tight spaces when the need arises.

We then move forward up into the main saloon to be met with the 'U' shaped crew dinette, with seating for six comfortably – including a practical about-face backless 'ottoman' on the end.

The galley is large and practical with generous bench space, a large four-burner gas stove, a grill and an oven. There is a convection microwave for quick heating, and a two-door fridge and freezer for food storage. There's ample cupboard space for crew stores as well as the onboard condiments.

Each crew must cater for itself, so the larder and refrigeration remains clear until the designated galley slave boards with the crew stores. Apart from tea and coffee and soft drinks, each duty is a dry ship – clearly a part of the accepted maritime policy of drug- and alcohol-free ships. For crew entertainment there is an onboard music, TV and DVD system.

Moving forward, there is a door leading onto the forward deck and short companionways dropping down into the accommodation spaces in each hull. The cabins and bunks with top-of-the-line mattresses may be rigged as generous single/duel cabins with two cabins able to be converted to doubles. Some crews have couples on the roster. There's a separate Master's cabin. There is a small washbasin and mirror

Apart from the large super floods and light bars up the mast, all on board lighting is LED by Hella Marine

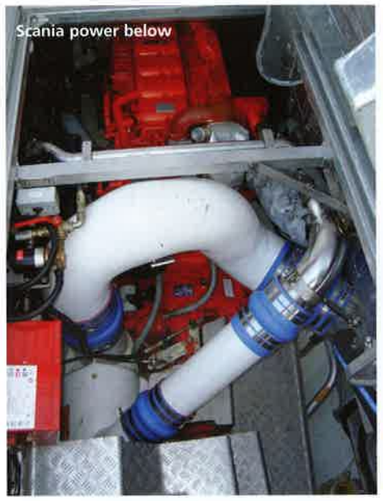
in the cross passages for a quick wakeup wash on the run when duty calls.

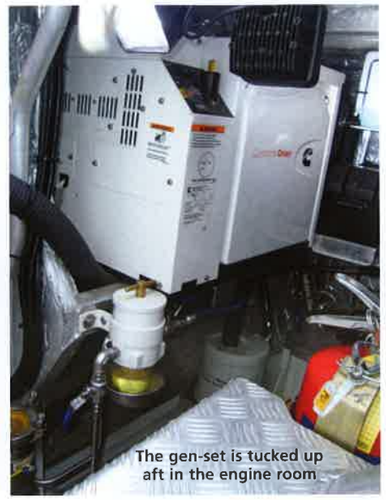
Moving out onto the forward deck, the internal fenced handrails become obvious. There is a spare anchor secured on deck, and the forward fixed firefighting nozzle for when nudging up to a vessel on fire, or boundary cooling etc.

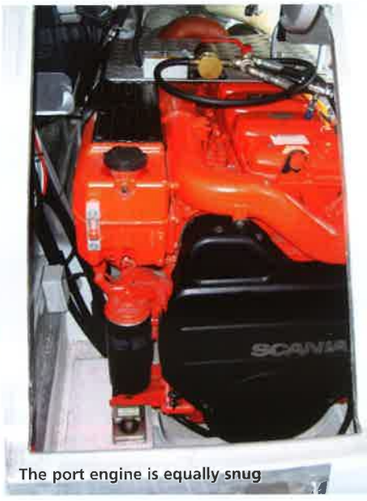
Under the deck, above the wing is the main anchor, chain and winch system to keep the deck clear of anchoring obstacles. We note a smaller warping drum and separate nose roller fairlead on the bow. Our inquisitive looks were quickly answered when advised that one of the many tasks the Coastguard fulfills is recovering boatie anchors when the host boat's winch dies or the boaties' twin armstrongs run out of puff. On each bow either side, there is a large mooring bollard.

It is worthy of note that when moving around the vessel, both inside and out you are never far from a hand-hold to steady yourself. Also noticeable: the décor throughout the vessel is soft on the eyes. *Lion Foundation Rescue* has an onboard CZone management system which also controls the lighting. Each Hella LED light has both a white and a red pilot light – the CZone lighting system, once activated, will prevent the inadvertent switching on of a white light that may destroy a crewmember's night vision when underway at night. Apart from the large super floods and light bars up the mast, all on board lighting is LED by Hella Marine. And there is a lot of it.

The vessel is also equipped with a sophisticated eight camera Panasonic integrated CCTV system. This not only records


Scania power below


The gen-set is tucked up aft in the engine room



The port engine is equally snug

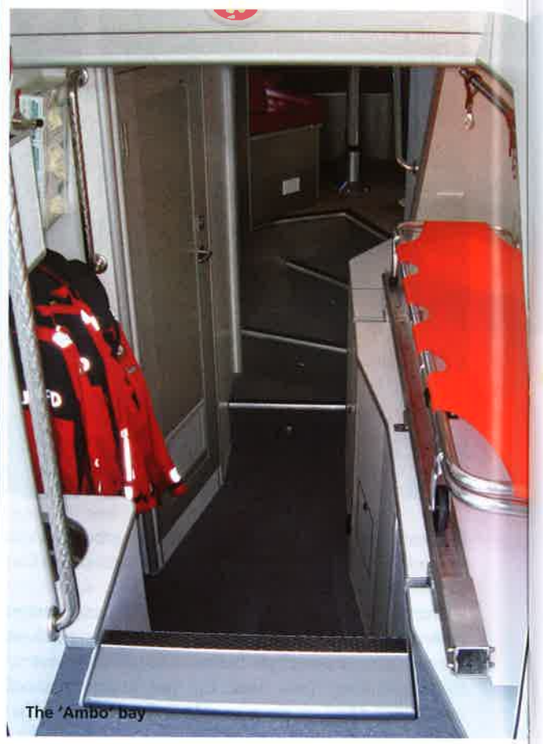
incidents for future lessons and training, but can also send *live video feeds* of the incident back to the land-based Control Room in real time.

Next we move upstairs to the command centre and main conning position. The bridge has both internal and external access from the cockpit below, and gives access to the small flybridge/observation deck up and at the rear of the main deckhouse. Here on the port side is the third set of helm controls and steering position equipment.

Back inside, there is a large bench seat raised across the rear with a table for passengers and extras to observe what is going on while keeping them out of harm's way. Opposite, to port is the tactical command position with all of the electronic aids and radios required to hand. Immediately in front of this position is the main chart table and chart stowage drawers.

But all the action happens to starboard at the main command and conning position where three crewmembers are all seated in ergonomically-designed KAB 514C safety seats – each with an integrated retractable harness. These fully adjustable spring-loaded seats are fast becoming the industry standard for ▶

The foil gives lift at relatively slow speeds

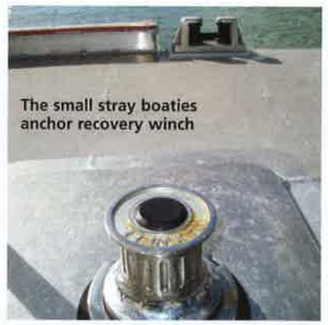

The 'Ambo' bay

high speed maritime vessels, including Pilot and rescue craft. The helmsman or master is in the starboard seat with the main helm, throttles and bucket controls as well as the Hamilton Jet blueARROW operating control system at ease of hand. This position also allows the helmsman good access to lean out the window maintaining visual contact when working close or alongside other vessels.

There is an extensive onboard electronics navigation and communication package onboard *Lion Foundation Rescue*. The main package is based on SIMRAD and includes:

- SIMRAD BR 4G broadband radar and a SIMRAD 10kW open array radar
- 2 x SIMRAD NSS EVO 2 – 12 inch touch screens with remotes
- 3 X SIMRAD RS90 VHF radios each with an additional paired wireless
- 4 x SIMRAD NSO EVO 2 – 19 inch touch screens with remote
- SIMRAD AP70 Autopilot with remote at helm chair
- 6 x SIMRAD repeater instruments
- 2 x Apple iPads
- Panasonic F2-G1 Toughpad
- Taiyo TD-L1550A Radio Direction Finder
- 2 x Wynn wiper control panels (Port and starboard)
- 2 x Sanshin Searchlight control panels (Port and starboard)
- Ritchie Steering Compass
- 2 x FloScan Fuel Computer displays
- Scania engine panels
- Onan gen-set panel
- Maxwell remote anchor control and rode counter AA150
- UHF handheld radios
- ACR EPIRB

Also aboard are a grab bag, distress flares, a throw rope, MOB marker stick and just about anything else you could think of.


The small stray boaties anchor recovery winch

Needless to say, the onboard safety equipment – including the eight person life raft, crew inflatable lifejackets, 20 passenger lifejackets, flares, and smoke floats – all exceed the prescribed rules for this type of rescue craft.

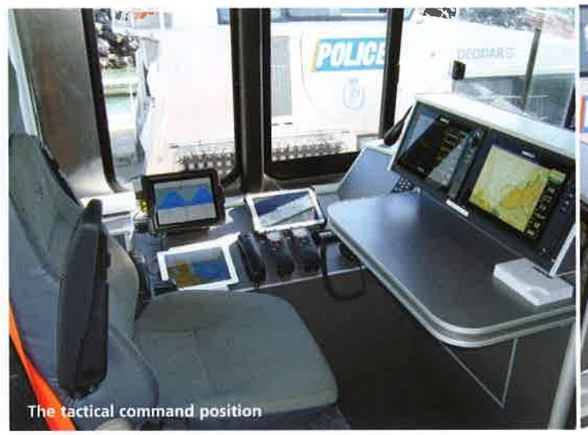
PACKING POWER

Lion Foundation Rescue is powered by twin Scania DI 13 077M 551kW marine diesels coupled to ZF 360 close coupled gearboxes (ratio 1.045:1) fitted with clutchable PTOs on the main drive. As well as powering the twin HJ-364 Hamilton water jets, the Power Take-offs drive the main firepump.

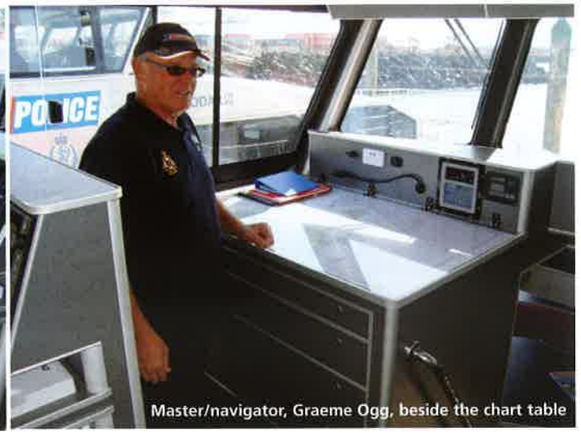
This catamaran incorporates the Teknicraft adjustable foil, positioned approximately amidships between the hulls. With this foil adjustability the vessel is able to achieve her service speed of 27 to 30 knots at 65 percent power, burning six litres of diesel per nautical mile. Open up the taps, and as 40 knots speed approaches, the fuel burn increases dramatically.

The Hamilton jets with their blueARROW control system make maneuverability at slow speeds a dream. Likewise, when operating within close proximity of another vessel or berthing, *Lion Foundation Rescue* is so easy to control.

Because the vessel is fitted with gearboxes, the engine drives may be disengaged – particularly useful when recovering swimmers from the water astern. Or the port engine maybe used as a single unit giving good maneuverability when recovering a swimmer off the starboard quarter steps or lower landing – or when operating the starboard engine drive fire pump. Also below is a Cummins Marine Onan MDKBJ 6kW 50Hz marine gen-set.



The tactical command position



Master/navigator, Graeme Ogg, beside the chart table

Considering that most servicing and maintenance with be done by professionals alongside in the marina, I quickly came to understand why most engineers are people of small stature. The servicing of this vessel will certainly require such. (A larger person will be able to cope in the tight spaces – if he can stay away from the hot bits.) In this vessel's case, the servicing of the starboard engine room will be best left to a leprechaun. The port engine room is even tighter on space.

ON THE WATER

Once underway, the ride is smooth and quiet with the hint of a growl to remind you of the power below. Up top, the speed is deceptive. The foil is simple to adjust to the conditions, and quickly applies lift to raise the hull further out of the water – thus reducing drag and increasing speed-versus-power.

Once out in the open, we mounted a short passing ship wake and the resulting landing was soft and stable. For crew safety, it is recommended when not seated to have one hand for the ship and one for yourself when travelling at speed in any seaway. We found the vessel to be very stable. She is soft riding and rolled into her turns keeping any G forces directly underfoot no matter how hard the turn. *Lion Foundation Rescue* is, in a word, crew-friendly.

Yes, she certainly has the legs to 'get up and go' in an emergency, and her bridge is high enough to offer full all-round vision to the horizon when searching and she has every aid to navigation you would want.

Yet to be supplied, but with fittings ready, an onboard FLUR night eyes system will be a welcome addition to the kit.

Lion Foundation Rescue is one superbly built and fitted-out rescue craft. The considerable capital cost to put this vessel on the water was raised from community and charitable funding organizations. At around $2.6 million, that is not cheap.

It never ceases to amaze me how Government and its agencies continue to sidestep when it comes to funding the capital investment of what is effectively the Crown's Search and Rescue responsibility – outsourcing go vernment roles to the voluntary sector and community groups. This long-standing grizzle aside, *Lion Foundation Rescue* is the most capable rescue craft currently on New Zealand's coast. She is truly a vessel that can rightfully claim to be 'Simply the Best' of our Coastguard rescue fleet.

SPECIFICATIONS

LOA	15.15m
Beam	5.8m
Draft at rest	850mm
Power	2 x Scania DI 13 077m 551kW marine diesels
Gear boxes	ZF 360 clutchable
Propulsion	2 x HJ-364 Hamilton water jets
Fuel	2,500 litres
Water	400 litres
Designer	Nic deWal, Teknicraft Design
Builder	Q-West Boatbuilders Wanganui
Service speed	27 knots
Passengers	20 plus crew
MOSS	Restricted Coastal Limits, Part 40A
Owners	Auckland Coastguard Inc