Weather conditions

Average windspeed	SW 25-30 knots
Sea state	Moderate to rough

Towards a new beach-head

Looking a bit like a SWAT team's assault vessel and sporting an All Blacks logo, there's something vaguely menacing about the new 7.1m Sealegs RIB. Turns out she's perfectly mannered, but the attitude does herald a new phase in the manufacturer's fortunes...

Story and images by Lawrence Schäffler

Sealegs has your lifestyle in mind

Once regarded as a curious oddity in recreational boating, there's growing international respect for Sealegs RIBs – a welcome turnaround for a company that has faced its share of problems. Since its 2003 launch growth has been spasmodic, and though it listed on the New Zealand Stock Exchange in a bid to find development capital, share performance has been uninspiring.

That was then.

Today, armed with a broader vision, new markets and an injection of fresh capital, things are looking up. Despite the global recession, Sealegs managed to sell 103 boats in the 2010 financial year, and last May it announced a first-ever profit of $642,000. Later in the year it received a $9 million injection of capital from the Mauritius-based Avenport Investment Corporation, with Avenport's chairman, Frenchman Eric Series, becoming Sealegs' chairman.

Global expansion has always been part of the company's plan. So it established a wholly owned subsidiary in France as a base for its planned European expansion. Signing on as "Official Marine Sponsor" of the All Blacks should provide a catalyst for exports into Europe, using France as the springboard.

This new chapter in the Sealegs story is best illustrated by the new 7.1m RIB. The boat's not noticeably different from its predecessors, but it does boast a number of new features that underscore the management team's broader vision – promoting the vessel's unique amphibious abilities to non-recreational end users.

Since inception, some 550 Sealegs RIBs have been sold – the vast majority to recreational boaties. But the growing number of end users now includes search and rescue teams, fire departments, police, emergency services, Coastguard services and special forces. The new features will make the boats even more appealing to these groups.

The most significant new developments are a new, more powerful inboard engine to drive the boat's hydraulic systems, and the introduction of All Wheel Drive (AWD) and Extended Run Time (XRT). More about these in a minute, but essentially they're geared to advancing the RIBs' abilities to negotiate difficult terrain with increased traction, and offering a longer "operational window".

An amphibious vessel gives rescue and patrol organisations unique, multi-role capabilities. Able to seamlessly travel over land and water it can carry out effective and rapid rescues in natural disaster areas. Debris-strewn environments, as in the aftermath of the recent Japan tsunami crisis, are perfect for the Sealegs RIB.

Existing users of the original two-wheel drive RIBs include the Indian Police Force, Australia's SES, the Malaysia Fire Department and the US Fire Department. Sealegs RIBs were used very successfully in the recent Queensland floods.

"This RIB's standout advantage is the freedom it offers for exploring beaches and islands off limits to conventional boats…"

Trade A Boat says…

TRADEABOAT

SEALEGS 7.1M RIB

Fishability	★★½
Ride	★★★★★
Versatility	★★★½
Finish	★★★★★
Ease of towing	★★★★
Wow factor	★★★★

AWD and XRT

The two most important upgrades on the new RIBs are the AWD and XRT features. Together they represent a significant advance on the vessel's ability to function in search and rescue roles.

Previous models were equipped only with rear-wheel drive. Sealegs engineers have re-configured and adapted the hydraulic drive system to include the front steering wheel. Additional traction ramps up the vessel's ability to negotiate rough, slippery or steep terrain, a crucial advantage for negotiating flood-ravaged or tsunami-devastated areas.

For easier manoeuvring with AWD activated, Sealegs runs in limited slip mode. But if maximum traction is required, depress the button on the hydraulic joystick to engage full diff lock mode. This forces all driving wheels to turn at the same rate for reduced wheelspin – useful for particularly steep or tricky areas.

The usefulness of the additional drive wheel and traction is supported by the introduction of the Extended Run Time. Previous Sealegs RIBs were fitted with a 16hp Honda four-stroke engine for powering the hydraulic system – the pump used for lowering/raising the legs as well as the actual drive system on the wheels.

The new models have a 24hp V-twin Honda. It's an air-cooled engine, light, simple and very, very reliable, says Bryham. And it's been fitted with what is effectively an inter-cooler for the hydraulic oil. Previous models – without the inter-cooler – could only "drive" for 10 minutes (with an hour required for cooling down again). The new system extends that run time to 30 minutes – again, a vital improvement for search and rescue operations.

Using the legs

The job is simplicity itself – and it transforms the conventional launch/retrieval operations on the boat ramp. Conventional boaties can only stare in envy.

Approaching a beach (or the boat ramp) you throttle the main engine back to idle speed and tilt it up slightly. You start the little Honda

The dash is more Range Rover than Lada

There's more passenger space than on a standard centre console

New models have a 24hp V-twin Honda for more power and an extended run-time

"it's a beautifully responsive hull, carving precisely through the water…"

(it draws its fuel from the same tank as the main engine) and hit a button on the dash to deploy the legs. They fold out quietly and without fuss (the operation takes about 10 seconds).

Easing forward, you engage the Honda's drive throttle (increasing the hydraulic pressure) as you feel the wheels touch the bottom. And they extend down a considerable distance, so there is little chance of grounding the prop. A little "push" from the main engine may help to get the wheels firmly aground.

Kill the main engine, and drive ashore. The main engine's steering system doubles for steering the front jockey wheel – another example of the RIB's clever hydraulic system. The drive system is designed for torque rather than speed, and the boat trundles along happily at 10km/h.

If you are wondering how you get out of the boat once you're ashore – well, again, the hydraulic system works a little magic.

Much like an obedient camel, the front leg retracts and lowers the front of the RIB, allowing you to easily clamber over the bow onto the sand.

For recreational boaties – and especially those with beach houses – the RIB's obvious appeal is the ability to drive in and out of the water without the usual tow vehicle/trailer/boat ramp rigmarole. Waiheke Island dwellers have taken this benefit to heart – at last count there were 42 Sealegs RIBs on the island.

But if you don't have a bach at which to park your RIB and have to tow it to and from the water, the launch/retrieval process is simple – you drive it on and off the custom-designed trailer. Once on the trailer, you retract the legs and the hull settles into its cradle.

Performance

If a stately 10km/h on land sounds like a sedentary pace, the RIB more than makes up for it on the water.

Sealegs is happy to fit any outboard to its vessels, but prefers to equip the 7.1m RIB with a 150hp Evinrude ETEC.

"It's a very quiet, clean-burning engine with an excellent power-to-weight ratio," says Bryham. "We've engineered the RIB for low weight and agility, and feel the ETEC complements it perfectly."

With the 150hp ETEC and a full tank of fuel, the 7.1m model weighs in at a trim 1220kg – which accounts for its adrenalin-pumping acceleration and pace. At wide open throttle she barrels along at 78km/h. Not that we could get anywhere near that on our test day – heavy swells eliminated that option.

But it's a beautifully responsive hull, carving precisely through the water – my kidneys emerged unmolested from our high-speed leaps. Pronounced chines and the Hypalon tubes combine well to deflect spray, and in high-banked turns I was relieved to note that the rear wheels remained drag-free, well clear of water.

The 80-litre, built-in under-floor fuel tank may seem a little sparse for those used to boats with 150 and even 200-litre tanks and the extended range these provide – particularly since the "in-board" Honda draws from the same supply. But the RIB is a very light, easily-driven hull – I guess it depends on how heavily you lean on the throttle.

Play time

The Sealegs RIB is an interesting proposition for boaties – and I'd suggest it will appeal to a particular kind of person. Throwing a line over the side is certainly within the ambit of the vessel's versatility, but it's not the ideal fishing platform, and that probably eliminates a large segment of the recreational market. But it is a wonderful vessel for those more inclined to family fun and off-the-beaten-track adventures.

She's spacious and will accommodate six to eight adults in comfort, with plenty of storage space for picnic gear. With a tow pole, skiing and wakeboarding are obvious activities, and the rear seat has a reversible back rest, perfect for the observer. Divers will relish the easy entry afforded by tubes, and there's a very neat fold-up boarding ladder on the starboard sponson for getting back into the boat.

The verdict

For me the RIB's standout advantage is the freedom it offers for exploring beaches and islands off limits to conventional boats. Being able to drive onto a remote beach protected by difficult access is very appealing – no need to anchor offshore, no need to get wet, no need to beach the boat, no need to worry about the tide. Perfect for a family outing, creating unique adventures with lots of time for exploring ashore.

At around $129,000 the 7.1m RIB is not the most affordable boat in its class, but it is a unique vessel and will no doubt be tempting to those with the appropriate wallet and an adventurous spirit. Now if I could find my wallet... ⚓

+

- Blistering performance
- Camel-like, knee-down mode for embarking/disembarking
- Dual halogen headlamps for dawn/sunset boating

–

- 80-litre fuel tank may be a bit small
- Honda inboard is a little noisy

SPECIFICATIONS

SEALEGS 7.1M RIB	
LOA	7.12m
Beam	2.61m
Draft	0.41m
Deadrise	21°
Rec hp	150
Weight (with 150hp Evinrude ETEC)	1220kg
Drive engine	25hp air-cooled Honda V-twin
Fuel	80 litres
Priced from	$129,000

Price as reviewed **NZ**$129,000

Engineering an amphibian

Story and images by Lawrence Schäffler

Lined up for final touches

Producing a boat that's equally at home on land and water presents unusual challenges. Apart from creating the actual technology that makes for an effective "cross-over" design, you have to make sure the complicated moving bits won't all seize up the minute they're exposed to sea water.

And that means (expensive) corrosion-resistance materials, good design, high-spec engineering and above all, very tight tolerances.

All of which is evident at the Sealegs factory in Albany, north of Auckland. The company produces around 10 boats a month at the high-tech facility, and other than the tough, commercial-grade Hypalon sponsons, hull painting and a few pre-cast aluminium components, everything's produced on site.

The company employs some 60 staff comprising designers, CAD operators, engineers, welders, fabricators, CNC machine operators and electronic technicians. It's a well-orchestrated, production-line environment, with hulls moving smoothly between the various stations. Increasingly, the boats are destined for offshore clients, and two complete, ready-to-go RIBs fit into a 40-foot container.

Given the harsh operating environment in which the RIBs' hydraulic drive system and legs are continuously immersed, the high-spec demands are understandable. While the hydraulic pump and drive motors are among the few off-the-shelf items, they have to be marinised by the Sealegs engineers. Similarly, the Honda's stock exhaust is replaced with a customised stainless steel model.

Hydraulic cylinders and legs are manufactured from solid aluminium (5083 marine grade) billets which progress through various three-axis CNC milling machines that shape them, drill hydraulic channels and tap threads.

Stainless steel components such as the hydraulic rams and pins are also machined, as well as acetal plastic bushes. Legs are pre-assembled and delivered to the appropriate station for fixing to the hull.

Sealegs hulls are Lloyds certified, and that not only demands a high level of precision and integrity in fabrication, but also repeatability. That's seen the introduction

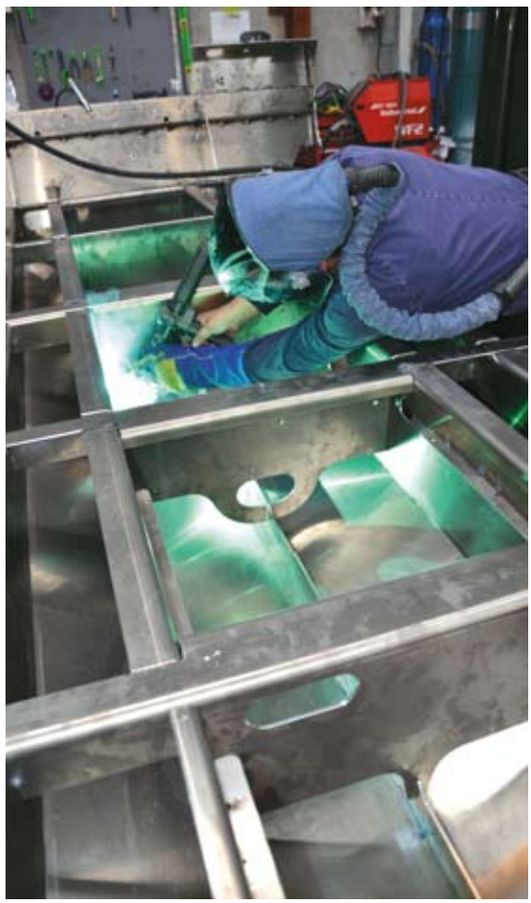
The factory is spotless – more like a laboratory than a workshop

of technology to eliminate variability.

A CNC-router cuts the hull components from the large, 5mm aluminium sheets. The finished components – stringers, frames and bulkheads – are designed to "lock" together – held precisely in place so that the welders can fix them together in exactly the same position every time.

There's also a press brake for bending the one-piece hull plate to the 21o deadrise. Previously, hulls were fabricated in a jig from three separate plate sections, exposing the process to variability. Pressing the hull from a single plate eliminates welding, grinding and sanding. It's not only cleaner and more accurate – it's also much faster and more efficient.

While the factory is set up to produce 10 boats a month, it has capacity to nearly double that. If the export strategy progresses as envisaged, it may soon be testing its limits. ⚓



The brushed finish is applied