

HIGH-SEAS SECURITY

A privately owned Nova Scotia boat-building company has spent the last five years quietly intensifying its R&D activities

Over the past six decades, A.F. Theriault & Son Ltd., a boat-building company in Meteghan River, on Nova Scotia's French Shore, has quietly grown from a small maker of wooden fishing boats to one of the largest privately owned boatyards in Eastern Canada. To date, the company has constructed 400 marine vessels made of wood, fiberglass, steel, aluminum, and some of the most advanced composites in the world.

"Our philosophy is that, no matter what it is you know now, there is always a way to adapt that knowledge and make it better," says company president Arthur Theriault. "If you don't do that, then as a business you will lose." Currently, A.F. Theriault is working on what it claims is the most advanced platform to enter the marine market. Company officials won't discuss the details of the vessel but say it's for homeland security, and that they're working with two giant global companies. "Homeland security is a market with huge potential for us," says Theriault. "This platform will set the pace for high-technology, quality, and excellence in this industry."

With 175 employees—including engineers, scientists, and technologists—the company has spent the last five years intensifying its R&D activities. The primary focus has been on composite core stress panels; a light and incredibly strong material made from a unique blend that includes Kevlar, carbon fibres, and structural foam with self-insulating fire resistance.

Last month the company launched a high-tech fishing boat made from these panels called the *Fundy Viper II*. It's a 13.5-metre by 5.7-metre vessel that peaks out at 22 knots—a performance that is far beyond most comparable designs. "I've been on fishing boats most of my life, but this one beats them all," says owner Chris Hudson. "It's fast, stable, strong, safe, and efficient for fishing."

A.F. Theriault uses the panels mostly to build boat hulls, decks, bulkheads, and wheel houses but it's currently adapting the technology to develop affordable solutions for Third World and relief-housing projects. The panels are constructed of hard composite foam that serves as a structural sandwich, offering a superior strength-to-weight ratio and high resistance to temperatures. The core provides optimal insulation that reduces vibrations from the engine and propulsion system.



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As a result, the panels are 10 times lighter than an equivalent piece of steel and yet can withstand about 100 times more pressure.

This year Sweden's Department of Aeronautics released a report entitled *Sandwich Structures for Naval Ships Design and Experience* comparing the cost of navy ships made from advanced composites and those made from steel. The department concluded that composite hull structures are 40% lighter than steel hulls, they require less maintenance, and their lifecycle is 40 years longer.

Russell Saunders, A.F. Theriault's vice-president of marketing, believes that the recent increase in steel prices will spike demand for the company's composite core stress panels. "The price of steel has increased by 50%," says Saunders. "This is going to lead people to ask if there is something better out there. And there is. The opportunities that advanced composites offer are tremendous."

Recently, Nova Scotia Business Inc. (NSBI), the province's frontline business development

agency that provides financial, export, and advisory solutions, granted A.F. Theriault a \$650,000 working capital loan to aid future R&D and to allow the company to compete for more lucrative international contracts. "As you get into larger projects, financing becomes a greater challenge," says Saunders. "NSBI is helping us meet that challenge by providing the financial ability to help bridge the cost of larger projects that we wouldn't normally be able to consider."

In the future, Theriault plans to continue to increase his company's R&D activities and is focusing on expanding its homeland-security business. "We've always been a progressive company and receptive to change," he says. "We're moving forward and coming up with a totally new concept of marine platforms specifically designed for homeland security." — CORRIE FLETCHER-NAYLOR

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