



WAYNE LEDENPOSTING

Robert Allan stands in front of a tug his firm designed. He estimates his Vancouver company had a hand in designing 40 per cent of the world's current tugboats.

TRANSPORTATION

Making tankers safer, a tug at a time

The world beats a path to Robert Allan Ltd. for innovative tugboats. Now the Vancouver firm is tackling the Kitimat challenge

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SPECIAL TO THE SUN

As the Northern Gateway pipeline project inches closer to approval, a Vancouver businessman and his world-renowned naval architecture firm are working to protect B.C.'s coast by designing innovative tanker-escort tugboats.

If the pipeline goes ahead, Robert Allan Ltd.'s "super tugs" will be built to escort the projected 200 tankers, some carrying as much as two million barrels of oil, that would annually frequent the coastal waters at the pipeline's terminus near Kitimat.

"They will be the most capable escort tugs in the world," said naval architect Robert G. Allan, who is executive chairman of the board of the company.

"It's frontier technology." These tugs will boast unrivalled size, power and manoeuvrability, able to generate a mammoth 200 tonnes of pulling force, about five times that of a typical modern harbour tug.

Robert Allan Ltd. is Canada's oldest privately owned consulting naval architecture firm, established by Allan's grandfather in his Vancouver base in 1930. Joined later by his son and then Allan himself in 1972, the firm specializes in work boat construction, from firefighting vessels to research ships. But Allan calls the tug boat portion of the business their "bread and butter."

Today, Allan estimates that 40 per cent of the world's tug boats were designed in the company's office near Granville Island. Their ships are built around the globe, from Turkey to Southeast Asia. On average one Robert Allan Ltd.-designed tugboat is delivered to a client somewhere in the world every week.

In the past two decades, Robert Allan Ltd. has made a name for itself spearheading the development of a new breed of tanker escort tug after 1989's Exxon Valdez oil spill and the ensuing increased regulations on tanker traffic.

In traditional ship handling, tugboats guide vessels into dock when the vessels have already slowed down to come



Photos and a Robert Allan Ltd. illustration show the Switzer Kilroom, one of a class of six escort tugs based in Britain, built in Vigo, Spain, and designed by Robert Allan Ltd. in Vancouver. New escort tugs being designed to escort oil tankers off the B.C. coast will be bigger and more powerful big brothers of Switzer Kilroom.

into a port. Near-coast tanker escorts, however, must operate at much higher speeds — around 10 knots — where a potential power or steering failure on a tanker could result in grounding or a spill.

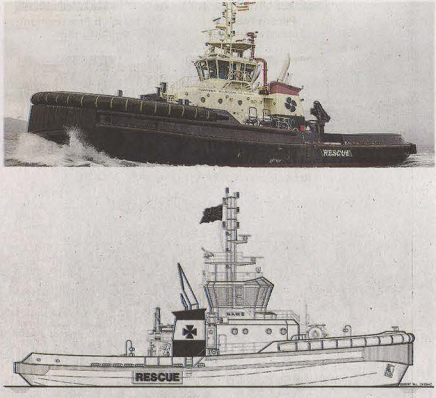
To meet the need, Allan and his team designed powerful tugboats that incorporate a new keel design, something like a sailboat's. This allows the boat to pull sideways to the direction of the tanker with more force than with propellers alone.

Before this innovation, tug boats normally did not include a keel, Allan said. "We've probably gone through a generation of early escort tugs, and now we're on the threshold of a whole new generation of super escorts," said Allan of the boats planned for the Kitimat project. It's not the first time that

Allan and the company that bears his family name have been on the leading edge of work boat innovation.

The architects designed North America's first vessels that used 2-drives, an innovative configuration of ship propellers that allowed for significantly better manoeuvrability. In the early 1980s, Allan led the Canadian marine industry in adopting computer-aided drafting. Under Allan's leadership the company has continued to develop its expertise in highly technical computer drafting and virtual fluids testing, something he said has helped keep them ahead of their competition.

"Every one of our vessels goes through the Robert Allan design house in Vancouver, and we use them specifically for all of their very high technology design work that they do," said



J. Barry Snyder, president of Signet Maritime Corporation. Signet Maritime, a U.S.-based tug and barge operator and builder that operates in the Americas, Africa and Middle East, has been client of Robert Allan Ltd. since 2007, when the firm designed the operator's first two vessels, the America and the Pacific Star.

Allan and his team are responsible for the design work of all Signet Maritime vessels in operation or under construction. Snyder said from his corporate headquarters in Houston, Texas. "The Robert Allan designs for escort work and for harbour docking and undocking work are far, far superior to anything that's designed or built in the United States."

Allan, who said he can't remember a time he ever wanted to be anything except a naval

architect like his father, has been pushing boundaries since the early stages of his career.

One of his most memorable projects came at the same time as his father's death in the early 1980s, when Robert Allan Ltd. designed the most powerful anchor-handling tugs of the era, capable of cutting through up to 1.2 metres of ice, for work in the Beaufort Sea.

"Taking the reins as company president at just 34, Allan said the experience of completing the unprecedented design during a period of personal hardship made him strong.

Six years ago, Allan started the process of selling his stake in his grandfather's company to a group of senior employees, in a rotating shareholder model.

"As I approached my late 50s, I realized none of my sons were going to be following in

my footsteps and I was, quite frankly, working my ass off and didn't want to die at the age of 65 like my father," said Allan. "Now I've seen how those 10 former employees have taken ownership and pride in this company, and it's been wonderful," said Allan. "I couldn't have asked for a better strategy."

In the future, Allan expects to see demand for larger and more powerful tugs boats, driven by the increase in size of ships working the world's oceans. They will continue to play an integral role not only in global commerce and safe resource development, he said, but also on the leading edge of ensuring environmental protection in marine environments.

See video with this story at vancouver.sun.com