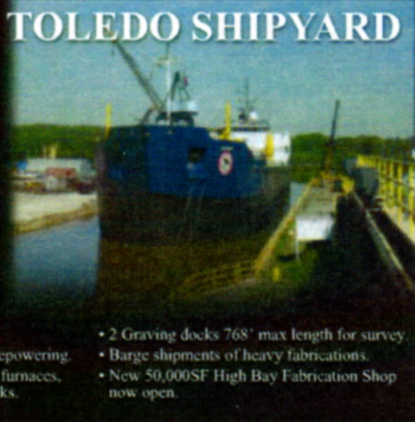




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MEET THE CREW

Steamship engineering

Bill Armitage serves as Chief Engineer aboard the last Canadian-flag steamer



Bill Armitage

Only a handful of working steamships remain on the Great Lakes, all of them American-flagged with one exception, the *Algoma Montrealeis*. For the Canadians this is it, the last steamship in an industry that has evolved to a generation of mariners brought up in diesel-powered engine rooms.

From Gaspé to Thunder Bay, steam propulsion dominated the engine rooms of Canadian lakers for over a century. In the last decade their numbers have slowly reached the point of extinction, and with that, the realization that the career path of a steam engineer has all but disappeared.

Algoma Montrealeis Chief Engineer Bill Armitage is at the crossroads of his career—transitioning from steam to diesel. For a few months this year, Armitage is back doing what he loves, working on a steamboat. He doesn't look like you'd expect the Chief of an old steamship to appear. Armitage is young, tall and lanky, with a boyish grin beneath a full head of reddish-brown hair. It would be easy to mistake him for a junior officer.

"A lot of people say 'Gosh, you're awfully young for a steam guy,'" said Armitage, laughing.

When this past summer began, Armitage was ashore working on a special project for Algoma Central Corporation at the corporate office in St. Catharines. The company asked him to spend a few months relieving the regular Chief on the *Algoma Montrealeis*.

"I'm glad I got called here," said Armitage, "but I also volunteered. I don't mind saying goodbye to the last steamship."

Career path. Armitage grew up on the southern shore of Georgian Bay in Midland, Ontario. During his teenage years, he was a member of the Royal Canadian Sea Cadets, a program developed to promote physical fitness, citizenship and to foster an interest in the Canadian Forces. Before graduating from high school, Armitage did join the forces, spending six years as a reservist.

Making a career choice is not always easy. Initially, Armitage considered dutifully following in his father's footsteps with a career in mental health. His father worked at Oak Ridge, a division of the Penetanguishene Mental Health Centre, the maximum security wing for the criminally insane. Yet Armitage's parents reacted coolly to that idea.

"I really wanted to be a screen actor," Armitage said.

While empathetic to his son's aspirations, his father's approach was more pragmatic.

"If you want me to pay for your education I'll pay for it if you go to a trade school," Armitage recalled.

He was soon considering an engineering degree. His curiosity piqued when a fellow Sea Cadet interested in pursuing a marine engineering diploma at nearby Georgian College in Owen Sound handed him a brochure about the school's programs. A marine engineering diploma became more appealing.



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Armitage started at Georgian College in the fall of 1998. The three-year coop program taught him the fundamentals of being a marine engineer, including sea time aboard the *Canadian Progress* and the *Canadian Voyageur* before graduation in the spring of 2001. He took his first engineer's job aboard, of all ships, the *Montrealais*, then under the ownership of Upper Lakes Shipping.

As Armitage's career progressed, he served as a licensed engineer aboard the *James Norris*, a vessel with an up and down reciprocating Skinner Unaflo steam engine, the *Quebecois*, the *Canadian Leader*, the *Canadian Mariner* and by 2003 the *Canadian Provider*.

"I've been jumping around all the same steamships throughout my career," Armitage said, "but the ships that I've spent the most amount of time on were the *Canadian Leader*, the *Quebecois* and the *Montrealais*."

Steam to diesel. When Armitage began sailing on his license, Upper Lakes Shipping still operated a number of steamers, all with engine rooms similar to the *Montrealais*. The main operating characteristics of these vessels were cross-compound impulse steam turbines fed through a nozzle block with steam generated by Babcock and Wilcox sectional header water tube boilers.

"It basically has a high-pressure turbine followed by a low-pressure turbine and the low-pressure turbine has its own separate casing," explained Armitage about the engine room set-up on the *Algoma Montrealais*. As the ship has aged and fuel prices have increased, the number of nozzles open on the vessel when underway were reduced from 21 to nine when loaded and to seven when running lightship.

In support of their transition from steam to diesel, Algoma Central Corporation is investing in a new generation of slow-speed, two-stroke, diesel-powered vessels for the Great Lakes. Among marine engineers, opinions vary but Armitage sees the benefits.

"The guys that have been on the steamships for a long time don't like going to diesel because, well, it's more work," said Armitage. "You're busier on the diesel ship because you're always doing maintenance."

For Armitage, it's the ingenuous simplicity of the engine room design that makes him a proponent of the steamers. A marine steam plant encompasses a closed feed water system with no links to atmospheric pressure.

"The people that designed these steam plants knew what they were doing," he said. "People are still mystified by this because you're always recycling steam. It just doesn't go through the turbine and blow out the side. It's condensed back into water and pumped back into the boiler."

Even though a marine steam turbine runs clean and requires low maintenance, it's not the most efficient piece of machinery.

"The turbine is only as efficient as the formula used to calculate the rotational speed of the turbine," Armitage said. "The best efficiency is obtained when the linear speed of the blades is half the velocity of the steam entering the blades."

Saying goodbye. As for the *Algoma Montrealais*, the last Canadian steamer on the Great Lakes, speculation continues about the vessel's longevity.

"Everybody's been happy with this ship," Armitage said. "She is a proven worker. She's been a great boat." Patrick Lapinski ■

See Meet the Fleet on page 68 for details on the *Algoma Montrealais*.

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