SPRING 2025

B.C. TUGBOAT

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Innovation, tradition, and the future of tugboats in B.C.

The authorized representative: Beyond a name on paper

The new age of small electric commercial vessels

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MESSAGE FROM THE EDITOR

Spring has arrived on the coast, and with it comes the latest edition of *BC Tugboat* magazine. As the weather warms and operations pick up across our ports and coastal terminals, we're reminded once again that the tug industry remains at the heart of British Columbia's working waterfront.

In this issue, you'll find stories from across the coast from the essential services and providers both on and offshore who help make this work possible and keep this industry thriving.

As always, this magazine is a reflection of your work, your stories, and your voice. We welcome your feedback, ideas, and photos—keep them coming.

Here's to another safe and successful season on the water.

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The authorized representative: More than just a contact person

By Robert Anderson, Barrister and Solicitor, Bernard LLP

Many people think that the Authorized Representative ("AR") is considered a mere "person of contact" for a Canadian vessel registered with Transport Canada. While in some instances the AR is the middleperson between the registered owner and the federal government, the reality is that the AR is responsible for several aspects of vessel management, crew, and passenger safety in accordance Canadian maritime laws. This article serves to highlight some of those roles and responsibilities involved with being appointed as AR, and the consequences for failing to discharge them.

The Canada Shipping Act, 2006 c. 26 (the "CSA") requires that every Canadian vessel must have an AR who is responsible for "acting with respect to all matters relating to the vessel that are not assigned by [the CSA] to any other person". This broad definition under the CSA covers vessel-specific administrative responsibilities for the AR, such as marking and maintaining the vessel with its official number and notifying the Transport Canada vessel registry of changes to a vessel's registration details such as alterations to the vessel's structure. The CSA also makes the AR responsible for several vessel operational requirements such as ensuring seaworthiness for the vessel's voyage, arranging for the return (and payment of costs incurred thereto) of crew members where a Canadian vessel sails without them or is shipwrecked, developing procedures for preventing discharge of pollutants, procedures for safe operation of the vessel and ensuring that the crew and any passengers receive safety training.

It should be noted that the CSA is not the only maritime legislation that charges ARs with specific roles and responsibilities. Under the Wrecked, Abandoned or Hazardous Vessels Act, S.C. 2019. c. 1 ("WAHVA"), for example, an AR may be served with a notice of detention order for a violation under that Act and may be liable for all costs and expenses incurred in respect of the detention. WAHVA also provides that the Minister of Fisheries and Oceans may direct the AR of a dilapidated vessel (defined as a vessel that is significantly degraded, dismantled

or incapable of being used for safe navigation) to repair, secure, move, dismantle, or destroy the vessel if it is located in a public port or public port facility.

When a Canadian vessel suffers a maritime casualty, the Transportation Safety Board will often investigate the loss and may make a finding that the loss was attributed to the vessel's non-compliance with regulatory requirements under, among others, the CSA. If an AR is appointed for the Vessel, the TSB may investigate what steps the AR did to ensure compliance with Canadian maritime laws and regulations. In some instances, the TSB may find that the AR did not carry out their responsibilities as required (for example, failing to ensure that the vessel was seaworthy or that the crew failed to receive safety training prior to a voyage) and note this in their official investigation report of the casualty. Depending on the severity of the AR's non-compliance, Transport Canada may take regulatory enforcement action by levying administrative monetary penalties against the AR personally.

Recent amendments have increased the administrative monetary penalty amounts for some violations under the CSA from $10,000 to $25,000, which may apply to the owner of a Canadian vessel as well as the AR. Appointing a competent and informed AR is critical to ensuring safe operation of a Canadian vessel, and the safety of its passengers and crew, but moreover ensuring that the vessel is lawfully operated and equipped. The role of an AR is not to be taken lightly and those who are named an AR should take the time to fully understand their responsibilities and ensure the vessel they are appointed for complies fully with Canadian maritime laws and regulations. This applies equally to Canadian registered commercial and pleasure vessels as AR's may be appointed for either type. Accordingly, the appointment of AR is more than a simple point of contact and if the AR fails to ensure proper vessel safety and operational management, they may personally face a significant risk of financial exposure.

The new age of small electric commercial vessels

In British Columbia's coastal waters, a quiet revolution is underway. The once-familiar rumble of diesel engines on workboats and pilot vessels is giving way to the soft whirl of electric motors. A new age of small electric commercial vessels is dawning, led by visionary local players who see electrification as both a technological breakthrough and a business opportunity. This editorial explores how Tymac Launch Services, a storied maritime operator and 3GA Marine Ltd., an innovative naval architecture firm, are charting a course toward an electrified future for BC's workboats. It's a story of tradition meeting innovation and of a bold vision to transform an industry.

A visionary operator steers toward electrification

Tymac Launch Services, founded in 1929, has long been an integral part of BC's marine transport industry. For over ninety years, Tymac's fleet of pilot vessels and tugs has serviced the Port of Vancouver and surrounding waterways, ferrying harbour pilots, shipping agents and officials to and from ships with reliable efficiency. This diverse marine transportation company built its reputation on adaptability and customer service. Now, under forward-looking leadership, Tymac is adapting once again – this time to a carbon-constrained era that demands cleaner, smarter propulsion.

"For us, electrification is the next logical step in a legacy of innovation," says Steve Hnatko, Vice-President Operations and Business Development of Tymac Launch Services. "BC has an abundance of clean hydroelectric power and we believe using that energy to drive our vessels will both cut operating costs and protect our coastal environment for future generations."

This conviction has put Tymac at the forefront of efforts to replace fossil-fueled small craft with battery-electric alternatives. The company views BC Hydro-powered electrification as the path forward, leveraging the province's renewable electricity to charge its next-generation boats. Tymac is actively collaborating with partners and government programs to make electric propulsion a reality in its fleet. It has even designated its Vancouver Harbour dock as a testbed for the new technology.

Tymac's commitment is driven by both business and environmental calculus. The operator expects the electric conversion of small vessels to yield up to an 80% reduction in fuel costs, based on extensive fleetwide technical studies commissioned by Tymac and funded by BC Hydro. These studies combined a meta-analysis of over 100 similar vessels with advanced Computational Fluid Dynamics (CFD) modeling to simulate hull resistance and accurately determine operational fuel/

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SIGNIFICANT OPERATING COST REDUCTIONS

The marine industry is transforming as electrification technology revolutionizes vessel operations, reducing fuel costs and ensuring compliance with emissions mandates. Electric propulsion drives set new efficiency standards, providing shipowners a clear path to fleet modernization while meeting environmental regulations.

3GA is leading this transformation on the Pacific West Coast, offering end-to-end design and build services for electric commercial vessels. Our solutions eliminate greenhouse gas emissions, generate carbon intensity credits and deliver cost savings through affordable electricity from BC Hydro.

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energy consumptions, providing robust and industry-specific data. Marine vessels operating in B.C. currently contribute over 1.4 million metric tons of greenhouse gases annually. Vessel electrification would significantly cut these emissions.

Replacing diesel engines with electric drivetrains means virtually zero tailpipe emissions – an important contribution to provincial climate action goals. As Hnatko notes, "We're excited to prove that what's good for the planet can also be good for business."

Innovation at the helm: 3GA Marine's electric vision

On the technical side of this marine makeover is 3GA Marine Ltd., a British Columbia-based naval architecture and marine engineering firm leading the charge in electric vessel design. Founded in 2013 with offices in Victoria and Vancouver, 3GA Marine has earned a reputation for innovative solutions in ferry, tug and workboat design. The company has been at the head of BC's vessel electrification initiative, partnering with organizations like BC Hydro on projects aimed at cleaner marine transportation. Earlier this year, 3GA Marine delivered a fully electric tugboat to Seaforth Environmental — a compact, powerful vessel that marked a turning point in practical electric propulsion for harbour operations.

Now 3GA Marine is applying its expertise to smaller commercial vessels. The firm is the technical innovator behind a new, first-of-its-kind electric pilot vessel design, scheduled for construction completion in 2025–2026 on BC's coast. Many cutting-edge electric boats rely on hydrofoil technology to lift the vessel out of the water to achieve long range, however this technology is vulnerable to impact failure from debris or wildlife. 3GA's electric pilot vessel has an optimized hull design without foil technology and manages an impressive 50 km range per charge at cruising speed.

"Our goal was to deliver a practical electric workboat that fits our coastal reality," explains Daniel McIntyre, Vice President of 3GA Marine. "We set out to show that with smart design and BC's clean energy, even small pilot vessels can run all day on batteries – no foils, no gimmicks, just solid engineering."

The result of 3GA's development is a battery-electric pilot vessel tailored for operators like Tymac. It is compact but capable, designed to carry up to 12 passengers at typical harbour transit speeds (around 25–30 knots). With about an hour of endurance, it can comfortably handle the daily routes of urban pilot vessels

and crew boats. Fast-charging technology enables quick turnaround at dock with vessel recharge to 90% in under 2 hours.

Foil-Assist "Switchblade" – Extending the range

As groundbreaking as the new pilot vessel is, 3GA Marine is not stopping there. The company is preparing to launch a foil-assist technology dubbed "Switchblade". This innovative add-on is designed to address impact failures of hydrofoils for operations in the debris-laden waters of the Pacific Northwest. The Switchblade is designed to lift the vessel just below the water's surface, disengage upon impact and switch back into position once clear. According to 3GA's projections, the Switchblade system could more than double the vessel's range, pushing it well beyond 100 km on a single charge.

Invented by 3GA Marine and currently in the final design stages, Switchblade is scheduled for commercial adoption in 2026. "We engineered Switchblade for our coast – it's about resilience as much as efficiency," notes McIntyre. "This could extend an electric vessel's reach to over 100 kilometers, which is unprecedented for a boat of this size."

A maritime call to action

What is needed now is for more industry players to seize the momentum. This is a call to action for operators and vessel owners across the coast: the technology is here, the business case is solidifying and the environmental imperative is undeniable. Exploring custom electric vessel solutions is no longer an indulgence — it's rapidly becoming a strategic necessity. As "The New Age of Small Electric Commercial Vessels" unfolds, it carries a slight touch of the visionary: one can imagine a not-so-distant future where quiet, clean electric boats are the standard in every harbour. 3GA Marine Ltd. stands ready to help tailor solutions to an operator's specific needs. That future is being pioneered now.

Seaspan's tugboat training simulator.

Seaspan Marine demonstrates a constant commitment to safety

Sometimes, the most important work is what goes unnoticed. This is true for a vast number of occupations, but as Jessica McHaffie, Senior Manager of Marine Personnel and Dispatch for Seaspan Marine points out, it is especially the case for the crew of a tugboat.

"With the tide, the weather, the basic physics and mathematics that go into landing these barges in small terminals — there's a lot that goes on inside a mariner's head that the general public has no clue about," she says.

Yet, out of all the responsibilities a mariner might have, the most essential is safety. No matter what tasks need to be completed — as Seaspan Marine's Manager of Vessel Operations, James Earles, puts it — safety comes first. "First and foremost is the safety of our crew," he says. "People have to remain safe on board. Second is the safety of the equipment. Then, safety of the environment is next. After that, it becomes about getting the job done."

Safety is paramount because working at sea can be a dangerous profession, with countless risks that must be monitored and mitigated.

When our mariners go out to sea, we want to ensure they feel confident and capable to handle those risks. That's why, for any new deckhands, there are intensive training procedures they must

Jessica McHaffie, Senior Manager, Marine Personnel and Dispatch, Seaspan Marine.

The Seaspan Eagle pushes large freighter.

follow before going out on the water.

Trainees are taught at a low teacher-to-student ratio, ensuring that they can handle even the smallest detail of their role. Over the course of several weeks, deckhands will learn the exercises they'll need to perform both on models in the classroom and out on the actual vessels.

Yet, physical training is just one aspect of safety. It's also about working together — ensuring the safety of everyone, not just themselves, as Earles explained.

"We put them out with their peers," he says. "Their peers make sure they are safe. Make sure they have the ability to improve. Make sure that they're going to be a good team player. They have to get along with others."

Even then, after their training

program is done, for new deckhands — and all Seaspan Marine employees — nothing about safety is ever finished. Safety requires a constant commitment, staying vigilant to deter any potential issues.

"The biggest thing is that they're able to keep themselves and their crew safe, and that they're improving," says McHaffie. "That doesn't mean they're ready to go out on their own. It just means we're willing to continue to invest in them."

That investment doesn't end once someone becomes a deckhand. As mariners progress throughout their careers, potentially moving up to a Mate or Master position, an emphasis on training and safety remains.

For those more advanced positions, Seaspan works with SeaWays Global, conducting separate training for both conventional and Azimuth Steering Drive (ASD) tugboats.

For conventional tugboats, their training runs over six days, with three in Seaspan's in-house, state-of-the-art tugboat simulator, and three on the water. For ASD tugboats, however, the training is a bit longer, with two weeks in the simulator and one at sea.

Through this combination of both simulator and on-water training, trainees can learn through experience without the consequences that come alongside beginner mistakes — before then ironing out the aspects that the simulator can't replicate on a real tug.

All this intensive training, the weeks of being in a simulator, or training out at sea, it's all in service of providing a workplace in which every single person feels safe to do their job. After all, it's those workers that make everything we do here at Seaspan Marine possible.

"We're a people company. We have tugboats, and we have barges, and we move stuff, but we're a people company above all else," said Earles. "So, if we're a people company we've got to make sure that our people are trained, make sure that they're happy with the culture. If you're a people company, if you want to succeed, you better not be hurting people."

We are committed to delivering valuable, enriching training to foster a safe environment for everyone. No matter how Seaspan or the industry changes in the future, that commitment will never change.

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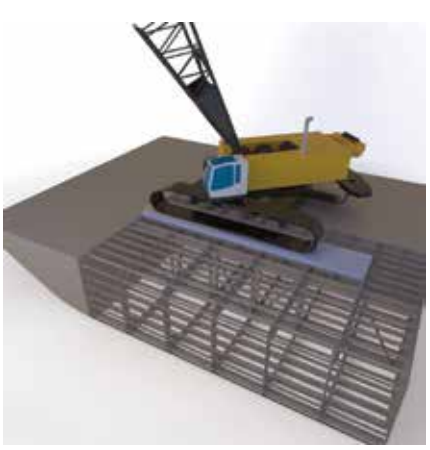

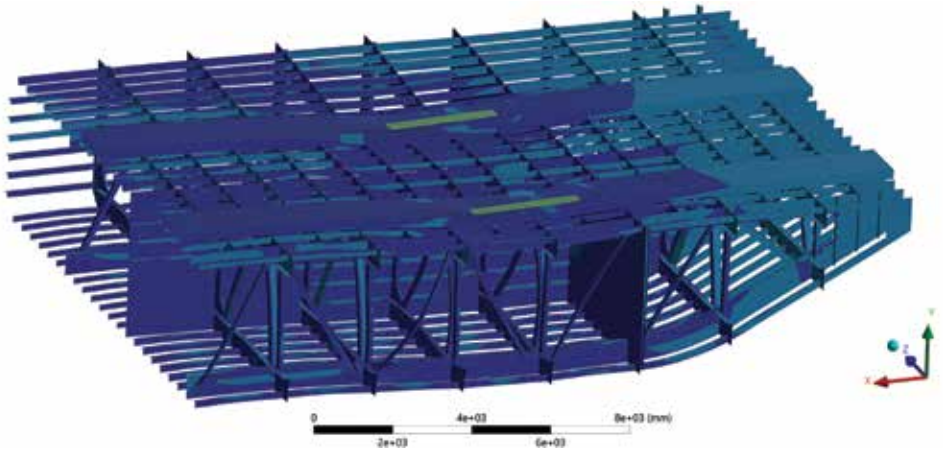

Renderings of a barge's inner structure – steel frames, ballast tanks for balance, and a strong support structure built to hold heavy cranes.

The flat deck barge, a vital asset in marine construction, is currently experiencing high demand on Canada's West Coast due in part to the current abundance of large marine construction projects. These vessels, characterized by their flat-bottomed hulls and clear flat decks, are essential for transporting various cargo and are typically moved by tugboats.

There are many examples of flat deck barges that have been purpose-built for use in the marine construction industry. These barges are designed specifically for the support of heavy equipment such as crawler cranes and excavators. These purpose-built barges will be outfitted with mooring equipment in the form of spuds or anchor winches. They will often have some sort of crew shelter and on-board power. Hidden from sight, these barges will have internal structures suited specifically to support the intended use.

In British Columbia, as in most regions, regulations mandate that every barge and crane combination be evaluated by an engineer or crane manufacturer to ensure safe operation. This evaluation includes assessing the stability of the floating support and confirming that the barge has been designed to handle the proposed crane's type and capacity.

Although many purpose-built construction barges exist on the west coast, most available barges are designed to support bulk materials such as woodchips and gravel. These barges are typically rated in terms of a total deadweight capacity and a deck pressure or tonnes per square meter.

The process of designing a barge for bulk cargo has been well established through many decades of history and is well described in classification society rules. In simple terms, the builder will need to construct a simple watertight hull capable of withstanding the compression from the deck cargo above and hydrostatic pressure below in addition to the bending moments induced by sea travel.

Converting a deck barge designed for bulk cargo into a work platform for construction introduces unique structural challenges. These floating platforms must accommodate various heavy machinery, including pumps, mooring winches, piles, and crawler cranes. Often these heavy machines have been designed for operating on firm level soil which would provide uniform support and benefit from large contact areas. With the trend for increasing lifting requirements on worksites these machines become large enough to exert forces on the barge deck that are far higher than the barges

advertised deck capacity and warrant a detailed evaluation.

The engineer will consider what loads will be imposed by the equipment. These loads may be reactions at a foundation, pressures from heavy tire loads, outrigger loads, or reactions from machine crawlers. This pressure will be much higher than the total weight divided over the total contact area due to the center of gravity eccentricity that occurs during machine operations. This can require an in-depth analysis of the machines proposed operation and may require the engineer to use estimated weights and centers to determine how forces will bear on the barge.

The engineer will then consider how these loads align with the structures that support the deck plate. Their analysis will differ from the design methods used for barges designed for bulk cargo. The load will now be highly concentrated, and the barge will not benefit from a nearly equal hydrostatic pressure below the cargo.

It can be insightful to picture the barge with the shell plate removed to imagine what is holding up the proposed machine. In this exercise we won't ignore the contribution of that plate, but we recognize that it is the below deck structures that are of primary importance. The required analyses vary depending on the complexity of the supporting arrangement. For purpose-built barges the arrangements often allow first principle evaluations of major structures. When repurposing barges the analyses may require finite element models to ensure the structures can safely support the machine due to the complex interactions involved in the load distribution and deflections involved.

The outcome of the analysis can vary. For some small machines where under deck structures are nearly sufficient for supporting the machine, timber crane mats may provide enough additional load distribution. For large machines or situations where the load lands on areas of insufficient support, additional steel structures will be required. Depending on the situation this could involve an assortment of modifications such as beams on deck, pillars below deck, or additional non watertight bulkheads.

When the installation of very large machines, such as ringer cranes, are evaluated onboard barges the global longitudinal strength may become a limiting factor. This refers to the barges ability to support the load without bending along its length. This concern speaks volumes about the incredible reactions these machines can produce.

While the construction barges on B.C.'s coast may appear similar from the outside, significant engineering considerations are involved in their evaluation and structural design to ensure their safe operation.

Ocean Group brings all-Canadian expertise to British Columbia's harbours

The Canadian maritime landscape is changing, and Ocean Group is more than ever a key player in this transformation. With a consolidated presence in British Columbia, we are committed to providing the port community with reliable, efficient and environmentally responsible towing services. In these times of economic challenges and energy transition, we are proud to be a 100 per cent Canadian-owned company serving Canadian interests.

Strong presence to meet growing needs

British Columbia's ports are at the heart of international trade and must cope with ever-increasing activity. Whether it is ensuring safe maneuvering, optimizing port operations, or supporting the special needs of vessels docking on the West Coast, Ocean Group provides a modern fleet and highly skilled crews. Our local expertise enables us to understand the unique realities of the ports of Vancouver and other major terminals, allowing us to tailor our services to each client's specific needs.

Moving toward an ecological transition

We recognize the growing importance of sustainability in the maritime industry. That is why Ocean Group is proud to add the latest generation of HVO-fuelled tugs, a biofuel that reduces greenhouse gas emissions by nearly 80 per cent, to its fleet in British Columbia. This green shift is a tangible demonstration of our commitment to innovation and environmental stewardship. Our clients benefit from low-carbon towing services, in line with Canada's sustainable development goals and those of the global maritime industry.

A local service designed for you

At Ocean Group, we believe that effective service is based on a relationship of trust and a personalized approach. We excel in our ability to provide customized solutions to meet the specific needs of each port operator. Our teams are available 24/7, ready to respond quickly and professionally to ensure smooth maritime operations.

Our Canadian base is a strength: we understand the economic and regulatory realities of the country and work closely with our local partners to ensure reliable, flexible and high-performing services. This proximity allows us to be responsive, offer solutions tailored to British Columbia's challenges, and support regional economic growth with service that meets expectations.

A trusted partner for the future

In a rapidly changing maritime industry with increasing environmental and operational demands, Ocean Group remains a strategic ally to British Columbia's ports. We are proud to be a Canadian company committed to excellence, innovation and sustainability.

Our goal is clear: to provide port operators with towing solutions that are efficient, environmentally friendly and tailored to their needs. When you choose Ocean Group, you choose proven expertise, a partnership approach and an unwavering commitment to the economic and environmental development of the country.

We are more committed than ever to supporting British Columbia's ports as they work toward a prosperous and sustainable maritime future.

Photos courtesy of Kevin Light.

At Point Hope Maritime, Tugs R Us

By Kathi Springer

Despite the current global economic uncertainty, the maritime economy on Canada's West Coast is growing, companies are expanding and along with them the workhorses of the sector are having to do the same.

The fleet of tugboats that work off the B.C. coast, critical in ensuring the multi-billion-dollar maritime economy runs smoothly, are being tasked to do more, take on more responsibility, and ensure they are ready for action.

According to the federal government there are more than 1,100 tugboats working in B.C. waters providing essential services including towing log booms and barges, ensuring port operations run smoothly by helping larger ships maneuver in tight quarters, escorting vessels with hazardous material and helping ships navigate narrow channels. The tugs keep the economy rolling.

The Port of Vancouver recently released annual statistics showing a record 158 million metric tonnes of cargo worth more than $300 billion moved through the port last year, a five per cent increase over 2023.

Stuart Jones, Director of Technical Operations for SAAM Towage, a Chilean company with 26 tugboats in B.C. and more than 200 at operations around the Americas, said most people don't appreciate the size of the shipping industry and impact it has on B.C. until there is an event that causes a shortage. He said in the last few years, the province has dealt with major situations, like Covid-19, the breakdown of supply chains, and the atmospheric

river that severely disrupted transportation networks. All of that underlined the need for a fleet of reliable tugs on the coast. Jones said a priority for SAAM was to make sure that they had the support in place to ensure they could operate seamlessly.

That can be a daunting challenge for the fleet of tugs, one that would be impossible to tackle without companies having strong relationships around the region with shipyards that can accommodate emergency repairs, regular maintenance and every so often conjure up a little magic.

Ocean Group, a company active on both Canadian coasts, recently added five tugs to its B.C. fleet and now has eight vessels in the area. For Ocean Group, its partnership with Point Hope Maritime in Victoria was critical to increasing its West Coast presence.

Olivier Garon, Director of Fleet Maintenance for Ocean, said his goal was to develop a reliable partnership that could accommodate their needs, and they found it with Point Hope and General Manager Riccardo Regosa. "It's essential for the day-to-day, but they have been so cooperative with everything from emergency repair to mandatory dry dock," he said, adding that in the 20 years he has spent working in the maritime industry, he would say Point Hope is "one of the most qualified and devoted shipyards I have seen."

Garon said what sets Point Hope Maritime apart is the ability to handle big jobs while remaining small and nimble enough to pivot and find innovative solutions to unforeseen problems. "They go above and beyond to achieve, sometimes, the impossible," he said, noting there was a time they developed an innovative solution using air bags to float a large vessel and get it into dry dock when Mother Nature was being uncooperative with the tides.

Jones agrees saying it's that kind

of quick thinking that is essential to keeping operations humming. "In the tugboat industry, there's a bit of a saying; 'there's no such thing as a spare vessel,'" he said. "So, every time you take one down to a shipyard, it's key that you get in, get the work you need done and you're out as quickly as possible."

Jones said SAAM's relationship with Point Hope has ensured their vessels are on the water more often than not. He said the highly regulated industry requires constant maintenance and vigilance in upkeep of the vessels and Point Hope is able to handle the workload.

"That's where the shipyards come into play, and we need them. And we need them at short notice," he said, noting that strong relationship has translated into the ability to address emergency issues whenever they arise. "It's about having a good customer-client relationship willing – even on short notice - to finds ways to move the schedule to make everyone happy."

Jones also noted the uniqueness of each tugboat with their different shapes, sizes, equipment, and weight, which can present a challenge to the shipyard. They are also constantly innovating and trying new equipment – SAAM recently put into service two electric tugs in Vancouver for example.

"Sharing our needs is something that we've worked on with Riccardo over the years," he said, noting their relationship has meant open communication about technological change, and the shipyard has always been able to match them and accommodate.

Tugboat companies have to stay on the cutting edge of technology to keep up with regulations, environmental, and otherwise, as well as meeting the expectations of their own clients.

Garon agreed, noting Point Hope also has the advantage of being an integrated company within the Ralmax Group of industrial firms. He said that gives the shipyard access to an engineering department, fabrication shop,

and other facilities that may be needed.

"Having such a department like engineering in house helps the client to sometimes achieve the quality and conformity (required by Transport Canada)," he said. Garon said having a vessel in dry dock can be expensive, so it's essential the shipyard is always in communication about what's happening.

"When you have such a project, sometimes you can spend $1 million in dry dock, so it's all about the start of the project from the scope of work to the conditions," he said, adding Point Hope has a reputation for attention to detail, high standards both in their work, corporate culture, and commitment to the environment.

Garon advised that its important to be working with a company that maintains those high standards, because if they are paying attention to that kind of detail, you can bet they are paying close attention to what they do on your ship.

Above: Arrow Marine Services proudly completed the Bill L Ledcor refit on June 15, 2024. Seen above, the Bill L Ledcor during and after refit.

Port of Vancouver's record-breaking 2024 signals growth and opportunity for B.C.'s tugboat industry

PORT of vancouver | Vancouver Fraser Port Authority

In 2024, the Port of Vancouver facilitated an all-time high of 158 million metric tonnes (MMT) of cargo, marking a 5 per cent year-over-year increase and reinforcing its role as Canada's premier trade gateway. For B.C.'s tugboat industry, this record-setting year brought not only heightened demand for towing and escort services, but also new challenges and opportunities tied to port safety, sustainability, and capacity expansion.

The Vancouver Fraser Port Authority's annual cargo statistics spotlight a robust year across auto, bulk, and container sectors. Particularly notable was the surge in liquid bulk exports—up 203 per cent to 17.1 MMT—driven by the expanded Trans Mountain pipeline and Westridge Marine Terminal. This dramatic increase in petroleum exports, most of which were shipped to Indo-Pacific markets, led to a significant ramp-up in tanker traffic, demanding precise and reliable tug operations to ensure safe navigation through shared waterways.

"The port's success in 2024 couldn't have been achieved without the unwavering support of the marine services community," says Peter Xotta, President and CEO of the port authority. "Tug operators played a vital role in managing increased vessel volumes, especially through key transit points like the First Narrows."

With nearly 5,000 commercial vessel movements in Burrard Inlet each year, the expansion of the Active Vessel Traffic Management program's centralized scheduling system in 2024 enhanced navigational safety and efficiency. For the tug sector, this means greater integration into a digitally coordinated system that promises better predictability and scheduling—critical factors in reducing downtime and improving crew readiness.

SAAM Towage, a major player in the region, made headlines with the launch of the port's first electric tugboats in April, marking a milestone in decarbonizing harbor towage. Meanwhile, Seaspan Energy secured accreditation to provide LNG bunkering services, reflecting a broader industry push toward greener marine fuels. These developments indicate a clear trajectory toward sustainability—one that tug operators are increasingly expected to align with as port clients and regulators prioritize emissions reduction.

The container sector's recovery—up 11 per cent to 3.47 million TEUs—also brought increased berthing activity, with tugboats essential in handling larger container vessels now able to call at the expanded Vanterm terminal. Similarly, the cruise sector's record-breaking 1.33 million passenger visits in 2024 required coordinated tug support to ensure cruise ships navigated Vancouver's busy waters safely and efficiently.

Looking ahead, major infrastructure projects such as the Holdom Overpass and the proposed Roberts Bank Terminal 2 are poised to further increase cargo throughput, signaling sustained demand for marine towage. With capacity and vessel traffic on the rise, B.C.'s tugboat operators stand at the forefront of enabling safe, smooth port operations.

As the gateway continues to grow, the tugboat industry remains a foundational part of the Port of Vancouver's success—quietly steering the economy forward, one vessel at a time.

Pulling forward: Innovation, tradition, and the future of tugboats in B.C.

By Robert Allan Ltd.

British Columbia's rugged coastline has long shaped the province's identity—and its economy. Today, the long-familiar tugboat is at the centre of a maritime evolution, guiding massive cargo ships, towing heavy loads, and safeguarding sensitive waters from environmental risk. As international trade booms and B.C.'s ports grow busier, tugboat operations are adapting—blending cutting-edge technology with centuries-old seafaring traditions. From electrification and safety drills to Indigenous partnerships and workforce renewal, the industry is charting a new course for a modern, sustainable coastal economy.

The power behind the ports

Tugboats play a critical role in keeping B.C.'s maritime traffic, and economy, flowing. In B.C.'s busy ports, such as Vancouver and Prince Rupert, they escort cargo ships to and from docks, manoeuvre barges, and step in during emergencies. In April 2025, the safe escorting and docking of the Maran Gas Roxana—a liquefied natural gas carrier—by HaiSea Marine marked a turning point. It was one of the first operations under the new LNG Canada project, and it signalled what's ahead: more marine traffic, more complex operations, and longer escort distances as Cedar LNG and Woodfibre LNG come online by the end of the decade.

Tugboats also play a frontline role in marine safety. They're often the first to respond during emergencies and play a big role of safely preventing emergencies becoming disasters. A recent emergency towing and spill response exercise spearheaded by Chief Chipps of the Sc'ianew First Nation and KOTUG Canada—with participation from SAAM Towage, the Western Canada Marine Response Corporation (WCMRC), and the Canadian Coast Guard—showcased how prepared the industry has already become through the investments of the Trans Mountain Expansion Project. These types of coordinated exercises underscore the tugboat industry's critical role in protecting B.C.'s coastal ecosystems.

But it's not just the vessels—it's the network of people behind them. Onboard crews, shore side management, pilots, shippers, equipment suppliers and shipyards all play essential roles. As B.C.'s export capacity expands and port activity increases, so does the demand for these services, making tugboats and their crews an increasingly vital part of Canada's export infrastructure.

Technology steering the future

To stay competitive and sustainable, B.C.'s tugboat operators are investing in technologies to improve both performance and environmental


impact. Dual-fuel and electric tugboats are already in service, marking the start of B.C.'s shift toward lower-emission marine operations and aligning with Canada's 2050 net-zero targets.

Technology also enhances safety and efficiency. Modern tugs now use advanced navigation systems, onboard sensors, and data analytics to reduce maintenance downtime and improve crew performance. This digital evolution is transforming how operators respond to challenges at sea, making operations safer and more resilient.

Environmental stewardship is also top of mind. Tugboat operators and researchers are using data to better understand and mitigate underwater noise—an issue of special concern for Southern Resident killer whales (SRKWs). By analyzing tug-generated noise and comparing it with other vessel types, operators can modify how and when they move through sensitive areas. It's a delicate balance between operational safety and environmental stewardship, but the technology now exists to support both.

Challenges and a changing workforce

The shift toward sustainable tug operations comes with challenges. High up-front costs for new vessels, training programs, and support infrastructure can be daunting—especially for smaller operators. Adapting to new technologies takes time and requires a workforce comfortable with digital tools as well as traditional seamanship.

Compounding the challenge is the fact that many experienced mariners are nearing retirement, and the industry must act quickly to preserve their knowledge. This calls for structured mentorship, formalized training, and policy changes that support workforce renewal. The coming wave of manning and safety management regulations could help catalyze this transition—but only if applied fairly and backed by strong industry support.

There is, however, an opportunity to reimagine what a more inclusive and resilient tugboat workforce could look like. Indigenous Nations along the coast have deep maritime traditions and a growing presence in the marine sector. Partnerships with these Nations—as well as with historically underrepresented groups—are helping open doors to well-paying, long-term careers in marine operations. These partnerships also support reconciliation and foster a deeper cultural connection to the waters B.C.'s tugboats traverse.

What comes next

British Columbia is well-positioned to become a global leader in clean marine innovation. With major projects like LNG Canada, Cedar LNG, Woodfibre LNG and Trans Mountain shaping the future of energy exports—and modern tug technology advancing rapidly—the province is positioned to lead not just nationally, but globally. If supported by inclusive workforce development and robust safety protocols, B.C.'s tug sector could help define how port communities worldwide balance economic growth with environmental protection.

Tugboats may not draw the same attention as bigger flashy ships, but they're essential, versatile vessels. They embody a mix of tradition and innovation—and increasingly, a vision of a maritime future that's safer, greener, and more inclusive. For B.C., investing in tugboats means investing in the long-term strength of its coastal economy, its environment, and the communities that rely on both.

Tugboats are not just tools of trade—they're symbols of what's possible when tradition meets ambition on the water.

UZMAR delivers first high-performance RAstar 3200W tug of 2025

UZMAR Shipyard has successfully delivered TIGER, a state-of-the-art RAstar 3200W Class 80 TBP Escort Tug, to Italian operator OCEAN S.R.L. Designed by Robert Allan Ltd., TIGER represents the latest in tugboat innovation, offering outstanding maneuverability, escort performance, and resilience for demanding operations.

A formal delivery and naming ceremony was held in February at UZMAR's facilities. Distinguished attendees included UZMAR President and CEO Ahmet Noyan Altuğ, OCEAN TEAM Managing Director Michela Cattaruzza, and Robert Allan Ltd. CEO Mike Fitzpatrick. The tug was christened by Father Anton Bulai, and Cattaruzza performed the ceremonial bottle-breaking to officially name the vessel.

In his remarks, Altuğ praised the collaborative effort behind TIGER, noting, "Every contract we sign is built on trust—with our team, our suppliers, and our subcontractors. Today, we are celebrating not just a ship, but a shared achievement. No matter how complex a project, we at UZMAR always deliver with pride." He added that despite coming from different cultures, "the sea brings us together as one."

Robert Allan Ltd.'s Mike Fitzpatrick highlighted the teamwork and dedication required to create such an exceptional vessel: "To build a good tug, you need solid design, quality equipment, and a capable shipyard. But to build an exceptional tug, you also need an owner who is fully engaged. Today, we see the results of that full collaboration."

Michela Cattaruzza addressed the guests, marking a personal milestone. "In 28 years in the industry, this is the first time I have spoken at a christening ceremony. Standing in front of our beautiful TIGER, I'm filled with pride and gratitude. This project has been about more than shipbuilding—it's about building friendships and family."

Launched just eight months after the contract signing, TIGER demonstrates UZMAR's commitment to timely, high-quality delivery. The tug is engineered for advanced ship rescue, firefighting, port operations, towing, pushing, and escort services.

Key specifications include:

- 80-tonne bollard pull
- 32m overall length, 13.2m beam, 5.5m depth
- Azimuth Stern Drive (ASD) propulsion system
- Two Caterpillar 3516E engines, each 2,350 bkW, IMO III certified
- Kongsberg US255 Z-drives with 2.8m FP propellers
- Escort Tug, Recovered Oil Second Line, and Firefighting 1 notations

TIGER is also outfitted with an IBERCISA Split Drum Escort Forward winch, an aft towing winch, and a DATA Towpin system to support complex towing and escort operations.

With cutting-edge design and robust engineering, TIGER is poised to provide OCEAN S.R.L. with years of safe, efficient service—cementing the strong bond between UZMAR and the OCEAN team.


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