

MARINE PILOTING

A Symphony of Movements

BC's marine pilots orchestrate hundreds of ship movements every year. Their goal is to ensure no accidents on our coast. Their tools are knowledge and experience.

BY TIM LYNCH

Assuming their duties at any time over a twenty-four hour period, seven days a week, and under all weather conditions at dockside or out at sea, marine pilots are responsible for a daunting range of tasks: moving large cargo ships from their berths out into busy waterways; steering ships through narrow, busy channels; and docking ships at their assigned berths. Each of these tasks requires a unique sets of skills, and during their execution the pilot performs a duty similar to that of a visiting conductor to a large orchestra: The pilot must create a symphony of motion that provides a sense of harmony among diverse players who await his direction.

In order to fulfill their responsibilities pilots have to develop a "sixth sense" for the conditions affecting the ship. Not only do pilots need to be intimately familiar with the waterways they are navigating and aware of other vessels travelling

close by, they must also be prepared for the unexpected. Changes in nearby shipping traffic, the weather, and especially the wind or current patterns can occur at any time during a journey and they have to be managed promptly.

The Pilot's Role

While researching this article, river pilot Captain Michael Armstrong, who also serves as Chairman of the Fraser River Pilots, invited me to go with him on the ship **Virana** registered in Tonsber, Norway during a short port-to-port journey between the Fraser Wharves auto terminal in Richmond and WWL's Annacis Auto Terminals on Annacis Island. The first thing that struck me was the professional relationship and mutual respect evident between the ship's skipper, Capt. Jesse Fabila, and Captain Armstrong.



Describing the relationship between a ship's captain and the pilot, Capt. Armstrong said "The captain is in charge of the ship at all times. However, pilotage in Canada is compulsory — ships have to take a pilot, there is no option. And when the pilot is on board he is expected to have conduct of the ship. This is compared with the time when the captain is not on duty at the helm; his first mate is at the helm and will have conduct of the ship. Any time the captain comes to the wheelhouse he can take over. Until the captain indicates that he is in charge the first mate is calling the orders."

Explaining the relationship further, Armstrong points out that "It is in this way that the pilot has conduct of the ships. Legally the master has the responsibility. The difference between the pilot and the first mate is that the captain cannot just release the pilot of his duties, as he is able with the first mate. For the captain to take over from a pilot he has to see that there is a serious safety risk and he has to notify the pilot that he is taking over because he believes his ship is in jeopardy. He then has to file a report with the Pacific Pilot Authority (PPA) by contacting the traffic centre immediately and notifying them that the pilot is no longer in command. The captain is then compelled to immediately take the ship to anchor and wait for another pilot. From a practical perspective the pilot is completely in charge. This type of scenario is very unlikely to happen."

Onboard Virana

The **Virana** is a roll-on/roll-off car transportation vessel, 182.5m (608') length, 32.26m (107.5") breadth and 11.5m (38.3') summer draft. The average large cargo vessel visiting BC waters displaces about 50,000 metric tonnes of water. (Tonnage basics: The weight of a ship — its tonnage measurement — can be defined in several ways. Archimedes principle states that "if a vessel displaces a given amount of water then that is its weight," so a vessel displacing 100,000 cubic metres of water would be 100,000 tonnes in fresh water, slightly more for salt water. There is deadweight, displacement, gross, net Panama, net Suez, net tonnage, and so on. Some of these measurements quantify volume of water displaced by

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the ship while some refer to actual weight.) Cruise ships are typically measured on the basis of a volume calculation known as gross tons and would be around 90,000 metric tonnes although their displacement/weight would not be so impressive. They are shallow draft compared to cargo ships. So although cruise ships might appear to be exceptionally large vessels they are not really that heavy. The heaviest ships handled by pilots in BC would be the coal carriers at Roberts Bank, upwards of 300,000 tons.



Fraser River Pilot Capt. John Armstrong (left) with Capt. Jesse Fabila of the 608-foot car carrier **Virana**.

Bringing the ship into a berth that was pre-assigned by the port authority is the climax to a journey. Such a journey can involve moving a cargo ship between local ports along the river or moving the ship among coastal ports many miles apart. The docking of a large cargo ship requires the continuous assessment of several variables and prompt decision-making.

It was fascinating to observe how Captain Fabila, his mate and the helmsman received Captain Armstrong's instructions as definitive directives and how these directives were executed into engine commands that kept the ship on a steady course. Meeting for the first time, they were strangers from different parts of the world with limited command of a common language. But it was clearly evident that a mutual respect existed between everyone involved — a respect for the contribution each individual makes in moving the vessel into a busy waterway or bringing the ship to a precise and quiet stop at a dock.

Leaving or approaching a berth, the on-board crew has to be coordinated with the tugboat captain(s) holding the ship steady. The number of tugboats depends on the size of the ship being moved. The linesmen standing by to release (or attach) the ship from (or to) its berth also need to be in communication with the pilot. The choreography of these movements ensures that the vessel can be released or brought to a stop precisely where required. Failure by the pilot to read the situation correctly and issue appropriate instructions promptly to each player can result in the ship and/or dock being damaged at considerable expense and inconvenience for the port authorities and ship owners.

Becoming a Pilot

How does one become a pilot? It was with some degree of envy that I asked that question. I did receive some solace to discover that the average age of pilots is not much less than my own age. Most people enter the profession in their forties, some early fifties. This degree of maturity is necessary because to be considered for piloting in BC a candidate needs a track record of on-the-job experience within the local marine environment as well as demonstrated proficiency in marine knowledge and competency. All candidates must have a Master's licence along with sufficient time registered having run vessels of a minimum size in the area they are going to be piloting. Local knowledge is critical to complement a Marine



A Steveston-based pilot boat passes by Garry Point's Fishermen Memorial on its way to rendezvous with a container ship and exchange River Pilots with Coastal Pilots.

Master's license. Provided they can demonstrate this kind of experience and are medically fit, candidates are allowed to write three exams. In other jurisdictions it may be accepted that an experienced master mariner with some extended training can become a pilot. The tradition in BC is an insistence on local knowledge and experience of the waterways, riverbanks and coastlines being a prerequisite to becoming a pilot.

A candidate initially has to complete a written exam to assess if he or she still remembers what they learnt at marine school. A second exam focuses on local knowledge — candidates are given a chart outline of the river or coastline and they have to fill it in, listing bridges, pipelines, the currents, lighthouses, buoys and such, as well as write detailed answers to questions. Upon qualifying for these exams candidates are given an oral exam. This exam is recognized as the most challenging hurdle — candidates must appear before a five-person panel comprised of a PPA board member who chairs the examining board, two serving pilots, a master mariner from the authority and an external master mariner (usually an ex-Transport Canada examiner who oversees and participates in the examination). An observer from the Chamber of Shipping represents the industry but they don't ask questions.

The oral exam begins with the external master mariner, who has a great deal of experience, examining the candidate on collision regulations. The candidate has to get 100 per cent on this section of the exam. If they fail to do so, the exam is over. Collision regulations — referred to as "the rules of the road" — are part of Canada Shipping Act, which is administered by Transport Canada, providing guidance for passing

arrangements and movement with other water-travelling vessels. Comparing it with road traffic legislation, Capt. Armstrong describes how it was different in that no one has literal "right of way." There is a stand-on vessel and a give-way vessel, which requires some negotiation as to which ships assume the stand-on status relative to the give-way status. The bottom line is that everyone is obliged to avoid collision, no matter what. Stressing this reality Capt. Armstrong said, "If you get into an collision you are going to wear it."

Pilotage Authorities

There are four piloting authorities in Canada: the Pacific Pilotage Authority (PPA), Central Great Lakes Pilotage Authority, Laurentian Pilotage Authority (which covers the Quebec area) and the Atlantic Pilotage Authority. In BC there have been a number of ways of organizing pilots over the past 100 years or more. During the 1920s there were local independent group piloting companies along the BC coast. These became employees of the government in the '40s and remained that way up to the early 1970s when the decision



Following pilot Capt. John Armstrong's instructions, the 52-foot, 3,000-horsepower Z-drive tug *Westminster Pride* guides the *Virana* away from Richmond's Fraser Wharves.

was made for the coastal pilots to adopt an entrepreneurial model. The Fraser River Pilots remained as employees of the PPA. BC Coast Pilots Ltd. was set up as an independent corporation when the Pilotage Act was established in 1972. It is a

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private company contracting services to PPA, which is a federal crown corporation. Both the River Pilots and BC Coastal Pilots come under the regulatory control of the PPA.


Providing pilot services among the ports on the Fraser River is very different to piloting among the ports along the coastline. Kevin Obermeyer, President of the PPA, described the Fraser River as “A living entity.” He stresses that river pilots have to constantly be aware of the changes occurring in the river as a consequence of water flowing down the river (the seasonally-changing run-off from the Rockies) and the tidal flows coming up the river which vary within short time frame. River pilots are supported in their reading of these events through the Canadian Coast Guard’s Avadepth system of reporting on tidal conditions in the Fraser River (see “The Fraser River” in the September 2006 **Mariner Life**). The quantities of water involved and the sediment that accompanies such movement can result in changing channels that must be periodically dredged to allow the movement of large container ships. For this reason Captain Obermeyer insists that river pilots who are off the job for any extended period of time, either for sickness or vacation, monitor their colleagues upon resuming work, prior to accepting full pilot duties, so that they are conscious of the prevailing conditions.

BC Coastal Pilots serve about 1,500 miles of physical coastline, a territory from Victoria to Stewart, which is in the Alaska Panhandle. Coastal Pilots are required to serve on any foreign vessel that is over 350 gross registered tons, which is about the size of a large ferry, and on Canadian vessels over 10,000 tons. The new Spirit class of BC ferry, which are over 10,000 gross tons, are not required to hire a pilot. Any journey along the coastline that goes over 8 hours duration or 105 nautical miles requires two pilots, so cruise ships exploring the inner passages often require two pilots.

Looking Forward

Describing changes occurring in piloting, Captain Larry Wilson, President of BC Coastal Pilots, said “The vessels travelling our waters in the ’50s were all about 450 feet long or less, now we have ships over a 1,000 feet long plying the same waters. We are currently revising our strategic plan to take into account all the changes that are coming and we are assessing how they will impact on BC docks and piloting skills needed. We have to recruit and train people and maintain the expertise of our part-

ners. We are at the forefront of training in Canada and the industry worldwide. Currently we are very proactively involved in sixteen port developments in the province, advising the principals on the best way to make their docks work. We have direct input to advise on what is best so that ships can be brought into and exit from the dock safely and efficiently.” Discussing how BC Coastal Pilots serve the public, Captain Wilson said, “There is always a tension when planning for developing commercial enterprises — dock facilities are no exception. There can be a high priority given to cutting costs as much as possible and developing an organization that has low operating costs. Being independent participants in this process, with recognized expertise and an appreciation of what can go wrong, BC pilots provide a public service towards assuring that new facilities are designed safely as well as efficiently. In addition, pilots serve to prevent major environmental calamity from occurring through their professional stewardship of deep-sea vessels in BC waters.”

Maritime transportation in BC is currently experiencing socio-industrial revolution resulting from highly competitive global forces that demand right of way to provincial waterways and supporting infrastructure. Increasingly larger cargo ships are calling at BC ports in support of this trade. The waterways remain the same; their function in land use and as major transportation corridors has to change in order to accommodate these new trends in global trade. At the forefront on these changes, BC pilots have to stay current and be prepared for emerging ship design. To do this, they apply the skills and core knowledge acquired over a lifetime of experience and inherited from past generations of BC piloting pioneers. 

Tim Lynch is a public policy analyst living in Steveston. Other marine and fishing policy articles can be read at www.infolyne.ca/bcfishpolicy.html. Send comments to tim@infolyne.ca.

For Information

Pacific Pilotage Authority website:
www.ppa.gc.ca

British Columbia Coast Pilots Ltd. website:
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