



# PACIFIC MARITIME

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## WEST COAST PILOTS

Bay Area Ports:  
Diversity and  
Cooperation

NEW TOWING  
WINCH DESIGN

# WEST COAST PILOTS: NEW SHIPS, OLD CHALLENGES

By Kathy A. Smith

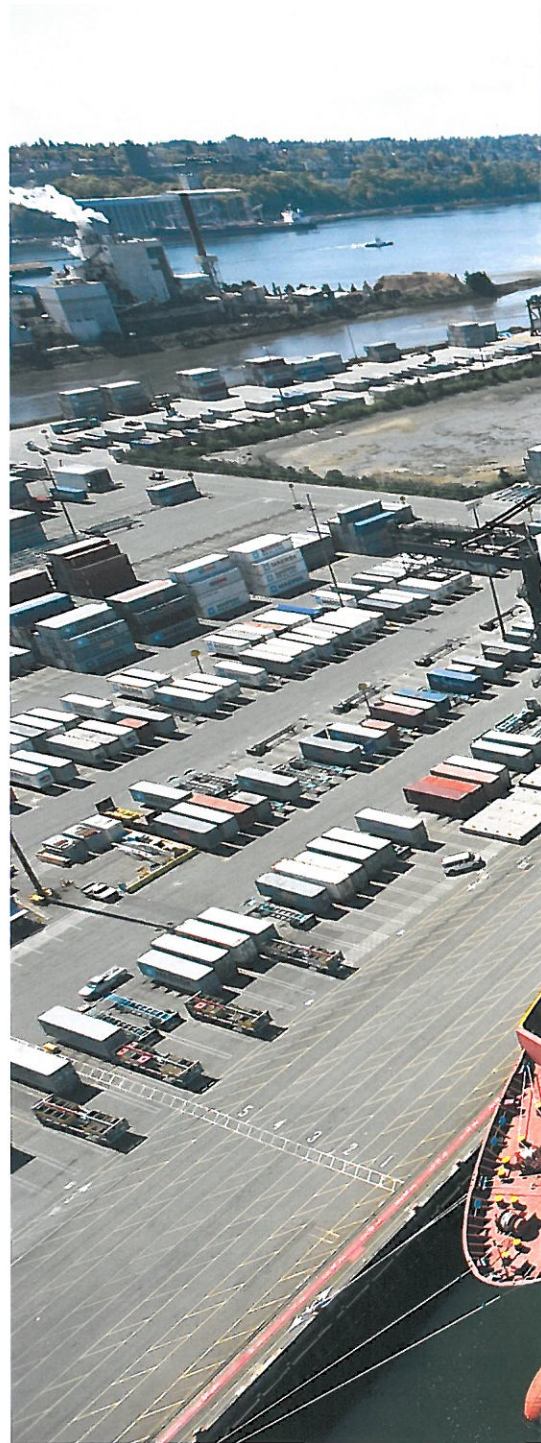
Pilots have been shepherding vessels in and out of harbors for centuries, but overall the job hasn't changed much. Hazards that have existed for millennia are still around. Most still have to face the unpredictability of an arduous climb up and down the ubiquitous pilot ladder, which is never an easy feat, whether in calm waters or rolling seas. And even with today's tough rules on rest, these expert navigators must keep their wits about them, despite the advent of technological advances designed to make their job easier.

Fog can be a huge menace when San Francisco Bar Pilots are at work handling all manner of vessels like large yachts, small bulkers and large tankers. Imagine taking a 1,200-foot containership to the Port of Oakland, where the turning basin is just 1,500 feet in diameter. Or to the Port of Redwood City, where these pilots are expected to expertly maneuver 750- and 800-foot ships in a 900-foot turning basin.

In fact, becoming a pilot is a Herculean effort in itself. Only master mariners can qualify to be pilots – the journey to master, is, in itself, a multi-year voyage. So if one wants to try out for the San Francisco Bar pilots, their passage begins by taking an initial exam given by the State of California. Master mariners need at least one year deep-sea command time with an unlimited master's license or two years of command time. They must also hold a 1,600-ton master's license while in command of a towboat that moves barges or vessels, either at sea or in inland waters.

Step two involves simulation training where these mariners will perform live-action ship-handling tasks with state-mandated evaluators assessing their performance. If the candidate is successful here as well, he or she will be ranked and begin to be called on as the state requires pilots and will observe senior pilots before taking the US Coast Guard pilotage exam.

"You get a piece of paper with the coastline and the bridges on it, and you fill in everything," says Capt. Raymond Ridens, a 24-year hawespiper who has





In the sometimes-congested waterways of the Pacific Northwest, Puget Sound Pilots are responsible for diverse vessels including containerships, tankers, articulated oil carriers, car carriers and cruise ships. Photo courtesy of the Puget Sound Pilots.



BC Coast pilots have let go of tradition and adopted helicopters for what has proven to be a safer, more cost-effective pilot transfer. Photo courtesy of the BC Coast Pilots.

been a San Francisco Bar Pilot for the last eight years. "You have to fill in all the underwater obstructions, all the routes, depths, and current flows in the Bay from memory. And for us in San Francisco, there are 15 different areas you have to draw and write. This is typically 10-12 pages of writing, and you repeat that 15 times."

Once the candidate receives their federal endorsement, he can begin driving ships under the observation of senior pilots. And after a period of about one to three years (average 18 months), as a candidate progresses through about 1,000 jobs, he'll be recommended to the State for licensure as a first-class pilot on San Francisco Bay.

SF Pilots, like most pilot organizations, attend a 6-day manned model training course given by the Grenoble Ship Handling School at Port Revel in Grenoble, France every five years, in addition to a 5-day training course at a training

institute (also at a 5-year interval) which includes classroom work for Bridge Resource Management, simulation training, first aid, CPR, and ECDIS, etc.

The schedule for these Californian navigators is seven days on, seven days off. Working hours are long; even though a typical duty day is on average about eight hours, 12-hour shifts occur occasionally. While the pilots are expected to have 12 hours rest between jobs, they can still be called out on special assignment which is reported to the State via the monthly pilot commissioners meeting.

And there are the dangers of the ladder. "When I joined in 2005," says Capt. Ridens, "a pilot was disembarking and he got his foot crushed and he's on a cane now. I've seen pilots go into the water. It happens more than people realize."

In addition to getting on and off ships, weather, navigation and other challenges abound. The super-sizing of vessels, for

instance. "Some of the ULCCs are so tall, they're getting close to the bottom of the Bay Bridge," adds Capt. Ridens. "But they can't be so deep that they can't get over the shoal. Those big ships pose both air draft and water draft issues."

These larger ships also require an additional pilot who comes aboard inside the Bay with stand-alone navigational equipment for gathering ship position and AIS data (Portable Pilot Units). This gives sub-meter accuracy and keeps the vessel at center at all times. The data helps the operational pilot do his job while the other is also monitoring tugboats, traffic, etc. "Even though the captain is present and mates at both ends, the two pilots know how to work together so there is no communication mishap."

In Western Canada, BC Coast Pilots have the responsibility of piloting foreign vessels on the 15,000 miles of BC coastline, from the Southern Canadian border to Alaska. But there are a number of inherent dangers here, too. Among several tricky waterways to navigate is the 3.1-mile portion of the Discovery Passage known as Seymour Narrows. Its narrow channel with 16 knots of tide is particularly treacherous, even in good weather. Specific pilotage guidelines have been developed for this region, but one can only imagine how difficult it must be to take a mega cruise ship through this very demanding transit.

Much like other pilot organizations, BC Coast Pilots go through a rigorous process to become licensed. After a candidate has acquired sea time as master and is confident with extensive local knowledge of all BC coast waterways, he sits a written and oral exam assessed by the industry authority and BC Coast pilots. The journey to an unrestricted pilot license will take seven years and involves the manned model and simulation training, hands-on apprenticeship under the guidance of senior pilots, as well as being continually assessed by the Pilot Training and Examination Committee.

But when it comes to boarding and de-boarding ships, this BC group has decided to let go of tradition and adopt



Columbia River Pilot, Capt. Stu Richard, climbs the pilot ladder to board an inbound bulk carrier. Photo courtesy of the Columbia River Pilots.

what has proven to be a safer, cost-effective pilot transfer. "Using helicopters was originally proposed for the first arrivals of energy ships onto our coast but has since been expanded to the west coast of Vancouver Island, and it's looking now that it will move into the Southern Gulf," says Captain Roy Haakonson, BC Coast Pilots Vice President. "Besides fatalities, another consequence to using ladders has been early medical retirement due to serious and ongoing disabilities. The pilots work closely with Pacific Pilotage Authority to mitigate this risk."

With so much open ocean in their midst, BC Coast Pilots are no strangers to large ships. Some of the biggest vessels transiting BC waters include 10,000 TEU containerships; up to 350 meters long and 50 meters wide. "We have a large toolkit that includes the newest-designed tugs, we're trained in the newest escort maneuvers, and we use simulation and live ship trials to mitigate unexpected challenges in handling future large vessels to our coast," adds Capt. Haakonson.

With all the technology at their fingertips, Capt. Haakonson says there is a problematic situation developing in the training realm regarding the changeover to using e-nav officers. "If this growing phenomenon continues, it would create a control system with little human interface, which would lead to an e-nav officer with little or no understanding of pilotage duties," he says. "But pilots are committed to the art of pilotage and are safeguard-

wind characteristics and other scenarios, modeling different ships alongside at various docks they sail by."

Whether navigating big or small ships, having to dance around ferry and recreational boater traffic is no easy task, particularly while gillnet season is in full swing. And the ladder is also a distressing challenge here. "Recently, a 12-pound magnet that was securing the pilot ladder to the side of a tanker, popped off and hit the pilot on the head,

on Columbia River tugs or have completed the Oregon Board of Maritime Pilots (OBMP) apprenticeship program. The entry and training requirements are set by the OBMP and the training program is two and a half years long. Trainees also attend classroom, simulator and scaled manned model training.

After an initial nine-month period, a pilot is issued a limited license and begins doing his or her own work on smaller vessels, while continuing to also perform training assignments with senior pilots. There are three grades of limited licenses which increase with vessel size. At the end of two and a half years, an unlimited license is issued by the OBMP. "All pilots must also hold a federal First Class Pilot Endorsement for the Columbia/Willamette pilotage grounds," says Captain Anne L. McIntyre, Vice President.

The group of 45 pilots navigate ships to all ports upriver from Astoria to Longview, St Helens, Kalama, Portland and Vancouver. The Columbia and Willamette Rivers Pilotage is a 600-foot wide, 85-mile narrow channel, however, mega ships do not call here due to the 43ft. draft restriction.

Still, some of the challenges faced by these busy river pilots are limited under keel clearance and shifting shoals, manoeuvring vessels in close proximity while underway, docking and anchoring, restricted visibility and the scope of expertise required to serve five different ports.

The use of technology like Portable Pilot Units is a boon. "We view new technology as an aid to what already exists," Capt. McIntyre explains. "The most important things are being able to pilot visually and pilot by radar. Then you layer the aids on top of that. AIS and Portable Pilot Units have significantly helped with traffic management."

As long as ships transit the world's ocean, the skills and experience of these seasoned, tenacious mariners will be required, despite the inherent dangers of the job. Even as 21st century vessel and technologies evolve to enhance the world of piloting, most pilots would agree that 'eyes out the window' is still the best defense. **PMM**

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ing against any one reliance on any one aid. The BC Coast Pilots are committed to a safe and effective pilotage service."

Containerships, tankers and articulated oil barges largely dominate much of the work of Puget Sound Pilots. But they also handle diverse ships such as car carriers and cruise ships on the waterways between the Canadian border and Olympia.

These pilots work on a rotation of 15 days on, 13 days off and things can get interesting as the waterways where large containerships come into harbor were built for much smaller ships.

"We currently have ships that are more than 1,100-feet long by 149 feet wide coming into the Blair Waterway in Tacoma and the East Waterway in Seattle, and have tankers that are shorter but wider, and all indications are that those ships are going to continue to get larger," says Walter Tabler, Executive Director of the Puget Sound Pilots. "We're working now to get ready for 13,000 TEU ships in the Blair Waterway in Tacoma, and we've had an extensive number of sessions in the simulator, simulating different load and

causing severe injury," reports Tabler.

The 54 Puget Sound Pilots who are licensed by the State of Washington carry out approximately 7,800 assignments a year. They are licensed after a series of examinations and an extensive training regime. "Depending upon an applicant's experience, they will be given a training program that could include hundreds of trips in various waterways in different types of ships," explains Tabler. "It's not until a pilot successfully completes five full years of piloting that he or she is fully authorized to operate any ship that comes into Puget Sound."

Foreign ships' crews pose their own challenges as language can be a barrier despite English being the default dialect. "Problems can arise if something goes wrong," says Tabler. "There could be two or three different languages being used aboard and if something goes wrong, the crew will have a tendency to speak in their native tongue which is likely not the pilot's."

Prior to entering the Columbia River Pilot training program, candidates must have significant experience