Casualties: Watertight doors, stability cited in fatal Alaska sinking

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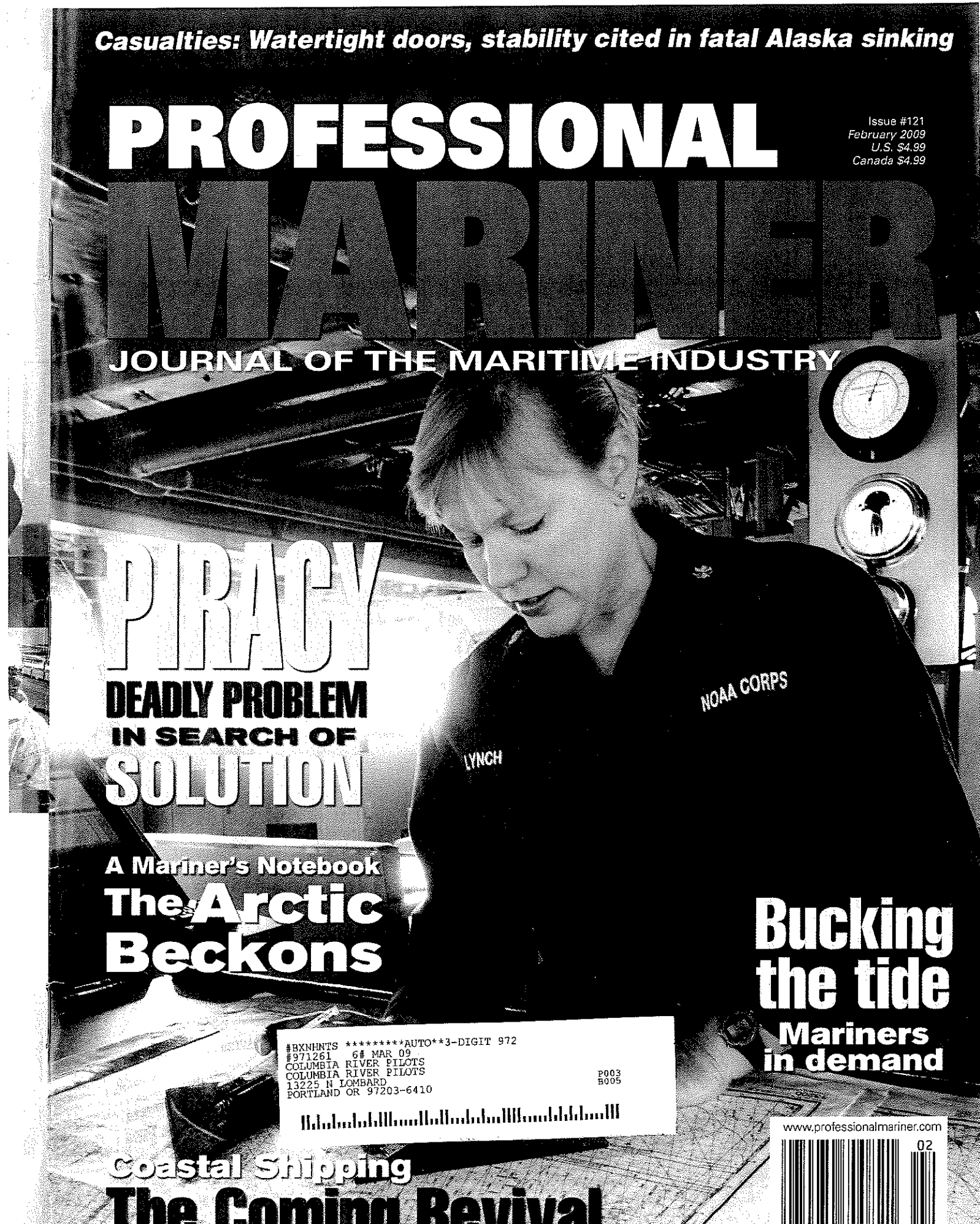

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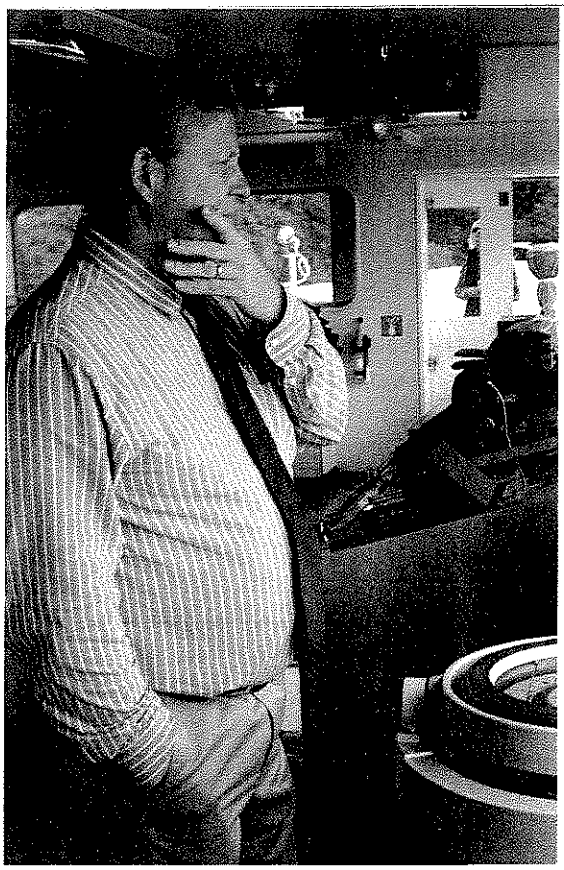
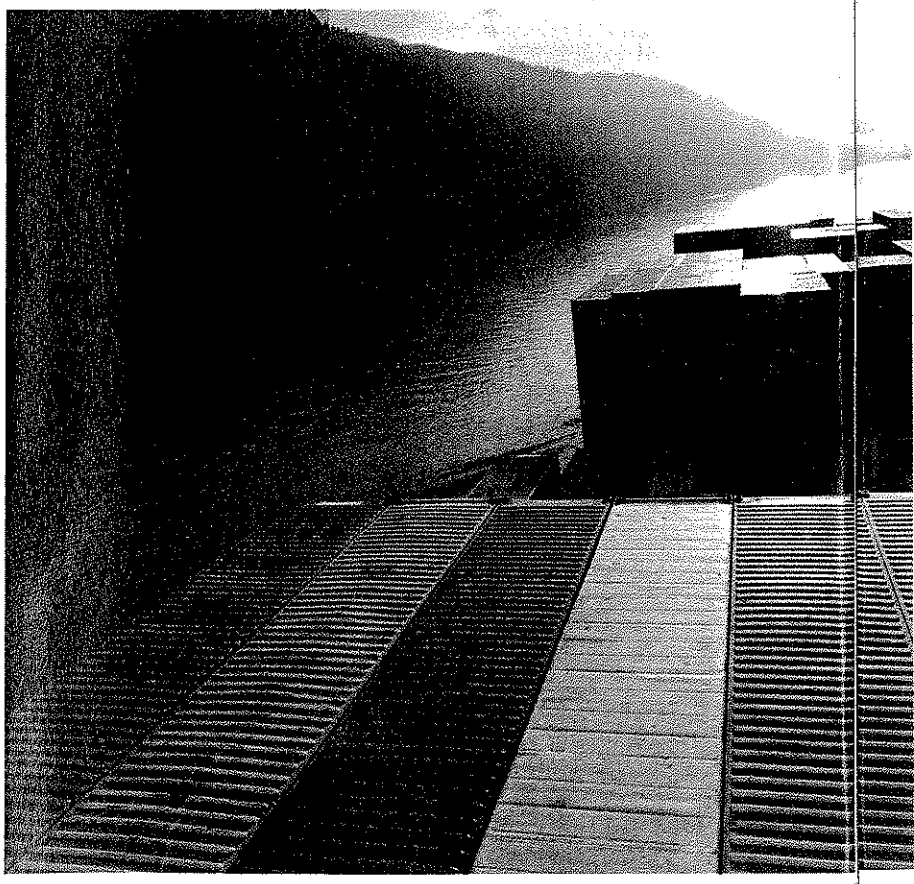


Columbia River: riding the high water

Story and photos by Alan Haig-Brown



Above, Columbia River pilot Capt. Steve Dobbins contemplates the river from the bridge of *Cosco Dalian*. To navigate the river safely, the pilots take advantage of the tides to allow vessels drawing more than 36 feet to ascend the 75-mile-long, 40-foot-deep shipping channel.

An obvious challenge for most river pilots is draft. When there is more ship than water, the resulting reality is neither negotiable nor desirable. A ship that draws 40 feet of water cannot enter a river that is maintained to a 40-foot depth, unless it does so with the aid of the tide.

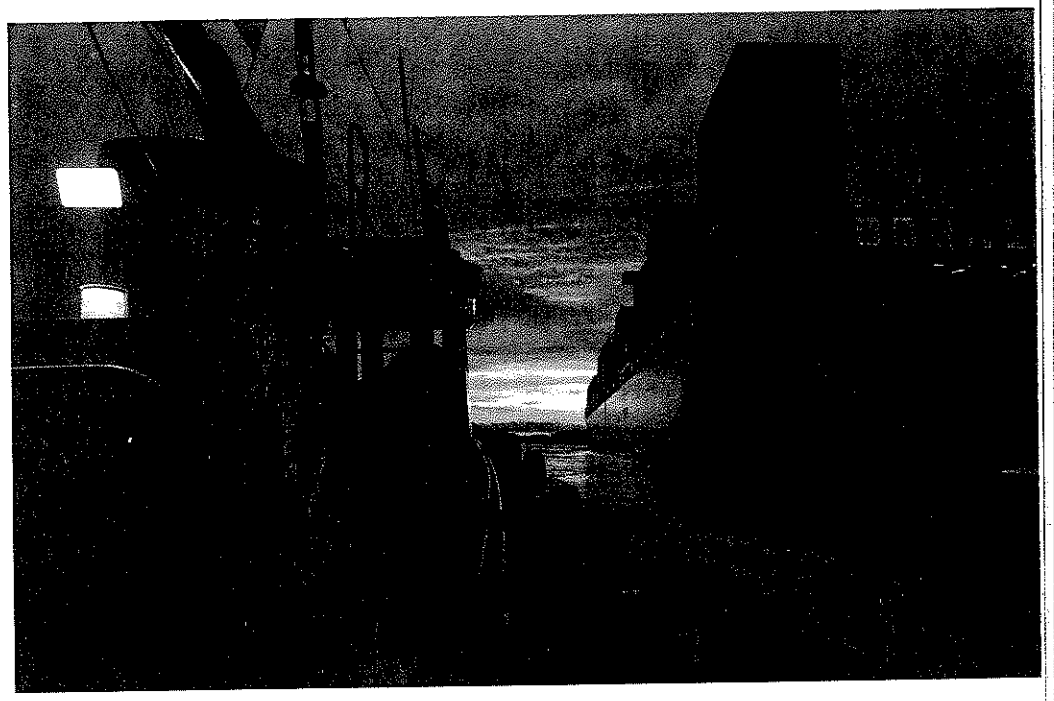
The Columbia River Pilots understand this and regularly move deep-draft vessels with a high degree of safety along a 75-mile-long, 600-foot-wide channel. In late August 2008, Capt. Steve Dobbins took a break from his office responsibilities as vice president of the 46-member pilots' association to pilot the three-year-old 915-foot Chinese containership *Cosco Dalian* from Astoria to Portland, Ore. The job had actually been assigned to Capt. Anne McIntyre, who had brought a ship downriver a day earlier, but she would now ride along to explain more of the river pilotage to this writer. While not fully loaded to her 5,816-TEU capacity, *Cosco Dalian* was drawing enough water to put her just over 36 feet, the draft at which the pilots' regulations recommend that vessels enter the river near high water.

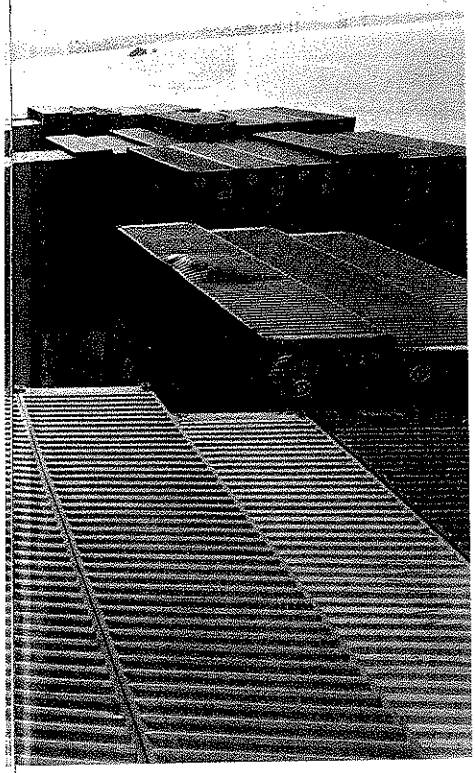
Ships entering the Columbia River pick up a Columbia River Bar Pilot at the sea buoy outside the river bar. The bar pilot brings them in over the bar for the first 17 miles or so to Astoria, where a Columbia River Pilot relieves them.

The venerable pilot boat *Arrow No. 2*, with Capt. John Ivanoff at the helm, would be making the pilot exchanges. Ivanoff would be busy putting river pilots onto *Dalian* and a second ship, *Hawke Bay*, that was just a couple of miles behind. At the same time, he

would be taking off their bar pilots. He would then have to reverse this procedure to take a river pilot off a tug coming downriver and bound for sea, while he put one of the two bar pilots onto the tug to take it out over the bar.

By 0635 river pilot Dobbins was on the bridge of *Dalian* going through the hand-over procedures with the bar pilot while the pilot boat waited alongside.





It was one and a half hours before a predicted 5.7-foot high water and the ship's master, Capt. Chen Lei Hui, reported that *Dalian* was riding on a nearly even keel and drawing 36.09 feet aft and 36.01 feet forward. Dobbins checked over a printout that he had brought with him. Prepared by the Northwest River Forecast Center in conjunction with the Port of Portland and the river pilots, the sheet shows the high water times and heights at seven stations from Astoria to Portland. By drawing a line diagonally across the page from his 0630 Astoria departure to his projected 1300 arrival at Portland, Dobbins could see how much water over the zero tidal datum he would have at each point as he progressed up river.

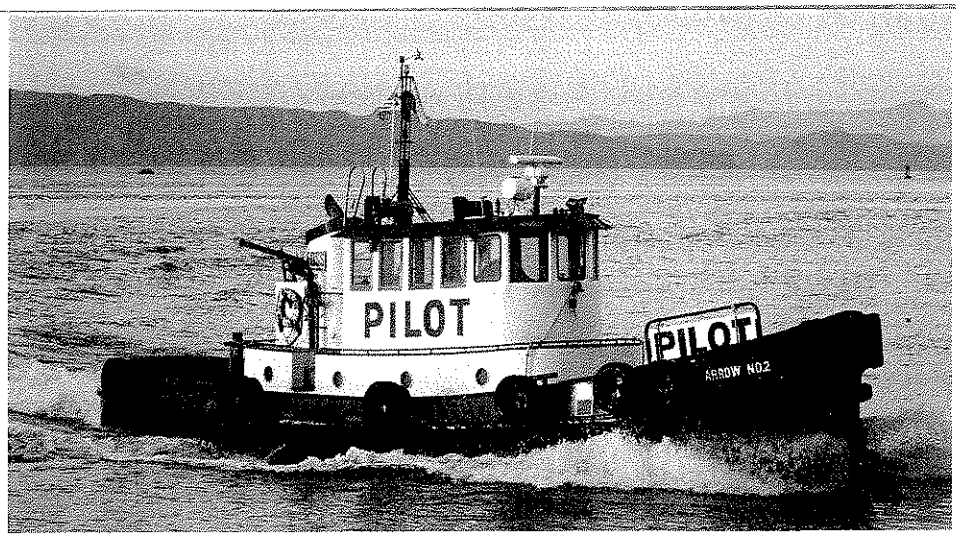
"When an inbound ship has a draft greater than 36 feet, we like to bring them in on the tide, as they handle better. For outbound vessels, we plan for a minimum under-keel clearance of two feet," Dobbins explained, as he took the ship into the lower part of the river at 50 rpm and doing 14.6 knots. The ship's MAN B&W main engine produces 48,620-kW (65,200-hp) at 89 rpm and a 24- to 27-knot sea speed but is operated at 50 rpm and lower for maneuvering.

At 0725 and in a part of the channel that had Dobbins only 600 feet off the Washington shore, he called for a reduction to 45 rpm.

From the time that he checked the computer screen at the Astoria pilot's office, Dobbins knew what traffic was on the whole of the Columbia River from Portland to the sea buoy. This is thanks to a Vessel Traffic Information System (VTIS) that, McIntyre explained, takes the AIS signals from vessels and rebroadcasts them to the ships from a mountain top antenna that effectively allows vessels to see around the corner. This overcomes the line-of-sight restrictions of normal ship-to-ship AIS communications. A second antenna is being added to a tower on a mountain north of Astoria to allow the system to show vessels when they are still well out to sea.

The Columbia River Pilots use a laptop computer program, TransView 32, that employs data

Above, the pilot boat *Arrow No. 2*, with Capt. John Ivanoff at the helm, comes alongside *Cosco Dalian*, near Astoria, Ore., where two pilots would go onboard to guide the ship to Portland. Left, the view of the river from the bridge of the containership as it makes its way upriver.



Above, the venerable pilot boat *Arrow No. 2*. When meeting inbound ships, the boat puts river pilots up on the ships while taking bar pilots off.

from the AIS to predict when and where the vessels will meet, so that, if necessary, speeds can be adjusted to optimize the safety margins of encounters. TV32 is a unique program in that, unlike ARPA and other navigational software, it takes into account all the turns in the river when calculating the meeting point.

The TransView 32 program is operated on the pilot's laptop and plugged into the ship's pilot plug to receive the ship's AIS data. Real time navigational information and meeting points for all AIS equipped vessels are then displayed. Another important feature of the program is that the most recent channel depths can be easily downloaded by pilots over the Internet.

At 0753 *Dalian* was overtaking the tug *Halle Foss* with a wood chip scow from Aberdeen, Wash., in tow. "He is a local," explained Dobbins as the VTIS showed the tug moving out of the channel, "so he knows that at this point is it safe for him to move out of the channel, giving us a little more deep water to get past him."

At 0900 the ship passed a stretch of beach on the Washington shore at Waterford with fishermen and kids playing on a sloping beach where the ship's wash can run up quite a distance. The stretch reminded Dobbins of his log-towing days on the tugs when he worked to find the slack water when towing upriver along this stretch. In the past, all of the river pilots came up from the ranks of river tug captains and so brought extensive local knowledge with them when they entered the pilot training program.

Some years ago, the state regulated pilotage was asked to implement an affirmative action program as they had no women in their ranks. Since there were no women river tug captains to bring into the river pilots, this required some innovation. The solution was to bring in McIntyre, who had graduated from California Maritime in 1988 and had been in various positions with Chevron for eight years.

In lieu of the river tug experience, she was required to do an apprenticeship that included 750 river transits and 250 harbor moves before entering the regular training. In that time, about four years, she received only a stipend. About six months after beginning the traditional training program, she got her C license for vessels under 550 feet. As with other pilots, after completing a specified number of jobs at that level, she moved to a B license, under 700 feet, then an A license, vessels under 800 feet. These limited licenses did not allow her to pilot tankers or vessels over 38 feet of draft.

On top of the initial apprenticeship, the regular training program took another two years. She then received her unlimited license. A second woman candidate is currently in the apprenticeship program. "We have been really lucky with the high quality of the candidates that we have been able to attract under this program," explained Dobbins.

At the same time as Dobbins was taking care not to wash the fishermen off the sloping beach at Wauna, he was meeting the downbound ship *Yvonne* drawing 39 feet of water. His River Forecast sheet showed that he had 5.28 feet of water from the peak high water in addition to the regular channel depth to give both ships a comfortable margin of water under their keels.

An hour and a half later, after meeting the downbound *Spring Lyra*, the Longview Bridge came into sight. The bridge is 45 miles from Astoria and about 30 miles from Portland. Below the bridge, two bulkers lay at anchor while two more ships were alongside piers — one above and one below the bridge on the left, or Washington shore.

Looking through binoculars, McIntyre noted that the ship above the bridge appeared to be slacking off its mooring lines in order to change position on the dock. That, together with tugs working barges on the right, or Oregon shore, prompted Dobbin to take off speed by "flagging the rudder." This involved dropping the rpm and directing the helmsman to swing the rudder first 15° or 20° to port and then, as soon as the head started to swing, an equal amount to starboard. Repeating this several times took the ship's speed from 13 knots down to 10

knots in less than 10 minutes.

"I could have done it more quickly," said Dobbins, as he continued to flag the rudder until the ship was down to 7 knots. He had taken the last 2.2 knots of way off the big ship in about three ship lengths to avoid pulling the slack-lined ships off their docks.

In spite of the fact that the high water was following us upriver and continued to maintain a healthy depth under the ship's keel, the navigation buoys and wing dams along the way showed that there was a significant downstream current.

"It's unusual to see that much current this time of year," observed Dobbins, "but I suppose that shot of rain that we had could have caused it."

But it is always the under-keel water more than the current that concerns the river pilots. As *Dalian* moved into a narrow part of the channel, Dobbins explained that the kind of bank effect that can suck a ship into the shallow side of a dredged channel is not a great concern on a containership like *Cosco Dalian* with its finer hull and relatively low block coefficient, as opposed to a bulker with its massive underwater shape and broader beam at the chine. But in either case, an extra 5 or 6 feet of tidal water under the keel can make the ship more responsive and easier to handle.

It is these aspects that the Columbia River pilots take into account on the river with the additional caution, especially above Longview, for the recreational users.

"This is the slow part of the river," Dobbins explained as *Dalian* moved along at only 8.5 knots. "There are more people and more docks."

On this late August morning, the activity included sailboats, anchored salmon fishing boats, beach fishermen, families swimming and even horseback riders.

The slow speed also provides what river pilots call "keeping something in your hip pocket."

"Your turn power is better if your speed is less than the rpm would indicate," he said. "The reverse is also true; when dropping rpm and speed, the ship will make a wider turn."

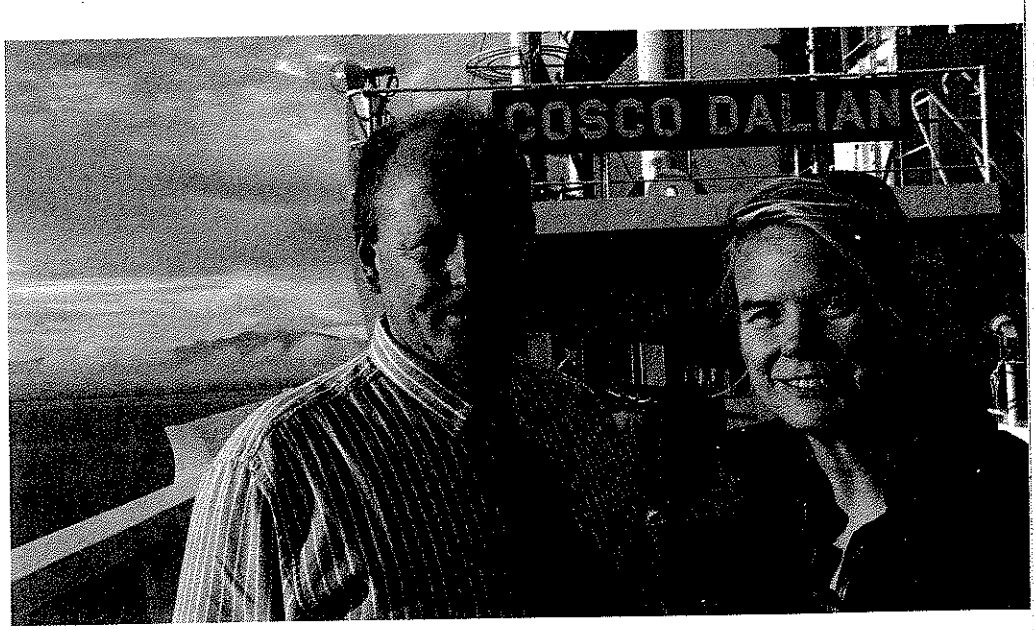
So by keeping his speed down, Dobbin retained the option of increasing rpm should he need to make a more rapid maneuver.

By 1155 *Cosco Dalian* was abeam Warrior Rock and River Mile 85 above the sea buoy and 73 miles up from Astoria, which is at Mile 17. The River Forecast sheet showed that the high tide was holding 3 feet of extra water under the keel, compared with the 3.29 feet of tide that was at Astoria six hours earlier.

An hour later, the ship entered Morgan's Turn and the container docks at the Port of Portland came into view just above the confluence of the Columbia with the Willamette River. The pusher tug *P.J. Brix* idled off the point and her captain, Mike Rayburn, came on the VHF to confirm a communication channel: "I'll get you on six, Steve."

There is an easy familiarity between the pilots and the tugs that has evolved from pilots like Dobbins, who worked several years on *P.J. Brix* before becoming a pilot. But the trust and respect between the tugs and pilots is no less for the new generation of pilots like McIntyre who brought to the river her years of experience on deep-sea vessels and then earned her entry to the pilotage training by climbing aboard a thousand ships.

Now, she and Dobbins talked easily of the routine chore of docking a 915-foot containership. With all the lines up and secure by 1335, the two pilots walked down the gangway to waiting cars. Dobbins would be back in the office the next day catching up on his responsibilities as vice president of the pilots group and McIntyre would be off to attend a meeting of the Oregon Board of Maritime Pilots as a state pilot commissioner. •



Below, river pilots Steve Dobbins and Anne McIntyre. Dobbins is vice president of the 46-member group. McIntyre, a California Maritime grad who previously worked for Chevron for eight years, is the first woman to become a Columbia River pilot.