

Captain Joseph Semler
Puget Sound Pilots
2003 Western Ave
Suite 200
Seattle, WA 98121

17 June 2022

Dear Captain Semler,

Thank you for the opportunity to work with the Puget Sound Pilots for creating a plan to refit the Pilot Boat *Juan De Fuca* with the objective of extending her service life for another estimated twenty years while continuing the high level of safety and reliability that were central to her original design.

As you know, I was co-designer of the *Juan de Fuca* and *Puget Sound*, having collaborated with the late Ed Hagemann of Hagemarine. These two vessels were the first American pilot boats to use waterjet propulsion, which is now widely used and preferred by pilot associations because of the safety and maneuverability afforded by jets. These two vessels were also ahead of their time for being of composite construction, finished to a high standard, and for emphasizing crew and passenger comfort through low noise and vibration levels, high quality seating, heated windows, climate control, and excellent visibility. The hull design was tank-tested for seakeeping and resistance, as well as for stability alongside a moving ship, and the design features passive roll damping tanks and damping surfaces that greatly reduce pitch and roll motions at rest and during rescue operations. The MOB rescue system remains the best in the business and sets the bar for other pilot associations. The composite hull and deckhouse by Nordlund Boat Company of Tacoma are in like-new condition. The exterior finishes have held up well, thanks to the absence of corrosion, high quality paint job, and care they receive.

Juan De Fuca is still a modern and capable vessel with features not found even in new builds. It is uniquely well-suited for the service it provides. Five years ago I designed a pair of new Pilot Boats for Long Beach that drew heavily on the successes of the *Juan De Fuca* and *Puget Sound*.

While the structure and basic design of *Juan De Fuca* remain current, much of the equipment is showing signs of wear and deterioration after 22 years of service, and technology has improved in several areas, most notably LED lighting and frameless Direct-glaze windows. As noted in a Jan 30, 2019 marine survey by Thomas D. Laing of Commercial Marine Services, Inc., the general condition of the vessel “shows evidence of superior maintenance and continuous upgrading and is considered to be in very good condition.” The purpose of the attached study is to identify the tasks that will bring the vessel up to “new” standards and extend the service life for another 20 years or as long as the engines are supported.

The recommendations I compiled came from the research done by Captain Joe Semler, two all-day inspections with the Lead and Assistant Boatmen and their deckhands who operate and maintain the boat, and discussion with representatives of Nordlund Boat Company, including Steve Moore who designed and oversaw installation of the original electrical system. I had the good fortune to participate in the conception and development of the design from the beginning, and I personally oversaw the construction at Nordlund Boat Company while reporting progress to the Pilot Association. At the request of Puget Sound Pilots I have been involved in several subsequent studies after the vessels went into service, and I have made dozens of trips on the

boats in all kinds of weather. The pilots and boatmen like these boats because they are comfortable, safe, and reliable, and that is a welcome endorsement to our efforts to re-fit them for more service.

Nordlund Boat Company was sold to Captain Jason Machovsky, Annapolis graduate and experienced captain with over 300,000 miles of experience in Nordlund-built yachts alone. Under his leadership, Nordlund Boat Company has continued to thrive and many of the people who built the Puget Sound Pilot boats are still with the company. The company is specializing in refits, reconfiguring the yard and growing their team of qualified craftsmen. They also have the man-hour and cost records for the two PSP-inspired Pilot Boats of my design that they recently built for Jacobsen Pilot Service of Long Beach California. I should also note that I have done the engineering for all of the new Nordlund builds since the pilot boats they built for Puget Sound Pilots. I am familiar with the processes and practices needed to bring the Juan De Fuca up to the desired standard and I have asked Nordlund Boat Company to estimate the cost of the proposed work, knowing that it will match or exceed the original work and reflect the latest practices.

Please see the attached recommendations and cost estimate summarizing our efforts.

Respectfully Submitted,

Tim Nolan
Naval Architect, PE



17 JUNE 2022