State-of-the-Art Seaspan Resolution Welcomed Home

Seaspan's newest and most powerful tractor tug is now ready to enter service. The Seaspan Resolution has completed trials and been delivered to Seaspan, by builder JM Martinac Shipbuilding of Tacoma Washington, six weeks ahead of its scheduled delivery.

The new tug was welcomed home on June 30 with a commissioning party. Mona Hendriksen sponsored the vessel.

Once on station, this new 6000 HP tractor / escort tug will become the keystone of Seaspan's ship assist tug fleet partnering with the Seaspan Discovery and will undoubtedly become the escort tug of choice in the port.

Seaspan's new tug is the third of its class built by Martinac shipbuilding with the first two vessels delivered last year, being operated by Foss in Puget Sound and San Francisco Bay. The design is by local Vancouver Naval Architecture firm, Robert Allan Ltd. who were also the designers of the Cates 2400 series tractors and the Seaspan Hawk and Seaspan Falcon. With the delivery of the Resolution into Seaspan's fleet the company can once again be counted amongst the operators of state of the art ship docking tractor vessels, just as they have always been starting with the Cates 2 and Seaspan Discovery way back in the early 1980's.

Ship assist tug design has, over the life span of tugs like the Seaspan Discovery, gone through several evolutionary cycles. In 1982, when they were new designs the Seaspan Discovery and the smaller Cates 2 represented a bold new approach to the traditional ship docking tug and were in themselves an evolution of the very first reverse tractor tugs from Japan. In turn, these two designs were the raw material for the design amalgamation that then became the Seaspan Hawk and Seaspan Falcon ten years later in 1993. Since '93

when the Hawk and Falcon were built, there has been an explosion of development and innovation in the design of this type of tug, now generally called an ASD (azmuthing stern drive) tractor, and over time there has been a steady increase in their size and capability to match the growth in the size of the vessels they serve. Tractor tugs are now considered the standard platform for ship assist work both in harbour and in escort, and in the last five years there has been large numbers of these vessels built and ordered as replacements for the aging, outdated, harbour tug fleets worldwide.

An additional capability now purposely built into modern tractor tugs is the ability to produce dynamic assist forces, in excess of its rated static bollard pull, to a vessel underway. Tugs specifically designed to do this are called escort tugs and increasingly they are becoming a common part of ship assist services in ports and constricted waterways. To do this, new tractor designs like the Seaspan Resolution are fitted with large fixed skeg keels opposite from the propulsors that allow the hull to generate dynamic lift while tethered to another ship that is underway. This is done almost exactly in the same way a water skier would boost their speed, by whipping outside the towboats wake and pulling at an angle to the relative direction. These forces can be large and so the main winch and towing gear have to be capable of anchoring those forces. In the case of Seaspan's new tug, a 250hp dynamic escort winch rated at 130 tons indirect line pull performs that job. This new winch also has a unique capability, within our fleet, in that it can operate in a render recover mode. What that means is that the winch can be set to a specific line force pull, if the pull on the line exceeds that force the winch will automatically slip, paying out line until the pull goes below the setting (render) and then winch the line back in while under tension (recover). This can be of significant benefit when operating in rougher conditions where coming up hard on the towline has done damage to both tug and assisted vessel in the past.

Purposely designed as a workhorse, the Seaspan Resolution has also been carefully designed and outfitted to be a safe and comfortable vessel for its crews with a fully functional galley and mess area on in the lower deckhouse complete with a lounge and eating area, modern flat screen TV / DVD setup that can also display information from ECIDS electronic chart plotting system. The Deckhouse features a separate

washroom/shower, first aid room and ship's office. The main diesel engines are resiliently mounted to reduce the production of structure based noise and large critical grade silencers were squeezed into the exhaust casings to reduce on deck noise created by the powerful main engines. To further isolate engine room noise from the deckhouse and wheelhouse the casings are separated from the forward spaces by a breezeway corridor athwartships on the main deck. The machinery space also is fitted with a large watertight door between the Z drive compartment and the engine room making access between the spaces easy and efficient. Both the lower deckhouse and the upper wheelhouse have independent air conditioning systems to provide a comfortable working temperature, even on the hottest of days.

On the "green" front, the Seaspan Resolution is equipped with Tier II compliant main engines and generators, and the generators are sized large and small so that in times of low electrical demand the smaller engine can be operated. A sewage treatment system is also fitted, as is an oily water separator unit. To assist in crew access and safety the vessel is equipped with bulwark gates for safer and easier boarding of the vessel with stores and supplies, and a man over board davit and recovery system, now standard on Seaspan tractor tugs, as well as life raft launching rails and a workboat. Also a first in the Seaspan fleet, the Seaspan Resolution is fitted with dual direction navigation lights so it can operate in either direction allowing the ability to tow in a winch aft configuration at night.

"A large and complicated vessel like the Seaspan Resolution does not go together without the efforts and dedication of a large number of people both at the shipyard and from the owner and designer," said John Fowlis, Vice President, Fleet Maintenance. "From Seaspan, the construction supervision team has included nearly everyone in the Port Engineers and Port Captains departments, but a special thanks and recognition of their efforts is due to Roger Trant, and Randy Beckler from Engineering and to Captain Don Westmorland from the Port Captains Department."

"Their dedication and experience has made a huge contribution into making the Seaspan Resolution a tug worthy of being our shipdocking fleet's flagship."

What's in a Name??

The Seaspan Resolution is named after the flagship of Captain James Cook's third voyage of discovery that, in 1778, landed in Nootka Sound. On board the HMS Resolution was one of the first copies of Harrison's chronometer, which allowed the most accurate navigation and longitudal position fixing available,

making Cook's Resolution in its time as state of the art as Seaspan's new tug is today. The HMS Resolution accompanied by the HMS Discovery were chosen for these voyages because of their strong construction and sailing characteristics that make them perfect for the job assigned. Their legendary commanders and crews wrote the opening chapters of European exploration of the Pacific Northwest. It seems only fitting that Seaspan's own Discovery is now joined by a Resolution to continue such a historic pairing.

Seaspan Resolution - ASD 30/80

Length Overall	30m
Breadth max	20m
Draft max	5m
Main engines	2 x EMD 12 710 G7C
Power (BHP)	6000
Propulsors	Niigatta ZP-41
Propeller Diameter	2.7m (106")
Speed	13 Knots
Bollard Pull	82.5 Tons
Winch	Burrard Iron Works Model HJ 250 hp
Operating modes	5t /20t / 40t render/recover
Rated Dynamic pull	130 tons