



ISLAND CROWN

New Power for Classic Tug

by Alan Haig-Brown and Rob Morris

Island Tug and Barge's floating maintenance facility, located at Berry Point above Second Narrows in Burrard Inlet, operates at a continuous output that keeps pace with the company's active fleet of tugs and petroleum products barges. The shop does all the above-waterline repair and refit work to keep the fleet in top running order.

Every year or so port engineer Andy Farmer and his crew crank it up several notches on a major project. Last year it was the retrofit of the twin-screw tug **Island Monarch** with an Intercon 'C'- series barge coupler system [see "**Island Monarch: ATB Upgrade for Island Tug's Flagship**" in **Western Mariner**, October 2003] and the preparation of the newly-delivered oil barge **Island Trader** for service. The current high-priority project is the twin-screw tug **Island Scout** which was brought to Berry Point as a hull with deck, shaft tubes and nozzles from a Chinese shipyard [see "In the Shipyards" in **WM**, August 2004 - Ed.].

Prior to focussing on the **Island Scout**, however, the Berry Point crew completed an engine change-out that's a first for the company. In its 30th year of service the classic, raised-forecastle tug **Island Crown** has been refitted with a pair of Cummins KTA38 Mo diesels. The 78' x 24' design from Robert Allan Ltd. was launched as the **Gulf Julia** for Gulf of Georgia Towing in 1974 by Vito Steel Boat and Barge, became the **Seaspan Defender** in 1977 and was acquired by Island Tug and Barge in 1997.

The well-designed and built tug has more than earned her keep towing along the Pacific coast and has been working successfully in the barge-pushing mode for Island Tug. So Capt. Bob Shields and Capt. Jack Davies, partners in the company, felt secure in doing a scheduled re-powering to extend her life. The **Island Crown** is the fourth BC tug to receive the Cummins KTA38 Mo engines after Seaspan's two new, twin screw tugs [launched in 2003; see "**Seaspan**

*Above: The **Island Crown** ex-**Gulf Julia** after the tug's repowering with Cummins KTA 38 Mo main engines in July, 2004.*

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*Island Tug and Barge's maintenance crew lowers one the new Cummins diesels through a hatch in the top of the **Island Crown's** fiddle. The engines, lifted with a specially-designed jig, were stood on their head to fit through the hatch with mere inches to spare.*

Tempest & Seaspan Venture: New River-class Yarding Tugs" in WM, July 2003 - Ed.) and the re-power of the **Seaspan Cavalier** in late 2003.

Replacing a pair of 725-hp Caterpillar D 348s that have been in **Island Crown** since its launching in 1974, the Cummins engines have been de-rated to 500 hp at 1600 rpm but are designed capable of 800 hp at 1800 rpm. The existing Twin Disc TD540 7:1 marine gears were sent out for rebuilding and reinstalled. The three-blade propellers in nozzles were kept to their original 74" x 78" dimensions.

"We had Robert Allan Ltd. do a complete engineering study for us on the re-powering and were amazed to dis-

Island Crown

cover that the propellers were an absolute perfect match for the two engine ratings," Capt. Shields explained. "We didn't do a bollard pull test but believe we are getting slightly better performance than prior to the re-power. We estimate the bollard pull at 36,500 pounds at the 500-hp rating and 57,750 pounds at 800 hp."

While the engine selection and preparation (new, heavier engine girders, Vibracon adjustable engine mounts, chock-fast mounts for the gears plus piping and electrical) was a detailed and intense process, the lowering of the two 9,000-lb engines and their gears into the tug was accomplished in a solid day's work at Berry Point with a rented crane. Andy Farmer was pleased with the installation and is looking forward to experiencing a couple of Cummins-designed options on the electronically-controlled KT38 Mo engines. The Eliminator centrifugal lube oil filtration system removes the requirement for disposable lube oil filters. The Centinel Oil Management system periodically removes a small amount of oil from the engine's crankcase and replaces it with fresh oil. The used oil is re-injected with incoming fuel to be burned during normal combustion. The systems combine to effectively eliminate oil changes and to reduce maintenance costs (such as used oil disposal) in an environmentally-friendly operating regime.

A lot has changed in engine and vessel design since the **Island Crown** was launched in 1974 but new and efficient propulsion in a proven design assures many more years of service for this BC tug. ◀

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