

"Two 12-16-18 in. ballast pumps are installed in engineroom and connected to manifold, which in turn is connected to all ballast piping in the boat. The two main feed pumps will be single 12.8 by 24 in. vertical pumps which will pump directly to the feed water heater, the latter being of the horizontal film type, with copper tubes, and capable of raising the temperature of 80,000 lbs. water per hour from 130 degrees F. to 210 degrees at delivery. The tubular hot water heater will be fitted for sanitary system of the boat, water heated by auxiliary steam after passing through the main heater.

"The main steam pipe will be of steel and will be connected by heavy forged steel flanges, expanded and rivetted to pipes. The steering engines will be of the direct acting type, both geared to cut toothed quadrant and arranged so that either can be thrown in or out of gear from the pilothouse at will. The windlass will be spur geared, 10 by 10 ft., and will be arranged with wire spools, and supplied with clutches and brakes for handling wire lines. A 12 by 12 in. cargo hoisting engine will be supplied with all necessary shafts and drums for handling cargo.

"A large party of Richelieu and Ontario Navigation Co. directors and guests went from Sarnia on the HAMONIC to witness the launching. The Managing Director, James Playfair, was called back shortly after the HAMONIC passed Sault Ste. Marie, owing to his father's fatal illness, in consequence of which the christening was performed by Mrs. E. Bristol, wife of another director, instead of by Mrs. Playfair, as at first intended. A large number of Winnipeg people were also present, having travelled by special train. After the launching, the guests were entertained at luncheon on the HAMONIC by the builders, the Western Dry Dock and Ship Building Company."

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THE FOUR-CYLINDER TRIPLE REVISITED

Of relevance to the NORONIC articles and our recent dissertation on the subject of the four-cylinder triple expansion steam engine is correspondence received from T.M.H.S. member John Henderson, of Victoria, British Columbia. John has noted that various Canadian shops built at least 247 engines of this type for installation in corvettes (or two to a ship for frigates) in the Second War. These engines were 18½, 32, 38 and 38" x 30" stroke, 2750 I.H.P. at 185 r.p.m., with a working pressure of 220 p.s.i.

Several famous west coast vessels also had four-cylinder triple expansion machinery, including the train ferry CANORA, and the passenger steamers PRINCE RUPERT, PRINCE GEORGE, PRINCESS VICTORIA, PRINCESS CHARLOTTE, PRINCESS ALICE, PRINCESS ADELAIDE, PRINCESS LOUISE and PRINCESS NORAH. John has noted that PRINCESS VICTORIA was a remarkable ship; she came from Newcastle-on-Tyne in 1902 and had two engines, each 26, 40, 43 and 43" x 33" stroke. He has never heard what her actual horsepower was, but there seemed to be no limit to her capabilities, for she could steam at 145, 155 or 160 r.p.m., burning coal and hand-fired yet! Four hours flat, Vancouver to Victoria, and she once did it in 3 hours, 48 minutes. Racing a U.S. steamer in 1906, she ran Victoria to Seattle in 3 hours, 24 minutes.

If the cranks of a four-cylinder triple were arranged at right angles, counterbalances were often fitted on the h.p. and i.p. crank throws, while the crankpins of the heavier l.p. engines were bored out hollow, all this to reduce vibration. (Strangely, the corvette engines had counterbalances on the two low pressure crank throws.) To change the crank angles and make a small alteration in the mass of the moving parts would produce an engine in which the moving parts were balanced amongst themselves, and this is what the Yarrow-Schlick-Tweedy system of engine balancing sought to effect in arranging the placement of the cylinders in a four-cylinder triple of that type. The crank angles varied with the size of engine, power, and weight of the moving parts.