

A larger, 39m Robert Allan design joined the Milford Haven operation in January. *Svitzer Kilroom* is a RAstar 3900 class tug with the same sponson design as the five smaller sister vessels, including *Svitzer Lindsway*, being built by Freire. *Svitzer Kilroom* has an ahead bollard pull of 117 tonnes maximum, 113 tonnes sustained, 113 tonnes maximum bollard pull astern, 107 tonnes sustained and a free

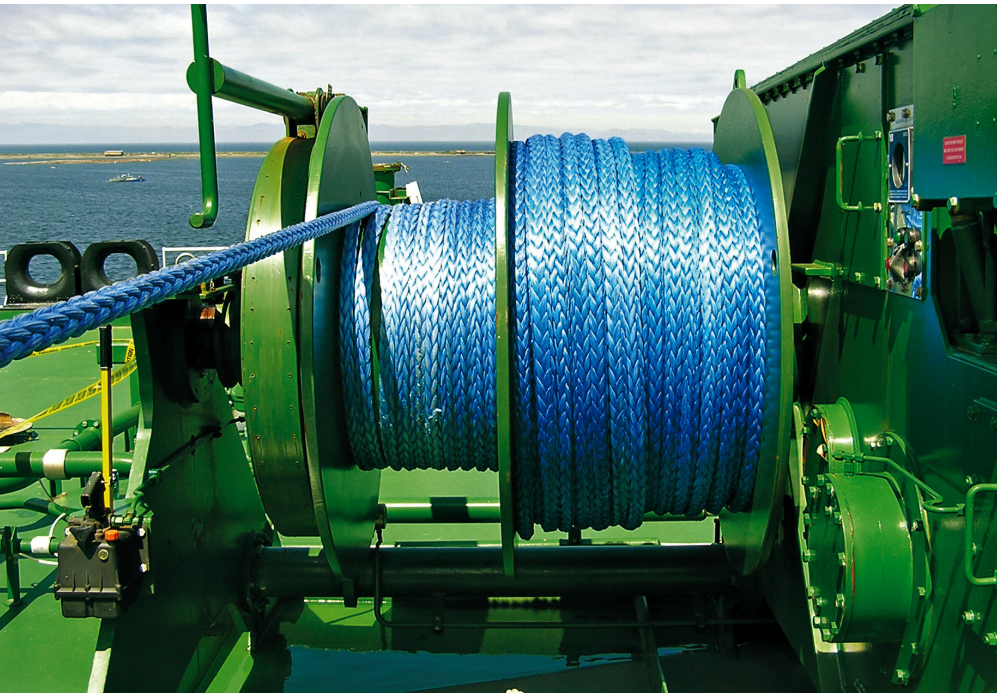
running speed of 15.7 knots.

In January this year, a Foss Maritime hybrid tug commenced operations in the Los Angeles and Long Beach ports. The hybrid is similar to its sister, Dolphin-class tugs but runs on batteries coupled to diesel generators to provide quieter, cleaner and more fuel efficient operation. The engineroom has been modified to accommodate two 670hp battery packs and

two 335 bhp (246kW) generators, and the power management system will meet the required power with the most efficient combination of batteries, generators and main engines.

The modular design allows for the upgrading of batteries and other advancements as they become available. This lengthens the lifespan of the vessel and the design can be adapted for retrofit. **TST**

## Benefits of synthetic mooring lines are asserted



*Synthetic lines are light and easy to handle, and can reduce time in port*

The weight of wire rope on a ship is burdensome for owners, operators, and crew members alike. Easily corroded by salt water, wire requires periodic lubrication to keep rust and corrosion at bay. The cost of maintenance, which includes re-lubricating, the hire of special spooling trucks and the maintenance of deck hardware abraded by the wire, is ongoing. Also, wire requires extensive manual handling, which can put crew at risk of serious injury.

Stena Bulk switched from wire rope to high-performance synthetic mooring lines when it replaced the wires on *Stena Performance* with Samson's AmSteel-Blue, which is made with Dyneema, a high-modulus polyethylene (HMPE) fibre.

AmSteel-Blue was created specifically as a replacement for wire rope. Made with Dyneema SK-75 fibre, AmSteel-Blue is a torque-free, 12-strand braided rope, which size for size is one-seventh the weight of the wire it is intended to replace. It works with existing hardware and winches in most cases and its blue colour is created by a proprietary coating that enhances wear life and snag resistance. AmSteel-Blue is ISO 14001 compliant and meets ISM and

OCIMF standards.

The installation of AmSteel-Blue on *Stena Performance* took place over four days in February last year on a voyage between St Croix and Baltimore. Before Samson staff could begin installation of the new rope, grinding, needle scaling, and refinishing were required where the wire ropes had severely abraded the chocks, fairlead rollers, and the flanges on the split-drum winches. By the time the vessel arrived in Baltimore, the hardware had been cleaned up, resurfaced and repainted, wire had been removed from the winches, and the new mooring lines installed. Also, the crew had been trained on handling the new lines, and on splicing and maintaining them.

Stena Bulk reports that the benefits of the new lines were immediate: mooring took around 30 minutes whereas before it took as long as 2.5 to 3 hours at the same port. For the crew, handling the lightweight lines was simple and safe, and after the ship was secured, there was no grease to clean off the decks and hardware. To date, more than 15 vessels in Stena Bulk's shipmanagement arm (Northern Marine) fleet have been outfitted or retrofitted with AmSteel-

Blue mooring lines.

BW Shipping manages a worldwide fleet of 53 vessels. In 2006-2007, with 15 new tankers under construction, the company decided to investigate the advantages of using lightweight, high-performance AmSteel-Blue in place of traditional wire lines.

"We were looking at the design configuration of these ships and felt that the deck structure was very crowded, to put it mildly," recalls Captain Trevor Smith, who heads up BW Shipping's in-house shipmanagement arm. "This raised concerns over the moorings, the way the winches were set up and the use of wire. So we studied the market, talked to some of the oil majors – Chevron was particularly helpful – and decided that we would outfit these ships with ultra high molecular polyester mooring ropes.

These mimic wire but are very much easier to use and handle. This translates into safety benefits and perhaps reduced time in port. The cost is around five times that of a wire but our cost-benefit analysis said there would be a long-term gain, so we invested the additional money."

According to Captain Paul S Jones, general manager of BW Shipping's marine department, the cost-benefit analysis revealed that the company could save approximately between US\$20,000 and US\$50,000 for each vessel every two years, since the synthetic mooring lines do not need refurbishing like wire does. Furthermore, because synthetic lines are lighter and easier to handle, the reduced port deployment time added up to annual savings of US\$81,000.

It was calculated that BW Shipping's overall return on investment would be reached in approximately four years – an important consideration since the life expectancy of wire is four to five years and costs associated with wire continue after the initial purchase. Although the life expectancy of synthetic mooring lines is unknown at this time, in some cases they have been in service for more than 11 years.

For Captain Jones, "all feedback to date has been very positive, and the crew can see the benefits of deploying these ropes in terms of time saved and ease of handling." **TST**