

BW SHIPPING MOORING LINES CASE STUDY

Samson AmSteel®-Blue mooring lines reduce mooring time by 50% and improve crew safety

BW Shipping replaces wire, realizes significant savings

OVERVIEW: BW Shipping manages a worldwide fleet of 53 vessels. In 2006–2007, with 15 new tankers under construction, Samson and BW Shipping investigated the safety and cost benefits of switching from traditional wire mooring lines to lightweight, high strength synthetic mooring lines. BW Shipping adopted Samson's 32-mm AmSteel®-Blue mooring lines for 11 of their new builds, which is a reflection of both the benefits of the product, which include reduced mooring times and increased safety for mooring operations, and the superior service Samson provides.

BUSINESS SITUATION: Typically, the shipyard specifies and supplies mooring hardware on new-build tankers' winches and mooring lines. While high strength, lightweight synthetic ropes have been available for more than a decade, wire has dominated the market primarily due to the low initial cost; however, there are several problems associated with the use of wire ropes for mooring operations.

The weight of wire necessitates extensive crewing for handling and securing the lines. Wire rope, easily corroded by salt water, requires lubrication to keep rust and corrosion at bay. The cost of maintenance: relubing, the hire of special spooling trucks for end-for-ending of the lines and the maintenance of deck hardware abraded by the wire is ongoing. Environmental concerns of relubing only add to the problem.

However, possibly the greatest problem associated with wire ropes is crew safety. Back injuries caused by heavy wire are common, as are severe hand and other injuries caused by broken strands. Not to mention the recoil when wire rope separates, causing injury and even death. These costs add up quickly, and while it is difficult to anticipate the cost of litigation as a result of worker injury, many companies see the benefit of reducing their exposure to expensive claims by using synthetic lines.

In order to more realistically compare the higher initial cost of high performance synthetics with wire rope, Samson put together a cost-benefit analysis for BW Shipping put the issue into perspective. Captain Paul S. Jones, General Manager of the Marine Department at BW Shipping, said, "We had doubts about the higher costs involved and the actual quality of the product since we weren't familiar with this type of rope. But the cost issues were covered by an in-depth analysis that looked at all the costs involved with mooring wires that we had not previously considered in detail."

The first comparison was made for the maintenance between wire and synthetics. According to Capt. Jones, "There can be significant savings in maintenance, greasing, and crew time since there is almost no work to be done in these areas." The company would save approximately \$20,000 to \$50,000 (USD) per vessel every 2 years, since the synthetic mooring lines do not need refurbishing like wire.

Next, they looked at mooring-operation efficiency. Since synthetic lines are lighter and easier to handle, they estimated that deckhands could reduce port deployment time by one hour. Over the course of the year, this added up to an annual savings of \$81,000.

After the cost-benefit analysis, Samson calculated that BW Shipping's return on investment would be reached in approximately 4 years. This was a key finding considering the entire life expectancy of wire is 4–5 years, and after the initial purchase there continues to be ongoing costs associated with wire. 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.

BW Shipping's acceptance of high-performance synthetic rope for its fleet of tankers means more than a substantial sales order. This is significant because of BW's "recognition of the total cost of ownership. In the end, the decision-making process should be moved from the shipyard to the customer who can benefit from significant savings over a longer period of time.

"The cost issues were covered by an in-depth analysis that looked at all the costs involved with mooring wires that we had not previously considered in detail."

Since synthetic lines are lighter and easier to handle, they estimated that deckhands could reduce port deployment time by one hour. Over the course of the year, this added up to an annual savings of \$81,000.



samson
THE STRONGEST NAME IN ROPE

CONTINUED

BW SHIPPING MOORING LINES CASE STUDY

CONTINUED

THE SOLUTION: BW Shipping Managers chose AmSteel®Blue mooring lines for 11 tankers after John Morton, a sales engineer with Samson for more than 15 years, took Capt. Jones aboard an Italian-owned tanker that was frequently docked in Singapore. The tanker had been using Samson AmSteel®Blue lines for two years.

“He just couldn’t believe what he was seeing and hearing from the master and crew. We just let them sell him the ropes. He went back to BW Shipping and told them, ‘We’re missing the boat. These folks have what we need.’” says Morton.

AmSteel®Blue is the brand name for Samson’s premium non-jacketed mooring line. It is made with Dyneema® SK-75 fiber, a super-strong high molecular weight polyethylene fiber that offers maximum strength combined with minimum weight. AmSteel®Blue was created specifically as a replacement for wire rope. It is a torque-free, 12-strand braided rope which, size-for-size, is at least as strong as wire rope but only 1/7th the weight. The blue color is created by a proprietary Samthane coating that enhances wear life and snag resistance.

SAFETY AND THE NUMBERS: “Ship owners are always cost conscious. Now they are starting to look at some of the things that have not been examined too closely. In the big picture, the actual cost involved over time and the personal safety issue, switching from wire to synthetic rope make it worthwhile,” according to Capt. Jones.

However, BW Shipping ranked the safety issue the highest priority. “With ships of all types and sizes,” says Capt. Jones, “there is one common factor—the crew involved. We believe in finding ways to make life both easier and safer for them when mooring. All feedback to date has been very positive and the crew can see the benefits of deploying AmSteel®Blue ropes in terms of time saved and ease of handling.”

KEY BENEFITS: AmSteel®Blue mooring lines have many important advantages:

- > **Reduced snap back compared with steel wire.**
- > **It does not have the dangerous “fish hooks” that occur with worn steel lines.**
- > **It has two to three times the life span of wire rope.**
- > **It does not require the maintenance like wire, saving \$20,000 to \$50,000 (USD) per vessel every two years.**
- > **It cuts mooring time in half — from an hour and 20 minutes to 40 minutes for the BW Shipping vessels.**
- > **It has a return on investment of three years, in most cases.**
- > **It does not wear equipment and damage decks like wire rope.**
- > **It is environmentally friendly.**
- > **It is easily serviced and repaired onboard.**



John Morton, Samson sales engineer discusses the features and benefits of AmSteel®Blue with the crew while allowing them to get a “feel” of the product

THE SAMSON ADVANTAGE: Samson’s superior customer-service program ensures the longest possible service life. It is all part of The Samson Advantage, a valued-added program that Samson offers all its shipping customers. Samson conducted a detailed survey and analysis of BW Shipping’s deck hardware during the ships’ construction phase, helped to identify any potential equipment issues, and offered an application-specific solution.

Once the rope selection was made and prior to the ropes being deployed, Samson provided on-site training and complete documentation on proper handling, usage and inspection of the lines, and developed retirement criteria specifically for BW Shipping. Once BW’s lines were in use for a year, Samson followed up with full annual inspections and testing to assess and adjust, if necessary, the retirement criteria.

For more information on Samson’s complete line of high-performance ropes specifically designed for mooring applications, visit our website, www.SamsonRope.com/VesselMooringLines, or contact our customer service department.

TESTED AND PROVEN IN THE FIELD

In 1996, Samson partnered with one of the world’s top ten integrated energy companies to test AmSteel®Blue mooring lines in the field where injuries and the associated costs of handling heavy, maintenance-dependant wire mooring lines had become unacceptable. Over five years, data enabled the operator’s committee to justify replacing all wire-mooring systems throughout their fleet.

Samson, working together with the customer and DSM Dyneema®, published the results in the 2002 OCIMF manual, *Guidelines on the Use of High-Modulus Synthetic Fibre Ropes as Mooring Lines on Large Tankers* (Witherbys Publishing).

“All feedback to date has been very positive and the crew can see the benefits of deploying AmSteel®Blue ropes in terms of time saved and ease of handling.”



samson
THE STRONGEST NAME IN ROPE