



Deck Machinery: Evolving for Soft Line

A new line of full-tension render-recover winches being produced by Seattle's Markey Machinery, known internally as the "Response-lite" series, has all the electrics and braking components under-deck out of the weather. Photo courtesy of Markey Machinery.

Deck machinery, and more specifically line handling equipment, continues to evolve. New technologies are being developed and implemented both in the towing industry and in the maritime industry that provides customers for the newest generation of tugboats being built or converted.

A recent example of new technology being applied to address a customer's needs is the recent conversion of the *Wedell Foss* and *Henry Foss* from ASD tugs to "TractorPlus" tugs (see *Pacific Maritime Magazine*, April 2005), raising the horsepower produced from 3,000 to 5,000, and requiring the subsequent upgrade of their deck equipment. Foss customer Evergreen Marine required more powerful tugs to assist the company's large containerships calling at the company's new Tacoma terminal, on the Blair waterway. While the original winches, Intercon models with double brakes, were deemed to be suitable for the increased bollard pull to produced by the upgrades, the 20-year-old towing winches lacked a system for measuring

the strain being placed on the hawser by the added horsepower and new drive configuration.

Markey's response was to adapt their SD200 line tension monitoring system to work with the *Henry* and *Wedell's* original equipment winches. "The system has become a standard feature on ship assist and escort winches," says Markey president Blaine Dempke. "The winch we developed for the [Crowley Marine Service's] *Response* has active measurement of tension at all times, whereas the default system, like the one we fit to the two Foss boats, registers tension only when the drum brakes are set."

The *Response* winch, a 250 HP all-electric winch with 1,000 feet of ten-inch soft line, can haul in line with twice the force of the vessel's bollard pull. The active tension monitoring system includes a load pin built into the gear train that generates a load signal when the winch is hauling in line.

By Chris Philips

"This may represent where the industry is going," says Dempke, noting that his company is currently building two similar, albeit smaller winches for two companies having tugs built at Washburn and Doughty, in Maine.

The two boats, one for Moran Towing, of New Hampshire and the other for Crescent towing, of Louisiana, are being built in conjunction with a partnership the two companies have formed with British Gas to escort LNG ships up the Savannah River.

"We're calling the winch the Response-lite," says Dempke, noting that the winches will share many of the same features of the 250-HP version, but are powered by smaller, 100 HP electric motors.

"We sized the 100-HP version so that an operator could retrofit it to a current tug, and work off of one standard 99 kW genset," says Dempke. The all-electric Response-lite features constant tension performance up to the full bollard pull of the vessel so that the tugs can apply steering force while under way.

Other features of the Response-lite

include the water-cooled multi disk braking system, with all the mechanicals below deck. The brake can dissipate more than 700 HP in thermal energy, allowing the winch to render at much higher speeds. The winch also features a line tension display system built into gear train, that feeds information, such as line pull in pounds or tons or speed of payout, to a touch screen display in the wheelhouse.

Markey has also developed a new line of mooring winches, spearheaded by a two-barge order from Moran Towing Company. The barges *New Hampshire* and *Georgia*, under construction at bay Shipbuilding, Sturgeon Bay, Wisconsin will each employ a complete set of Markey winches including six electric mooring winches for 400 feet of 1-1/8" soft-line mooring-line and an explosion-proof electric Capstan-Windlass for 2-inch anchor-chain.

The new designs, based on Markey's soft-line hawser winches, can be set up for either wire rope or high-performance Plasma or Dyneema ropes.

The increased use of synthetic

rope, which offers a combination of lightweight and high strength, has other deck equipment manufacturers adapting their products as well. One of these, the Schoellhorn-Albrecht Machine Co. of St. Louis, Missouri has developed a new line of roller fairleads using composite rollers to protect synthetic rope from the wear caused by traditional steel rollers. The new fairleads, which are already seeing application on tugs, barges and US Navy ships, do the same job as before but without causing abrasion to the rope.

Seattle's Smith Berger is also producing a line of deck machinery for working with soft line. "The biggest thing is probably the Softech fairlead for soft line," says Tom Phipps, the company's sales manager. "We've built a couple of different prototypes for the Navy, including a standard swivelhead fairlead, with soft radiused stainless steel surfaces where rope might make contact."

The company is experimenting with different materials, and produces a line of stainless steel chocks for soft line.

"People spend a ton of money on some expensive line," says Phipps, "and then run it through a rusty steel Panama chock and wonder why it doesn't last!"

Smith Berger is also seeing more activity is South East Asia for its line of Shark Jaws. "We've granted a license to the Plimsoll Corporation to produce our Shark Jaws in China," says Phipps. "They're turning out very nicely, and we're marketing them to anchor handlers in China and South East Asia."

The company has recently landed a contract to provide hanging snatch blocks to Raytheon Polar Services, which provides operations and maintenance support of the United States Antarctic Program.

While wire rope is still the industry standard for most applications, there are more applications for softline every day. As softline continues to gain acceptance throughout various segments of the industry, the industry will continue to respond with specialized handling products. PMM

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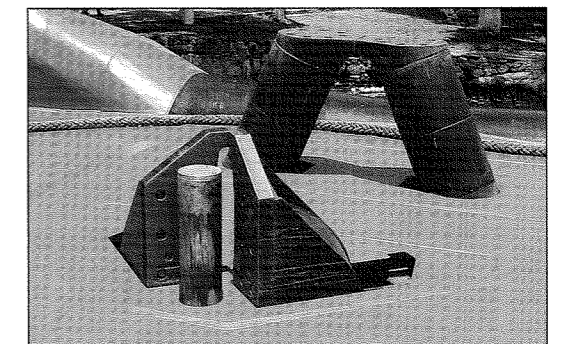


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