



1328 Racine St., Racine, WI 53403

TWIN DISC GEARS CHOSEN FOR HYBRID EXCURSION VESSEL

Twin Disc, a global leader in power transmission technology for marine applications, is helping shipbuilders put the latest energy-efficient hybrid technology to work for excursion vessels.

For its new 600-passenger 39m x 9m excursion vessel, *Enhydra*, San Francisco-based Red and White Fleet chose a BAE Systems HybriDrive. Builders faced the challenge of integrating both the craft's Cummins 410 horsepower engines and the advanced 80-kWh battery-powered propulsion solution into a traditional marine power train.

Twin Disc distributor Mill Log Marine provided the solution with QuickShift® MGX-5114SC reduction gears and an EC300 Power Commander electronic propulsion control that meets Subchapter K requirements. The combination delivered the efficiency needed to complement the hybrid vessel's sustainable fuel consumption, lessened impact on marine life and quiet operation.

"*Enhydra* is just another example of how Mill Log Marine and Twin Disc strive to solve our customers' needs in marine drivetrain applications," said Bob Shamek, Mill Log Marine key account executive. "On *Enhydra*, the gears have remote electric motor driven oil pumps. This allows the gear to stay engaged when the motors are operating at low speed

and through zero shaft speed when changing rotation from forward to reverse."

The QuickShift® MGX-5114SC offers a smooth, steep power curve with fast shifting, precise slow speed control and quiet operation. The 3:1 gear features an SAE J617 number 1 vertical offset, aluminum housing and minimal external plumbing. It boasts an electric GP-valve with manual override.

The Twin Disc EC300 Power Commander electronic propulsion control provides drive motor speed and rotational control, along with fault monitoring. Dual CAN bus wiring provides redundant control communications from the pilot stations to the controllers in the engine room. A monitor at *Enhydra's* helm provides a graphical readout for control system fault codes, as required under Subchapter K regulations.

Since 1946, Kent, Washington-based Mill Log has sold and serviced power transmission equipment for the marine, oil, natural gas, construction, mining, logging, and agriculture industries. Its website is milllog.com.

Red and White Fleet is the oldest sightseeing and charter tour company in the San Francisco Bay area. Founded in 1892, the business has been working on providing feasible hybrid power for its fleet in recent years. It commissioned *Enhydra* from builder All American Marine, Inc., of Bellingham, Washington.

About Twin Disc

Twin Disc, Inc. designs, manufactures and sells marine and heavy-duty, off-highway power transmission equipment. Products offered include: marine transmissions, surface drives, propellers and boat management systems, as well as power-shift transmissions, hydraulic torque converters,

power take-offs, industrial clutches and control systems. The Company sells its products to customers primarily in the pleasure craft, commercial and military marine markets, as well as in the energy and natural resources, government and industrial markets. The Company's worldwide sales to both domestic and foreign customers are transacted through a direct sales force and a distributor network. For more information, please visit www.twindisc.com.

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