



AMERICAN SONG AMERICAN CRUISE LINE RIVERBOAT

MARINE PRODUCTS

American Song is designed to be the most technically superior, efficient and environmentally friendly ship in U.S. river cruising.



Model:	190-passenger contemporary riverboat
Builder:	Chesapeake Shipbuilding Corporation in Salisbury, Maryland
Company:	American Cruise Line
Location:	Columbia and Snake Rivers
Propulsion:	Two model VZ-1250A-CR Veth Propulsion Z-drives by Twin Disc
Power:	1350 kW @ 1600 rpm
Tunnel Thrusters:	Two model VT-400 Veth Propulsion Tunnel Thrusters by Twin Disc
Thruster Performance:	400 kW @ 1500 rpm



Veth Z-Drive Powers Innovative American Cruise Line Riverboat

The *American Song* is the first modern riverboat of its kind in the United States.

Situation

American Cruise Line commissioned the construction of *American Song*, the first of five new modern riverboats. Chesapeake Shipbuilding Corp. in Salisbury, Maryland, designed the innovative vessel to include technical advancements that are revolutionary in the cruise industry.

Implication/Opportunity

American Song is equipped with twin, ultra-low-sulfur Caterpillar diesel engines designed to produce lower emissions and use less fuel than other engines. The bow of the vessel opens, allowing the extension of a rotating gangway from its main deck directly to a dock or riverbank. This allows for much greater landing flexibility than other ships.

To power the vessel, the designers needed a superior, reliable, and nimble propulsion system to provide faster and more comfortable sailing. They also required strong sales and service support. Working with Sewart Supply and Chesapeake Shipbuilding, they decided on Twin Disc for a solution.

Solution

Two Veth Propulsion Z-drives by Twin Disc (Model VZ-1250A-CR) give the American Song maximum maneuverability through full 360-degree thrust vectoring.

The VZ-1250A-CR Z-drives, performing at 1,350 kW at 1,600 RPM, feature propellers on the front and back of the drives. They are specifically designed for medium-speed vessels like cruise ships and ferries. A comfortable cruise for her passengers is ensured due to several special features:

- 360 degrees full thrust and optimum maneuverability.
- Up to 20% more efficiency than conventional propellers.
- Reduced water turbulence due to contra-rotating propellers.
- Propeller loads are shared over two propellers and distributed over a total of nine blades to ensure low vibrations and noise.
- Possibility for flexible suspension, which provides better insulation from noise and vibration.
- Compact construction. The thruster is designed as compact as possible without use of any additional machinery.
- No separate reduction gearbox is needed from the engine output to the thruster input.
- Safer navigating, through shorter emergency stopping distance and improved maneuverability.

The new riverboat also employs two Veth Propulsion Tunnel Thrusters by Twin Disc (Model VT-400) that are designed with a noise suppression air injection system and driven by fast accelerating and decelerating variable frequency drives.

The two VT-400 thrusters, which incorporate noise suppression air injection systems, perform at 400 kW at 1,500 RPM. Other features include:

- Optimum propeller design.
- Requires minimal maintenance.
- No reverse clutch is required due to electrical E-drive.

Results

American Song is designed to be the most technically superior, efficient and environmentally friendly ship in U.S. river cruising. The VZ-1250A-CR Z-drives give the vessel total maneuvering, docking flexibility and a highly comfortable cruise. The VT-400 Tunnel Thrusters aid navigation without generating distracting noise for passengers on the vessel.

“Our interactions with Veth and Sewart Supply from initial design, to parts delivery, installation and sea trials were simply superb. Every component and service were delivered on-time and as ordered. Both the Z-drives and thrusters have performed beyond our expectations resulting in a quiet, highly maneuverable ship. There has been minimal need for support or maintenance since delivery. We chose to use these same systems on two vessels currently under construction due to the outstanding service and performance.”

Steven McGee, PE
President, Chesapeake Shipbuilding Corporation
Vice President, American Cruise Lines