

A Second Chance on the High Seas

Transfluid's HM3350 Powers the *Western Flyer*

Matthew Jaster, Senior Editor

Author John Steinbeck chartered a 77 ft. fishing vessel known as the *Western Flyer* during his 1940 Gulf of California expedition. The voyage was chronicled in *The Log from the Sea of Cortez*, a book written by Steinbeck as he collected specimens with his marine biologist friend, Ed Ricketts. The *Western Flyer*—known as the most famous research vessel to have ever sailed—is getting recommissioned as a fishing showpiece for green technology.

“We were approached through our distributor Palmer Johnson to provide a competitive quote to the BAE system that was previously quoted. The customer liked that they could install only one diesel and use it as propulsion (parallel hybrid) as well, instead of using multiple gensets to power an electric motor (serial hybrid),” said Josh Welborn, OEM account manager at Transfluid LLC.

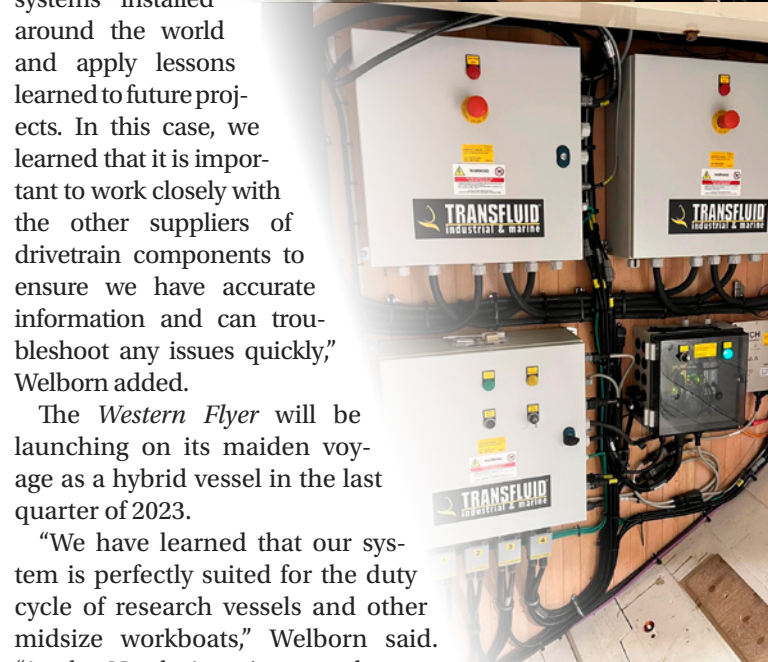
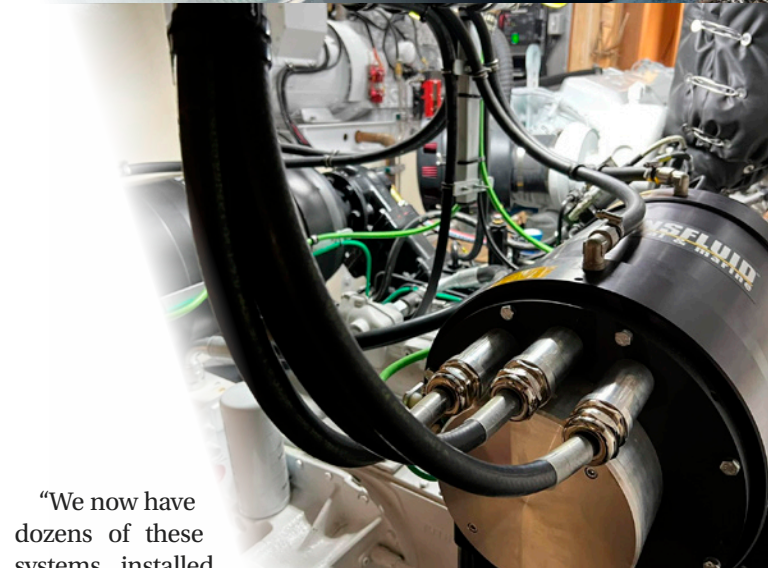
The *Flyer* is powered by a 425 hp John Deere diesel onto which is mounted the HM3350 hybrid module. For the electric propulsion, twin 100 hp electric machines will allow the *Flyer* to reach hull speed in electric mode and perform standby operations silently. This is extremely valuable when collecting data onsite.

The HM3350 features three additional PTO heads which will drive the steering pump as well as a clutchable pump to operate the research equipment. Head extensions for the PTO heads allow for a seamless integration with the Tier 4 diesel and marine gear.

Transfluid has provided the propulsion control, CANBUS communication system, and all components to make the complete hybrid supply. The operator can switch on the fly from diesel to electric mode with the press of a button and engage or disengage the hydraulics from the control bridge.

“We required 27” of space between the flywheel of the engine and the input of the marine gear. This was accomplished by shortening the propeller shaft and moving the engine forward. As part of our supplied package, we performed a TVA on all components connected to our drive and required information from the engine manufacturer and marine gear manufacturer, as well as the hydraulic pump supplier since we used the free PTO heads on our drive to power their hydraulics,” Welborn said.

For energy storage, 115 kWh of lithium iron phosphate batteries provide autonomy in electric mode and power the house systems. The boat can charge while underway in diesel mode using the power of the engine, or while docked using shore power.



“We now have dozens of these systems installed around the world and apply lessons learned to future projects. In this case, we learned that it is important to work closely with the other suppliers of drivetrain components to ensure we have accurate information and can troubleshoot any issues quickly,” Welborn added.

The *Western Flyer* will be launching on its maiden voyage as a hybrid vessel in the last quarter of 2023.

“We have learned that our system is perfectly suited for the duty cycle of research vessels and other midsize workboats,” Welborn said. “As the North American market continues to embrace hybrid technology, we will find many more similar projects to provide a fully engineered solution at a competitive price.”

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