

# ACBL, BAE Unveil Innovative No-Fuel Generator

BY DAVID MURRAY

For more than two years, American Commercial Barge Lines (ACBL) has been quietly working with global technology firm BAE Systems on an innovative new generator that captures and stores power from the spinning shaft of a towboat's engines. Joe Brantley, senior director of boat maintenance for ACBL, said it could eventually become ACBL's "primary generator of the future," displacing a lot of diesel-burning generators.

Unlike conventional generators, this one requires no lube oil or oil filters, eliminating those costs and the associated maintenance and disposal costs. Brantley estimated the unit has saved between 75 and 150 gallons of diesel per day. It is a fraction of the size of the typical diesel-burning generators carried by large-horsepower towboats.

By reducing the use of the existing generators, the unit could more than double the overhaul cycle of both existing generator sets. This third redundant unit will also reduce the downtime associated with a generator outage.

The prototype unit, currently running on the starboard main engine of the 8,000 hp. mv. Christopher M. Parsonage, shows signs of very minimal "drag" on the engine and no power loss on the 4,000 hp. 710 electronic engine.

## A Child Of Donna Rushing

The idea was one of many developed during the design of the mv. Donna Rushing at AEP River Operations, which was designed to be a working showcase of innovative "green" technologies. The roll-out of the new generator shows ACBL's continued commitment to innovation in the marine market.

ACBL has been "river-testing" the unit on the mv. Christopher M. Parsonage to test and capture data since April. So far, said Brantley, the new unit has allowed the boat to reduce diesel gen-



Chip Jaenichen and Marty Hettel pose aboard the Christopher M. Parsonage.



—photos by David Murray

ACBL Senior Director of Boat Maintenance Joe Brantley, Chief Engineer Tim Caldwell, Maritime Administrator Paul "Chip" Jaenichen, and Marty Hettel, ACBL vice president-government affairs, examine the new generator.

erator use for several trips during the test cycles as the team works on improving reliability and amp loads. ACBL has greatly improved seamless switching from one generator to another without interrupting operations, thus improving safety.

The system includes two units: the generator itself, attached to the shaft on the front of the engine, and an electronics enclosure that converts its high-frequency alternating current output into

direct current and back. The generator unit includes a Logan air clutch, which allows it to disconnect either automatically or manually from the engine if necessary, without stopping the engine. (Brantley said their engineering team connected with Logan at the 2014 Inland Marine Expo in St. Louis.)

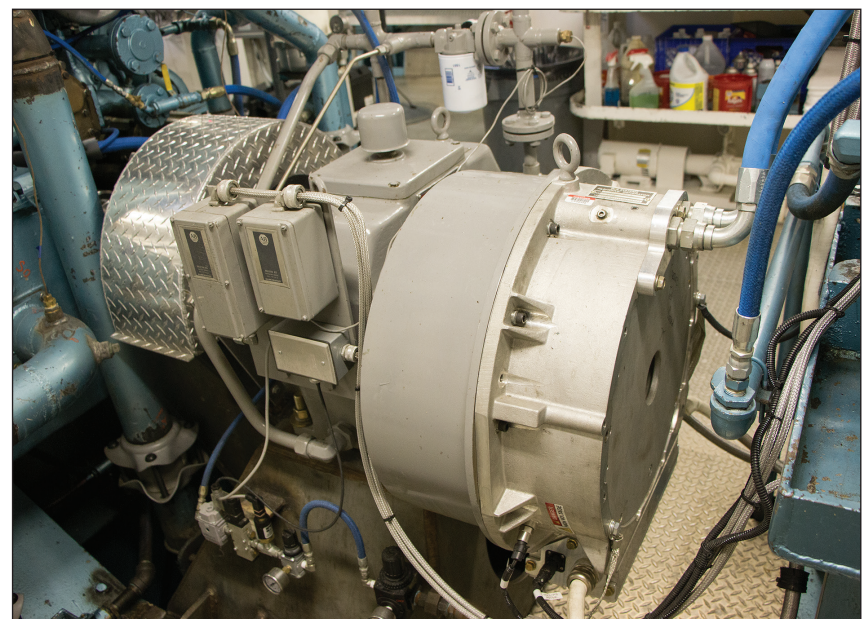
## Jaenichen Takes Tour

On July 1, representatives from ACBL's engineering team and ACBL's Vice President of Government Affairs Marty Hettel proudly showed off the new innovative unit to U.S. Maritime Administrator Paul "Chip" Jaenichen, who visited the Christopher M. Parsonage at Cairo, Ill., from nearby Paducah, Ky., where

he had attended the Inland Waterways Users Board meeting. The Maritime Administration helped jump-start the project in 2014, providing \$450,000 in funding under the Maritime Environmental and Technical Assistance Program.

Jaenichen, a career naval officer who retired after 30 years as a trained nuclear submarine officer in the U.S. Navy, was deeply interested in the new technology that the ACBL engineering team has been working on.

Port Engineer Van Henson, who managed the project, and Chief Engineers Tim Caldwell and Randy Kent have been working on testing the unit for several months to help enhance its performance for the future.



Unit is estimated to save 75–100 gallons of diesel per day.