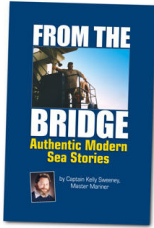




Biodiesel

By Captain Kelly Sweeney

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It was a rainy New Years Eve 2004. Due to work on my book *From the Bridge*, I hadn't done my usual holiday relief onboard ship. My wife and I decided to take advantage of our first New Year's Eve together in many years and do something special. We chose to go on a lake cruise. The boat was an old converted ferry, and for most of the early part of the evening we enjoyed dancing and refreshments inside. Just before the stroke of midnight the rain stopped, so we bundled up in our winter coats and watched the fabulous Space Needle New Year's fireworks show outside on the back deck. When it was finished, the boat began the return trip to the dock. The sky was clearing, so we stayed outside on the back deck talking with two couples from England. While rounding a bend in the Lake Washington Ship Canal the wind was just right, and a steady stream of diesel exhaust blew down on us. Everyone began coughing from the fumes, and as we all made our way inside I heard one of the Brits mention to his wife "How do they expect people to sit out here and enjoy the night air with that awful exhaust blowing in our faces?"

Unfortunately, many people's only personal contact with commercial boats or ships involves a situation like this. Contemplating our "diesel exhaust episode," I began to understand why much of the general public seems to view the maritime industry as one which pollutes the air in our ports. Actually, it's true. Every day tour boats and other diesel powered vessels, including ships at berth or anchor, tugs, launches, and fishing vessels, put exhaust pollution into the air. As a result, a number of port air pollution laws have been enacted. To meet these requirements maritime companies are trying different ways to reduce diesel exhaust emissions on their vessels. One innovative way is the use of biodiesel in marine fuels.

Biodiesel is not made from oil pumped out of the ground, like petroleum diesel. Originally developed by Dr. Rudolph Diesel as a way for farmers to produce their own tractor fuel from what they grew, it is refined from fresh or recycled vegetable oils and/or animal fats. In data published September 2006 by the US Department of Energy, the use of biodiesel reduced particulate matter in exhaust by 47%, exhaust hydrocarbons by 67%, and carbon monoxide by 48% - when compared to conventional petroleum diesel.

Testing 100% biodiesel for marine use, a four month project in Montreal, Canada used biodiesel from recycled cooking oil to fuel a dozen passenger boats during the summer of 2004. At the end of the project it was determined that the pollution exhaust from the boats was reduced by nearly 400 tons. In addition, since the biodiesel was made from recycled cooking oil, fuel was made from what would have been dumped as waste before. Quebec's Environment Minister Thomas Mulcair summed it up when he said, "since biodiesel has the advantage of turning agro-industry waste into an asset, it is promising both from an environmental and economic standpoint."

A few forward thinking maritime transportation companies, including Catalina Express and the Washington State Ferries, have used biodiesel/petrodiesel blends to fuel their vessels. Pacific Tugboat Service (www.pacifictugboatservice.com), a company based in San Diego and Long Beach, has embraced the use of a biodiesel blend in several of its tugs. After speaking to a great group at the San Diego Propeller Club in October, (Thank you, Steve Kirkwood and Capt. Jeff Bentley), I was invited to visit the Pacific Tugboat Service dock for a tour.

It was a bright, sunny San Diego day when Captain Stephan Frailey, the company Vice-President and a long-time tugboater, came down from his office to greet me. We took a walk on the docks at the company's facility. Passing by a group of pushboats, he told me that Pacific Tugboat Service is using a biodiesel blend to reduce pollution from their vessels. After taking a look at the on-site machine shop, we walked out to the end of their dock. I asked how customers have responded to their use of biodiesel. Steve replied that it's great for public relations. In fact, the use of biodiesel fits in well with the air quality programs of two of Pacific Tugboat Service's biggest customers - the US Navy and the Port of Los Angeles. He also told me the company plans to increase the use of biodiesel as much as possible in the future. I was impressed, but as a merchant mariner I must admit that what I like most about Pacific Tugboat Service's decision to use biodiesel is the fact that the crews of those boats are now breathing less toxic diesel exhaust day in and day out. Several months ago California Governor Arnold Schwarzenegger and British Prime Minister Tony Blair signed an agreement at the Port of Long Beach to promote clean alternative energy, and share research on reducing air emissions and pollution. Minnesota and Washington State have mandated that a certain percentage of diesel fuel used in the state must be biodiesel. In addition, fourteen states have already

offered incentives for its use.

My three columns on vessel emissions have highlighted the use of “cold-ironing,” solar and electric powered vessels, and here the use of biodiesel blends as ways to reduce the air pollution caused by commercial vessels. I applaud those maritime companies that have chosen to implement alternative energy and fuels, and sincerely encourage the entire maritime industry to do so. Perhaps Lord John Browne, Chief Executive Officer of British Petroleum, said it best when he commented “There is no trade off between a business that is good for the environment and good business.” □

‘Till next time...smooth sailin’.

Note: My thanks to Mr. Frank Benson of Energy Merchant LLC, and Mr. Mahesh Talwar of OceanAir Environmental for their info on biodiesel specs and testing.

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