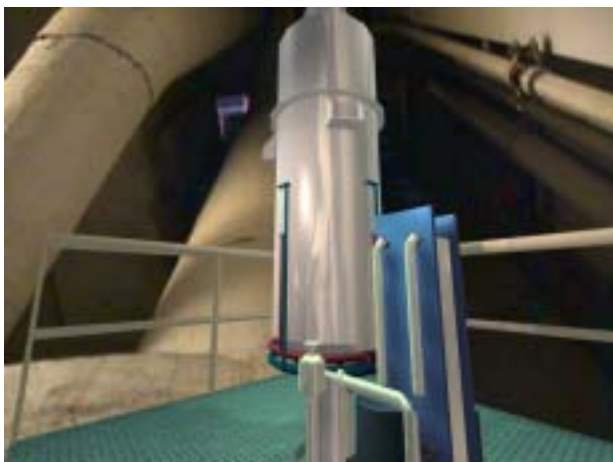


Industrial Research Assistance Program (IRAP)

Region:
Maritimes – PEI
Charlottetown

Diversified Metal Engineering



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Barry MacLeod, Vice-President of Marketing and Sales, Diversified Metal Engineering

A solution for seafaring smoke stacks

The exhaust from diesel engines used on ocean-going ships can be even harder to clean up than the dirtiest of land-locked smoke stacks. This situation is complicated by the surrounding seawater, but a Prince Edward Island company has turned this challenge into an advantage.

Diversified Metal Engineering (DME), which is based in Charlottetown, has designed a "wet muffler" that not only extracts soot and acidic gases from exhaust fumes, but reduces the engine's noise levels as well. The technology employs a turbulent mixing process, where a cascade of seawater mingles with the gases until pollutants are absorbed.

DME's product is called the Eco-Silencer, which effectively eliminates the black plumes that are typically produced by engines, boilers or incinerators. Sulfur dioxide, one of the more noxious components of those plumes, is deposited overboard in the form of sulfides and sulfates, which are among the most common naturally occurring compounds in the marine environment. Moreover, these compounds are first filtered through a carbon and sand filter, so that they enter the water in as pure a state as possible.

DME was founded in 1991, originally specializing in custom designed equipment for the food and beverage industry. The company developed expertise in the design and supply of process equipment, which is has installed in countries from Asia to the Middle East to South America. This work

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has featured significant activity in the brewing industry, with some 300 installations in various sites around the world.

With annual sales upwards of \$5 million, DME has set up a separate division, called Marine Exhaust Solutions, to commercialize the Eco-Silencer. This equipment offers several advantages to commercial operators, including the ability to run engines while in port, reducing deck cleaning expenses, and enabling the use of low cost, high sulfur fuel while still complying with international environmental regulations. Passengers, meanwhile, will appreciate the reduction of exhaust smells, diesel soot, and ambient noise.

The Eco-Silencer's performance was honed over the past five years with a trial installation aboard the Canadian Coast Guard icebreaker, Louis S. St. Laurent. Another trial was completed with Marine Atlantic on its ferry from Sydney, Nova Scotia to Port Aux Basques, Newfoundland and Labrador. Barry MacLeod, Vice-President of Marketing and Sales, credits their successful implementation to the development of these trial units, which provided the data necessary to refine the system for sale and provide useful reference points. And this precommercial activity, he adds, was supported by the National Research Council's Industrial Research Assistance Program.

"This assistance helped us to identify some of the key areas where we could sell the Silencer," he says. "And eventually when we got the trial unit running, it gave us the technical reference to tailor the technology for those markets."

An initiative of the National Research Council, Canada's foremost research and development agency, IRAP works closely with small and medium-sized enterprises, helping them grow their businesses, increase their competitiveness, and enhance their impact in the marketplace.

As further testimony to DME's accomplishment, the company also became a finalist for a 2002 Regional Innovation Award for Sustainable Development, an honour presented jointly by the Canadian Manufacturers and Exporters and IRAP. ■

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