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Shipyard restores submarines with biobased paint stripper

Maintenance workers at Portsmouth Naval Shipyard in Maine are entrusted with the important task of keeping the nation's nuclear-powered submarines in tiptop shape. They've found a biobased paint stripper does the job well without exposing them to any harmful chemicals.

Franmar Chemical (www.franmar.com) of Bloomington, Ill., manufactures this product, called Soy Strip, from soybeans and markets it as a paint remover for boat hulls. It also makes an assortment of other soy cleaners. Soy Strip has been the main paint and adhesive remover at the shipyard for about five years. The shipyard uses about 500 quarts annually.

"Soy Strip works extremely well and peels right off," said Bruce Trent, work leader in Paint Shop 71. "The old paint stripper had acid that was very dangerous for the workers."

Portsmouth Naval Shipyard is one of four remaining shipyards in the nation. Its primary mission is to overhaul, repair and modernize Los Angeles Class submarines, the backbone of the U.S. attack submarine fleet. The U.S. Navy has 47 of these submarines in commission.

The history of how the staff switched to Soy Strip dates back to the 1990s. At that time, Tim Dunn, Portsmouth chemical engineer, formed a pollution prevention team that identified major pollutants at the shipyard. The team discovered that the existing stripper was the main source of methylene chloride, a toxic chemical.

Dunn then instructed Lisa Melvin, a former civil engineer in his department, to look for a safer alternative. Melvin investigated an array of products to find an environmentally friendly product with a flash point high enough to eliminate explosions and to prevent toxic fumes from emitting into the air.

Melvin made the connection to Franmar when a General Services Administration employee attended a trade show in Florida where the manufacturer was an exhibitor and reported back to her about the firm's soy stripper. Portsmouth trial tested the product in 2001. Based on those glowing trial results, the Shipyard began using it the following year.

Bruce Trent of Portsmouth

Performance Benefits
The non-toxic nature of the stripper provides the following advantages for removing paint in the confined area of submarines:

- Eliminates the need for extensive sanding. The instrumentation of a submarine is extremely sensitive to dust particles and using a chemical stripper is a better choice than a mechanical method of stripping.

- Contains no caustics or methylene chloride. Methylene chloride is classified as a volatile hazardous air pollutant and is bad for the environment.

- Softens old paint and makes it easy to remove without damaging the surface below.

- Leaves no chemical residue and needs no neutralizing.

- Removes both paint and adhesive.

Although the product costs more than the conventional version, it has multiple benefits that save money through decreased equipment costs. The old product required both ventilation and respirators to protect workers.

Dunn expects Portsmouth to adopt more biobased products in the future because the staff seems eager to help the agricultural economy and to reduce the nation's dependence on foreign oil.

The staff is completely sold on this soy stripper. Trent harbors no doubts that it can meet the military's needs, even in a time of war. "We have complete confidence in the product," he said, describing Soy Strip as reliable, safe and cost effective. "We use it every day and will continue to use it in the future."

For additional information, contact Tim Dunn, Timothy.p.dunn1@navy.mil.

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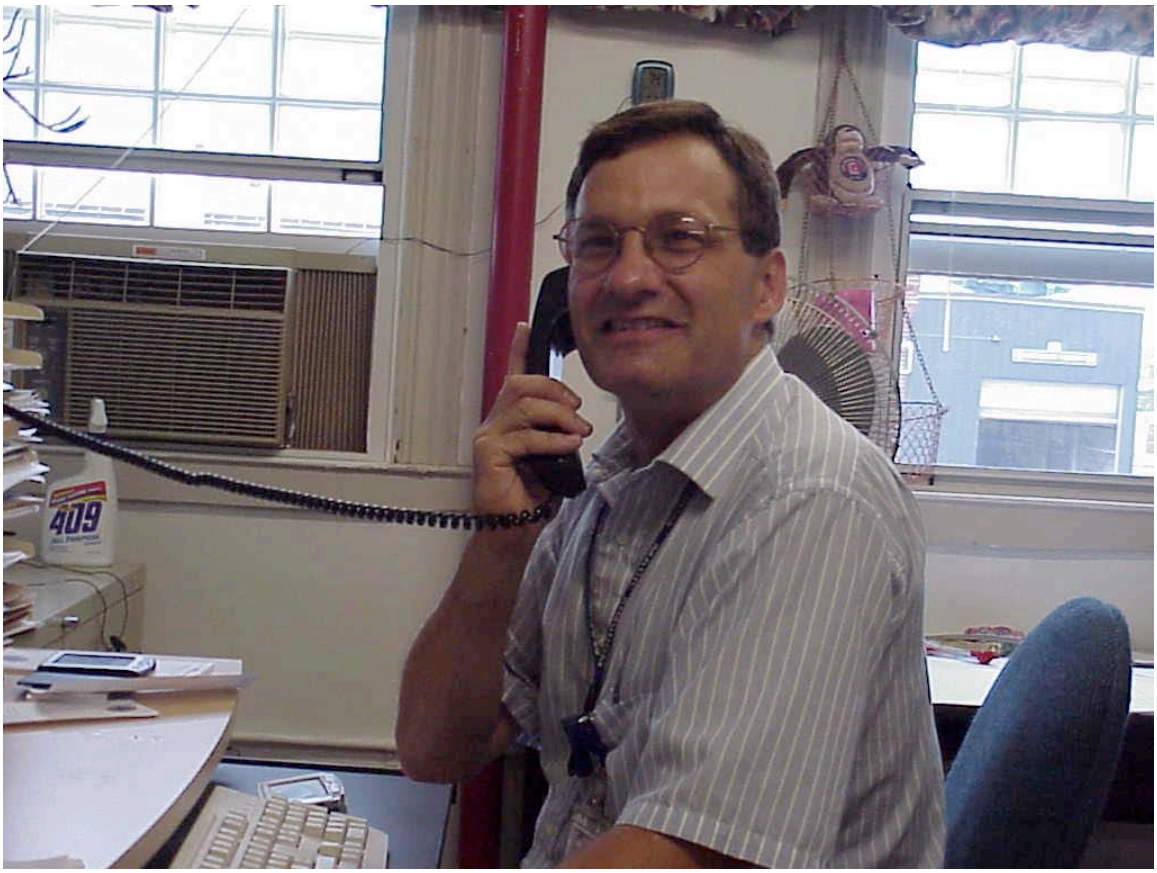

Tim Dunn of Portsmouth