



PROJECT ID:  
598

## Minimizing Hazardous Waste from Expired Paints and Associated Solvents from Ships' Supply



The Navy currently spends an estimated \$817,000 per year at PSNS & IMF on the original costs to purchase paint (\$770,000) and the resultant costs to properly dispose of expired paint (\$47,000).

(Photo Credit: Mass Communication Specialist 2nd Class Eric Coffey)

### OBJECTIVE

The objective of this study is to minimize the amount of hazardous waste produced by expired paints and associated solvents originating from ship supplies.

### PROBLEM STATEMENT

Navy ships place excess paint in storage after use. The paint's shelf life often expires while in storage and therefore becomes hazardous waste. In some cases, the shelf life of expired paint can be extended, but there is conflicting guidance and understanding on how this can be achieved. The Defense Logistics Agency (DLA) often requires offsite laboratory testing of paints in order to extend the paint's shelf life. If not tested, the paint is treated as hazardous waste, which incurs disposal and handling costs, increases the risk to human health and the environment, and runs the risk of violating existing regulations.

### DESCRIPTION

There are several ways to address the problem of expired paint. This project is producing an Initiation Decision Report (IDR) that provides situational understanding of the problem, current process and procedures, recommendations regarding quantities of paint to purchase, as well as techniques for effectively managing and extending the shelf life of paints.

The location for this IDR is Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS & IMF). This facility alone spends \$47,000 to dispose of expired paint each year. This project team will research historical data regarding the quantity of paint ordered per year at the base and the quantity disposed of due to expired shelf life. They will then develop a paint quantity purchase guideline based on ship class that states how much material



a ship is recommended to purchase in order to “right size” the amount of paint in the ship’s supply.

To prevent waste upfront, the team will research relationships between size of unit issued versus quantity used (i.e., ordering a gallon but only using a quart), and will inquire whether suppliers can package their material into smaller containers based on demand.

The team will also enable increased reuse of paint by researching shelf life regulations, process and procedures, and management practices to determine the root cause of why paint shelf life expires.

Finally, the team will assess hazardous material offload options at larger Navy bases prior to ship availability at PSNS & IMF. The advantages of offloading at larger bases includes a higher likelihood of reissuing the paint to another ship before it expires and hazardous waste facilities that can better process the large amount of waste coming off ships.

### RETURN ON INVESTMENT

There is a potential return on investment estimate of \$817,000 per year, along with a 70,000-pound decrease in expired paints.

This is the total amount of money the Navy spends a year on paints for ships at PSNS & IMF. This includes the original costs to purchase paint (\$770,000) and the resultant costs to properly dispose of expired paint (\$47,000). In addition, decreasing the amount of hazardous waste produced would improve compliance with safety and environmental regulations. Hazardous waste fines are currently nearly \$76,000 per violation per day. Furthermore, better shelf life management of paints could decrease the overall lifecycle costs of purchasing, storing, using and disposing of paint products on ships.

### NAVY BENEFITS

The IDR will identify feasible solutions that the Navy can implement to decrease the amount of hazardous waste produced by expired paints. The process and procedures implemented

in this project are transferable not only to all Navy shipyards but also to any base at which ships unload their hazardous material for courtesy stow.

Decreasing the amount of paint waste will not only save money, it will also showcase the Navy’s commitment to environmental stewardship.

### TRANSITION DESCRIPTION

Transition to the fleet would come from setting the levels in the Allowance Equipage List when new ship platforms are launched, and in publishing quantity purchase guidelines. Naval Supply Systems Command Weapons Systems Support will codify best practices for shelf life management and testing through updating technical manuals, instructions, standard operating procedures and desk guides for use throughout the Navy.

### CONTACT

For more specific information about this project, contact the Principal Investigator at 717-605-8314.



## ABOUT THE NESDI PROGRAM

The Navy Environmental Sustainability Development to Integration (NESDI) program is the Navy's environmental research and development, demonstration and validation (6.4) program, sponsored by the Chief of Naval Operations, Energy and Environmental Readiness Division (OPNAV N45) and managed by the Naval Facilities Engineering Systems Command (NAVFAC) out of the Engineering and Expeditionary Warfare Center (EXWC) in Port Hueneme, CA.

The mission of the program is to provide solutions by demonstrating, validating and integrating innovative technologies, processes, materials, and filling knowledge gaps to minimize operational environmental risks, constraints and costs while ensuring Fleet readiness and lethality. The program accomplishes this mission through the evaluation of cost-effective technologies, processes, materials and knowledge that enhance environmental readiness of naval shore activities and ensure they can be integrated into weapons system acquisition programs.

The program is the Navy's complement to the Department of Defense's Environmental Security Technology Certification Program which conducts demonstration and validation of technologies important to the tri-Services, U.S. Environmental Protection Agency and Department of Energy.

For more information, visit the NESDI program web site at [www.navfac.navy.mil/nesdi](http://www.navfac.navy.mil/nesdi) or contact Ken Kaempffe, the NESDI Program Manager at 805-982-4893, DSN: 551-4893 or [kenneth.c.kaempffe.civ@us.navy.mil](mailto:kenneth.c.kaempffe.civ@us.navy.mil).

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