Navy Is PRIMEd

Program Reduces Plastic Wastes from Ships

The Navy established the Plastics Removal in the Marine Environment (PRIME) program to reduce the amount of plastic and solid waste brought on board Navy vessels.

As Navy ships steam through the vast and glorious oceans of the world, sailors probably don't spend much time thinking about waste reduction or being a worthy steward of the seas while some of their shipmates are below sorting trash, recycling, and dealing with plastic waste processors. The PRIME program seeks to elevate the concepts of plastics removal and waste reduction afloat in the hearts and minds of the average sailor.

In 1987, then-President Ronald Reagan signed the Marine Pollution Research and Control Act requiring the U.S. Navy to comply with the worldwide prohibition against disposing of plastics at sea. The Navy established two programs to back this strategy: Waste Reduction Afloat Protects the Seas (WRAPS) and PRIME. And sixteen years later, the Navy is still working diligently to uphold this law and protect the environment while executing its global military mission.

USS LAKE CHAMPLAIN (CG 57).

U.S. Navy photo by Photographer's Mate 2nd Class Jayme Pastoric

One way to reduce the amount of plastics in the ship's waste stream is to purchase non-plastic items in lieu of plastic items.

Paper versus plastic trash bags.

The Plastics Removal in the Marine Environment (PRIME) Program

Navy ships routinely operate for extended periods at sea with hundreds and sometimes thousands of personnel. These ships require huge quantities of supplies for operational success, many of which are disposable plastic products or items packaged with plastic materials. Since storage space for plastic waste is quickly depleted, plastics reduction is key.

The PRIME program is intended to reduce the amount of plastic and solid waste brought on board Navy vessels. By controlling the nature of the items that go aboard ships, the Navy is able to directly influence the composition of the waste stream ultimately produced during operations.

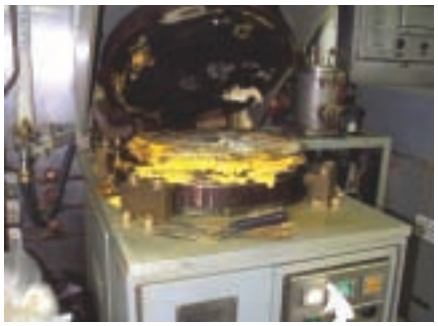
One way to reduce the amount of plastics in the ship's waste stream is to purchase non-plastic items in lieu of plastic items. For example, the paper towels used by the Navy consist of four plies of cellulose paper with nylon netting (scrim) material between the middle plies to give added strength and durability. When the tissue degraded in the ocean, the non-degradable scrim produced an unexpected problem. It resembled plastic fishnet that could trap sea animals or entangle in craft propellers and other marine machinery. Also, plastic scrim towels torment the sailors in the pulper room because the plastic filament clogs the system and the paper content does not process well in the shipboard Plastics Waste Processors. (See our story about Plastic Waste Processors in the fall 2003 issue of Currents entitled, "Improving the Fleet's Ability to Process Plastic Waste: Enhanced Shipboard Processors Compress Waste for Long-Term Storage.")

A completely biodegradable rayon scrim reinforced paper towel was developed and clearly demonstrated the ability to provide alternative non-plastic items for Navy use. Other examples of non-plastic substitute items developed for shipboard operations include:

- Disposable hot-drink paper cups,
- Powdered cleaners in water dissolvable packets, and
- Wet strength paper trash bags.

The PRIME program office created a substitution guide (Naval Supply Systems Command (NAVSUP) Publication 602) to assist ship personnel in ordering non-plastic substitutes.

Packaging is also a major contributor to the solid waste stream. Small apparently insignificant plastic items like pieces of plastic tape, plastic twines, and strapping, are problematic on board ships because separating them from non-plastic waste is labor intensive. Ship and support personnel can make a difference by removing as much packing and packaging as possible at the pier prior to deployments.



A view of the disk created after plastic items have been processed in the Central Melting Unit (CMU). These disks will be stored on board until they can be properly disposed of at a shore location.

Supply Officers Can Help to Reduce Plastics on Board Ships

Although plastics on board ships cannot be entirely eliminated, they can be significantly reduced. Supplies are still being ordered that contain plastic where non-plastic alternatives are readily available. Supply officers should take a few moments to review their ordering habits and see which ones can be modified. Requisitions should be reviewed to ensure that non-plastic items and alternatives are being ordered. Some environmentally friendly substitutes (including their National Stock Numbers (NSN)) are provided below:

BUY...	INSTEAD OF...
7-gallon paper bags (NSN 8105-01-284-2923)	10-gallon plastic bags (NSN 8105-01-195-8730)
8-ounce non plastic disposable hot drink cups (NSN 7350-01-359-9524)	8-ounce plastic coated paper hot drink cups (NSN 7350-00-162-3006) or 8-ounce Styrofoam hot drink cups (NSN 7350-00-082-5741)
6x9-inch cleaning pads packaged in a paper band (NSN 7920-01-383-7928)	6x9-inch cleaning pads packaged in a plastic bag (NSN 7920-00-753-5242)
12-inch wide sheet steel dustpan (NSN 7290-00-224-8308)	11.5-inch plastic dustpan (NSN 7290-00-616-0109)
Rayon scrim paper towels (NSNs 7920-01-370-1365 or 7920-01-370-1364)	Plastic scrim paper towels (NSNs 7920-00-823-9772 and 7920-00-823-9773)

For use on submarines, use Hydro entangled rayon [(NSN 7920-01-463-4653 (18-inch wide)) or (NSN 7920-01-463-4652 (36-inch wide))] as an alternative to terry cloth roll 36-inch (NSN 8305-00-965-4430 or NSN 8305-00-205-3065). Using this alternative item will produce significant savings. This material is eight times as absorbent as terry cloth, lint free, and about one third the cost. Further, 250 yards of the alternative can occupy the same space as 50 yards of terry cloth, consequently saving space aboard.

Many innovative research efforts are underway that will help in the quest to protect and preserve. These include marine degradable packaging material, biodegradable adhesives and gun plugs, food film wraps, as well as a completely biodegradable parachute for the sonobuoy.

Sailors & Their Personal Choices

Sailors can also reduce the use of plastics at sea. The following simple changes can have a significant impact on the volume of plastic waste aboard ships:

- Keep uniforms in garment bags instead of a plastic bag.
- Use rechargeable batteries.
- Use CD organizing cases instead of plastic jewel cases.
- Use an electric razor or a razor with replaceable blades.
- Take only as much food in the chow line as one can consume.
- Use regular matches.
- Use reusable mugs.
- Share magazine subscriptions (including Currents) with shipmates.
- Have names removed from junk mail lists.

Individual actions by individual sailors can help to ensure that the Navy's mandate of no at-sea disposal of plastic is met. ⚓

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