



AUTOMATED SHIPBOARD DISHWASHING SYSTEM (ASDS) | DoD CFD

PURPOSE:

The washing and sanitation of mess gear, cooking and serving utensils and disposal of foodservice waste (scullery functions) is currently an extremely labor-intensive operation for U.S. Navy shipboard personnel. These processes are almost entirely manual, with minimal modern equipment and limited automation. An integrated Automated Shipboard Dishwashing System (ASDS) is currently being developed to address and perform scullery responsibilities such as mess gear scrapping, sorting, soaking, washing, drying, and storing. The system will reduce manpower requirements associated with performing these functions and contribute to the Navy's goal of optimized crew sizes onboard naval vessels.



CHARACTERISTICS:

The ASDS is planned to utilize smart process controls that can automatically load, unload, sort, scrape, and inspect all shipboard dishware used onboard naval vessels. Earlier technological advances in scullery operations were centered on the improvement of dishwashers and washing agents that still required intense manual labor. This program will focus on innovative technology to construct a high speed automated system to accomplish all dishwashing and sanitation functions. The system is envisioned to include computer-controlled sensors and electronic components able to function in all shipboard environments and withstand shipboard motions and sea states.

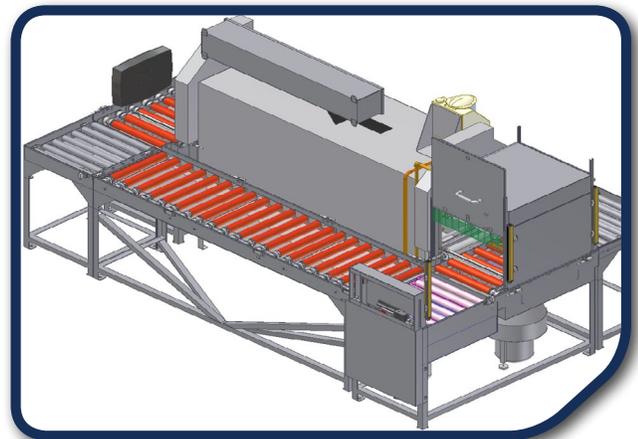


CAPABILITIES & BENEFITS:

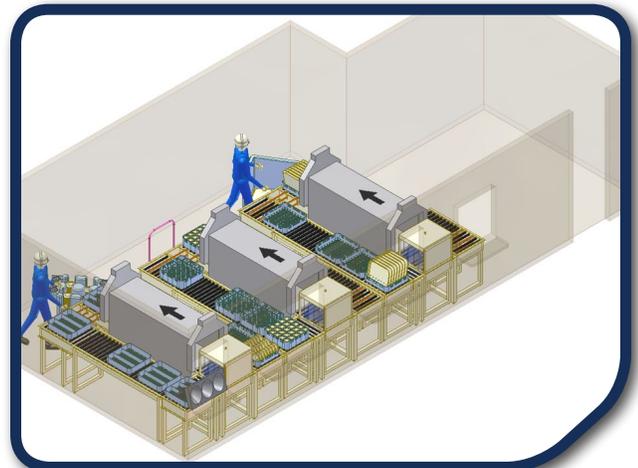
- Decrease Carrier scullery life-cycle costs.
- Improve efficiency of scullery operations.
- Reduce manpower requirement.
- Improve morale of Culinary Specialists & Food Service Attendants.

COMMENTS:

Currently, a prototype land-based ASDS that incorporates smart process controls is planned for demonstration. As part of the demonstration, the characterization of all maintenance procedures, systems diagnostics and prognostics, and projected lifecycle costs for all Navy shipboard platforms will be delineated.



Future efforts for this item include CFD SEET engineers partnering with PEO Carriers on a cost sharing initiative to support the demonstration of the ASDS configuration aboard a U.S. Navy ship. During this demonstration, documentation will be made for demonstrated manpower reductions, lifecycle cost projections, maintenance requirements, impacts and interfaces with other ship systems, and performance in the Navy unique environment. Also, a plan for integration of the ASDS concept on legacy aircraft carriers is expected to be developed.



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