

US Naval Sea Systems Command
Carderock Division Weekly Highlights
14 March 2001

CARDEROCK UPGRADES TO LCU SAVE \$

Approximately four years ago, Thordon Composite (non-metallic) main propulsion shaft bearings were installed on several LCU's, in accordance with technical instructions prepared by Carderock Division Det Norfolk, Combatant Craft Department (CCD), Code 23. In addition to the bearings, the shafting was upgraded using fusion coatings. The sleeve wear areas were fusion-coated with TSC-NCB-60, a non-corrosive nickel chrome boron coating, Rockwell C hardness of 60. The flanges were coated with TSC-NCB-20-20 for preservation and corrosion prevention. Fiberglass wrap was replaced with TSC Number 1000 Grey Plastic coating and rudder shafting i.e. posts or stocks upgraded. The bearing areas were also fusion-coated with TSC-NCB-60 and Thordon SXL rudder bearings were installed.

All grease fittings were plugged because the bearings no longer required lubrication other than seawater. Recently, these LCUs were dry-docked and inspected for wear and bearing clearances measured. After four years of operation at sea and with beach landings in an environment of mixed water and sand, bearing wear is minimal. The service and operation with the upgrades has been good and the shafting and bearings do not need replacing. Another four years of trouble-free bearing life is expected with the upgraded systems. Previously, during each regular overhaul, the LCU's received new Thordon bearings, upgraded shafting and the bearing housings in the stern tubes and struts are lined bored. The CCD upgrades developed resulted in significantly longer component service life and significant cost savings.

Point of Contact: G. Preedy, Code 2313 (757) 686-7614.

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US Naval Sea Systems Command - Carderock Division

The Carderock Division consists of approximately 3,800 scientists, engineers and support personnel working in more than 40 disciplines ranging from fundamental science to applied/in-service engineering. Headquartered in West Bethesda, Maryland, the Division houses world-class facilities and laboratories. A major operating site in Philadelphia is recognized as the center for naval machinery. The Division also conducts research and development at several remote sites across the country.

As a major component of the Naval Sea Systems Command the Carderock Division provides cradle-to-grave support for its technical products over an enormous range of scientific areas related to surface and undersea platforms. The Division addresses the full spectrum of applied maritime science and technology, from the theoretical and conceptual beginnings, through design and acquisition, to implementation and follow-on engineering. This includes all technical aspects of improving the performance of ships, submarines, military watercraft, and unmanned vehicles, as well as research for military logistics systems. In addition, the Division is uniquely chartered by Congress to support America's maritime industry.