

## U.S. MILITARY SEALIFT COMMAND TURNS TO THORDON

Thordon SXL flanged TRAXL bearings have been specified to replace the rolling element bearings in the Canard/Rudder lower bearing of four Victorious class vessels used in US Navy undersea surveillance operations.

The US Military Sealift Command (MSC) operates four T-AGOS ocean surveillance ships. These Small Waterplane Twin Hull (SWATH) vessels, operated by Maersk Line Limited (MLL) of Norfolk, USA, are designed for greater stability at slow speeds under adverse conditions.

The vessels originally used upper and lower rolling element bearings that operated in extremely high shock loads that would frequently destroy the 5150 rolling element

bearing. Work-hardened seals were allowing seawater ingress that would wash away grease, as well as flood the compartment with seawater. Another costly problem was the corrosion/erosionary effects on shafting as seawater would enter past the leaking outboard lip seals.

Gary Kubit and Tom Kiernan, the former and current T-AGOS Engineering Managers for Maersk identified the problems and worked with Thordon and it's distributor Seal-Pro Technology Group, Inc. to develop a solution. A Thordon SXL TRAXL bearing was recommended and the design was evaluated by Everet Brayan (Port Engineer for MLL) and Judy Delventhal (MSC Mechanical Engineering Supervisor). The first

SWATH conversion was at SW Marine, Long Beach, California.

"Following sea trials on the first SWATH conversion, *USNS Effective*, it was reported that the vessel's canards and rudders operated without vibration or leakage, a first since the vessel was built in 1993," according to Seal-Pro President, David Marshall. Marshall says the system works because the Thordon SXL TRAXL bearing can take very high shock loads and acts not only to dampen vibration, but also eliminates the need for greasing and related environmental concerns. The Thordon design distributes loading over a much larger surface area, reducing loads dramatically. In addition, a

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Thordon Thor-Flex inflatable maintenance seal was provided which will allow replacement change out of the Thordon shaft seal without docking... a time and cost savings measure that the Navy can appreciate.



USNS Effective was fitted with four Thordon SXL TRAXL Canard/Rudder bearings replacing the existing rolling element bearings.

## Tradeshows

Visit Thordon at these upcoming trade shows

Hydro  
**Hydrovision 2000** – August 8-11  
Charlotte, North Carolina, USA

Pump  
**PumpUsers Expo** – Sept. 12-14  
Louisville, Kentucky, USA


Marine  
**SMM 2000** – September 26-30  
Hamburg, Germany

## THORDON SOLUTION TO ABRASIVE-MEDIUM PUMP PROBLEMS

Sleeve bearings in vertical, medium lubricated pumps are a frequent source of problems. Poor shaft support, dry starts, high friction and rapid wear in abrasive services are some of the more common problems encountered. One of the common solutions to some of these problems is the addition of a sealed tube around the shaft with either a fresh water flush or oil/grease lubrication. This approach has a high initial cost and a continuing expense in the supply of fresh water or oil/grease and also has the potential for contamination of the medium being pumped. Jacksonville Electric Authority (JEA) of Florida has solved their abrasive wear problem by installing Thordon bearings.

Jacksonville Electric Authority has been using Thordon bearings in their riverfront circulating water pumps since 1996. "Over the past 3½ years, Thordon steel-backed GM2401 (Composite) bearings have held up well under brackish, high silt, river water application on 500HP vertical shaft circulating water pumps at Northside Station," stated John Kang, Director of Maintenance at JEA. John said, "In one incident, one of the pumps ran with minimal seal water for 24 to 48 hours due to a clogged sea water strainer. Past

experience with a different bearing material would have been catastrophic." John added, "This pump continues to operate with no deviations in vibration which is the primary indicator of pump bearing wear. We have also had excellent follow-up and professional service during the past three years of material evaluation from Thordon's Florida Distributor, Coppedge Marine."

JEA has initiated a complete inventory switch to Thordon Composite from cutless bearings for all circulating pumps. John added, "We believe that Thordon GM2401's superior material characteristics over cutless rubber enables it to be more resilient and resistant to silt and sand impregnation resulting in longer wear and stable pump operation." 

### Typical Bearing Abrasive Wear Rates

