

BERTH CONTROL: WHAT'S NEXT AS LEASES EXPIRE FOR FRENCH RIVIERA MARINAS, page 12

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## CAPTAIN'S LOG: TECH TALK

By Rich Merhige

# Shaft Seals

■■■■ IN YACHTING, NO TWO VESSELS are exactly alike, but there are issues that are more common than others. One of our most frequent service calls is to look into a leaking shaft seal. Basically, there are three different types of shaft seals: packing glands or stuffing boxes, lip seals, and mechanical seals.

Packing glands have flax packing (a waxy cord) wrapped around the shaft to prevent water flow. It's "packed" into a housing, compressing around the shaft to prevent leaks. These seals, by design, should only drip twice per minute. If it drips more frequently, tighten the packing nut to further compress the packing, and always keep the threads lubricated with either Teflon or Boeshield T-9. When tightening the nut no longer reduces the leaking, it's time to get new seals.

THE MOST CRITICAL TASK IN SEAL MAINTENANCE IS TO MAKE SURE THEY ARE GETTING PROPER WATER FLOW.

Lip seals, such as those by Tides Marine, are the most common on vessels. These seals are self-aligning, flexible, and dripless, making them extremely easy to maintain. Rubber rings (the lips) sit in the housing around the shaft. Any damage to the shaft, corrosion, or growth where the lips sit can cause them to wear, which in turn will cause them to leak. When these seals are installed, the spares are usually already in place. The damaged lip seal can simply be cut off and the spare slid into place.

Mechanical seals, like Wartsila's and PYI's, have carbon faces or seats, one mounted to the stern tube and one that's on the shaft and rotates. A retainer ring on the shaft keeps the faces pushed together. When these types of seals leak, it's usually due to a "burnout," a lack of proper water flow to the seals. The Wartsila seal has a built in emergency inflatable seal that can be used if a leak becomes present.

The most critical task in seal maintenance is to make sure seals are getting proper water flow. Most yachts have water injection lines that come off the engine's raw water cooling system. This should be monitored on a regular basis to make sure it's in good working order. Water flow is so crucial it even needs to be in place for cooling if the shaft is locked. Lack of cooling/water flow is the most prevalent cause of seal failure. Other forms of seal damage, such as wear, tear, or fracture, could be an indication of a bent shaft or major misalignment. When damage like this is visible, it's best to call in a reputable service company, specifically a contractor authorized or certified by the seal manufacturer, to perform the service work. **DW**

ASK THE EXPERT  
TECHNICAL QUESTIONS  
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