



Navy SBIR/STTR Success



HydroActive Bulkhead Shaft Seal

Midé's bulkhead shaft seal offers a safe and low total ownership cost solution. By not contacting the shaft during normal operation, the seal does not pre-maturely wear – saving substantial maintenance dollars and ensuring its efficiency.

Topic Number: N04-073

SBIR Investment:
\$2,683,029

Phase III Revenue:
\$11,406,857

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About the Technology:

Bulkhead shaft seals are critical safety components that stop progressive flooding between watertight compartments where a shaft penetrates the bulkhead. Most bulkhead seal technology is based on a "contacting approach" where sealing materials are always in contact with the spinning shaft, causing seals to pre-maturely wear or fail. Midé has developed a hydrogel activated bulkhead shaft seal that only comes in contact with the shaft during a flooding event. This approach allows for more relaxed installation and operation requirements including the ability to mount the seal in a vertical configuration.

Naval Benefit

Faulty bulkhead seals could cause flooding to progress in the ship and ruin expensive machinery assets and compromise the crew's safety and ability to contain the flood. Along with the unreliable nature of the faulty bulkhead seals which compromise ship safety, frequent maintenance and expensive spare parts have led to high maintenance costs. The benefits of Midé's bulkhead shaft seals to the Navy are a safer fleet with reduced maintenance costs including relaxed installation and system requirements due to the non-contacting nature of the seal and the ability to allow for more shaft motion and vibration during operation. Midé's bulkhead shaft seals have been installed on 18 DDG Arleigh Burke-class destroyers and 2 Littoral Combat Ships.

Transition

Through a five year development effort which included a commercialization pilot program, Midé developed the Reliant model bulkhead shaft seals. The seals were designed and tested to strict Naval standards including shock, vibration and multiple 1000-hour lifetime tests. Based on the success of its military grade Reliant seals, Midé invested its own resources in developing the Omni line of commercial grade bulkhead shaft seals. 10 percent of Midé's seal revenue in 2012 came from the commercial marine market, while their remaining revenue continues to stem from sales and installations to the US Navy.



Midé Technology Corporation

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