



Navy SBIR/STTR Success

MK 54 MOD 1 Lightweight Torpedo (LWT)

Improving torpedo effectiveness in shallow littoral regions and countered environments



Progeny Systems

Founded 1995
High-tech small business providing software and hardware product development, systems integration, and manufacturing
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TOPIC NUMBER:
N96-278

Navy S&T Investment (SBIR/RIF):
\$2,969,585

PHASE III FUNDING:
Contract value:
\$379,636,272
Obligated:
\$112,164,800

THE TECHNOLOGY

The MK 54 MOD 1 employs a new 112-element sonar array coupled with a high fidelity receiver, a high power transmitter and a new Processor Group Assembly to improve target detection and tracking of small, quiet, diesel-powered submarines in shallow littoral regions or countered environments. The system can be launched from conventional shipboard torpedo launchers and anti-submarine rocket systems. The system can also be air-launched via fixed (P-8A / P-3C) and rotary (MH-60R) wing ASW platforms.

THE CHALLENGE

The submarine threats facing our Navy have expanded. In addition to the threat of nuclear submarines operating in open ocean, smaller, quieter, slower, diesel powered submarines from a variety of nations now patrol littoral waters. For a torpedo to be effective, it needs to detect, localize and track these new threats.

THE NAVAL BENEFIT

The MK 54 MOD 1 LWT Sonar Assembly enhances the torpedo's ability to detect slow moving targets in shallow water and countered environments. The MK 54 MOD 1 is expected to provide increased weapon effectiveness against all submarine targets without increasing system volume, weight or power thereby minimizing the changes required to the launch platform.

THE TRANSITION

Acquisition Sponsor: NAVSEA PMS404. Six Sonar Assemblies were delivered to NAVSEA PMS404 on schedule and under budget. Each Sonar Assembly included the 112 element array, Receiver, Transmitter, Processor Group Assembly and W4 Cable. The Rapid Innovation Fund (RIF) units have been deployed in multiple developmental test runs in representative operational conditions such as deep water and littoral environments with launches from both aircraft and surface craft. The addition of these assets reduces the MK 54 MOD 1 Developmental Test (DT) timeline and costs.

THE FUTURE

Based on continued successful test results, the Navy has placed an order for 80 Low Rate Initial Production (LRIP) units and plans to procure a total of 1,000 units as part of the MK 54 MOD 1 program of record.

"The SBIR technologies brought to bear on the MK 54 MOD 1 development effort resulted in an exceptionally capable and durable torpedo. The SBIR and RIF investments provided new capabilities and paved the way for procurement of torpedoes for the war fighter that addresses increased threats facing our Navy today."

Bill Sylvester, Business Area Manager, Sonar Sensors, Transmit Systems and Torpedoes Group, Progeny Systems