



Minimizing Lead Exposure from the MK-48 Torpedo Flex Hose Ballast Tape

SBIR N2003-020

Problem

Need: The Navy has established strict controls to limit both occupational and environmental exposures to lead.

Operational Gap: A lead tape is used within the Flex-Hose as a ballast to prevent entanglement with the guidance wire when deployed. The tin-plated lead tape can breakdown, exposing sailors to lead dust.

Specifications:

- MIL-STD-810F
- Minimize lead exposure
- Compatible with existing Mk10 Mod 2 TMD design & mates with existing connections

Applications: Mk48 Mod 5 and Mod 6 Advanced Capability (ADCAP) Heavyweight Torpedo, UK Spearfish Torpedo, Other Ballast Systems

SYSCOM: NAVSEA
PEO/PMA/FNC: PEO SUB

Phase II Technology Development

Development Milestones Achieved	Date	TRL
Material Selection	Dec 2005	2
Testing to MIL-STD-810F	Jan 2006	2
Initial Prototypes	Oct 2006	4

Teaming: Cortland Cable, the manufacturer of the current Flex-Hose assemblies, has subcontracted to TRI/Austin to assist in developing a path to manufacture that will require minimal changes in current manufacturing facilities.

Phase II Contract: N00024-05-C-4136
Contract Closed: January 31, 2008

Technology Overview

The new ballast tape is encapsulated with LDPE to minimize production cost and protect the sailor and the environment.

In addition to cost advantages, this approach had minimal impact on the current manufacturing process of the Flex Hose assembly.



LDPE encapsulated tin lead tape on left. Flex Hose assembly on right.

Transition Status

Fifty Flex Hose units have been delivered to PEO SUB for Sea Tests. Courtland Cable will be using the new design for future Flex Hose units.

Transition Milestones	Date	TRL
Manufacturing Plan	Nov 2007	7
Drawing Modifications	Nov 2007	7
Delivery of 50 initial units	Nov 2007	7
Sea Tests	2008	8-9

To discuss other applications for this technology contact:

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