

Shaped Charge Munition Manufacturing Technology Available

C0887 - Low Cost Shaped Charge Munition Manufacturing



OBJECTIVE

The objective of this project was to demonstrate a manufacturing process that linked both the shaped charge munition manufacturing design and assembly to reduce costs. A novel shaped charge concept to neutralize mines was demonstrated during the Distributed Explosive Mine Neutralization (DEMNS) program. The shaped charge generates a jet with a mid-stream consolidated mass (lump). The jet, with a velocity greater than the lump, is designed to penetrate any mine overburden. The lump has sufficient impact energy to initiate the explosive fill of the mine. Two main thrusts were undertaken to reduce the overall cost of fabricating this shaped charge while maintaining its performance for mine countermeasures applications. One was the implementation of a two-piece (plastic/metal) liner configuration and the second was injection loading of the explosive fill.

PAY OFF

The concept for mine neutralization via the shaped charge munition was being transitioned to the Army/Marine Corps Explosive Standoff Minefield Breacher, Marine Corps Joint Amphibious Mine Countermeasures, and Navy Beach Zone Array. The following was achieved to minimize the shaped charge munition cost: reduced the number of components, reduced the number of precision interfaces, and reduced the number of precision Surfaces, and used the most efficient explosives load and assembly process.

IMPLEMENTATION

Excellent technical progress was accomplished during the execution of this project. The project was closed-out at the end of the third quarter 1998 due to elimination of program office requirements. However, the technical developments are available for transition if the need resurfaces. Results of this project were published and are available to US industry. Overall results were presented to Navy Systems Command managers and resource sponsors.

Period of Performance
Jun 1997 to Jun 1998

Stakeholder
MARCOR, PM CSLE

Performing Activity
EMTC

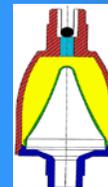
Point of Contact
Mr. Charles R. Painter
(301) 744-6772
charles.r.painter@navy.mil



EXPLOSIVE
INJECTION
LOAD
TECHNOLOGY



NOVEL LINER
MANUFACTURING
TECHNOLOGY



LOW COST
SHAPED
CHARGE
MUNITION



EXPLOSIVE
STANDOFF
MINEFIELD
BREACHER

Total ManTech Investment
\$1,208,000

Please visit the Navy EMTC Web site:

<http://www.navsea.navy.mil/nswc/indianhead/codeCA/EMTC/main.aspx>

Approved for Public Release; unlimited distribution; November 2012; Indian Head Log # 12-159