

## **LSD-41 to Ballistic Missile Test & Evaluation Platform (Conversion)**

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The Ballistic Missile Test and Evaluation (BMT&E) ship conversion study provides a practical method of testing our nation's current and future Ballistic Missile Defense (BMD) capabilities. BMD consists of layers of overlapping defenses that protect against incoming ballistic missiles in the boost, midcourse, and terminal phases of flight. Defensive measures are currently executed from land based, sea based, and airborne platforms each having a specific phase of flight that can be defended against. As testing progresses it is imperative to be able to launch test missiles from different geographic areas to ensure acceptable defensive effectiveness no matter where a potential ballistic missile may be launched from. The BMT&E platform will be able to accomplish test missile launches from differing geographic areas and allow all current and future BMD systems to assess their kill effectiveness.

An emphasis will be placed on the US Navy's role in BMD. Currently, the Navy has 10 Destroyers and Cruisers participating in BMD. These ships are AEGIS equipped with Standard Missile-3 Interceptors (SM-3) and have the capability to provide short to intermediate range defense in the midcourse phase. Current ships are S-band capable which allows early warning and Long Range Surveillance and Tracking (LRS&T) capabilities for Inter-Continental Ballistic Missiles (ICBM). The tracking data is transmitted to ground based defense systems to allow for ICBM defense. The next generation of Destroyers will also have X-Band capabilities and will ideally provide a sea based BMD system that can defend against any ballistic missile in the ascent/boost or midcourse phase. The BMT&E platform will have a dual band radar (X and S band) as well as AEGIS systems to allow for testing of future BMD systems. This will ensure the effectiveness of the next generation of Destroyers and Cruisers in their BMD roles.

The main focus of the conversion is to ensure the capability exists to test any phase of BMD systems for the next 10 years. The addition of electrical generating capacity will allow for a dual band radar as well as ensuring electrical capacity for systems to be tested in the future. AEGIS upgrades in the control room will ensure the BMT&E ship will have the same capabilities as the next generations of US Naval warships. The missile launch platforms will be built with a focus towards modularity as well as safety to allow for efficient testing. The ship's geometry is unchanged from that of the LSD 41. The BMT&E ship was found to be stable for all loading conditions. The MIT math model along with NAVSEA-05C cost data estimates a BMT&E ship conversion cost of \$104M (FY 2008\$).

Principal Characteristics	
LBP (ft)	580
Hull LOA (ft)	608.7
Beam, DWL (ft)	84
Depth at STA 10 (ft)	53
Draft to Keel, DWL (ft)	19.5
GMt (ft)	8.1
Cp	0.604
Cx	0.946

Loading Comparison		
	LSD 41	BMT&E
Lightship Displacement (LT)	11041	11104
Full Load Displacement (LT)	15855	16127
Deadweight (LT)	4814	5023

Cost	
Conversion Cost	\$104.1M
Annual Operating Cost (over 10 years)	\$241.0M
Total Life Cycle Cost (2008)	\$345.1M