

Improving the Parametric Method of Cost Estimating Relationships of Naval Ships

LT Ungtae Lee, USN

Dr. Eric Rebentisch	Prof. Mark Thomas
Thesis Supervisor	Thesis Reader

In light of recent military budget cuts, there has been a recent focus on determining methods to reduce the cost of Navy ships. A 2006 RAND National Defense Research Institute study showed many sources of cost escalation for Navy ships. Among them included characteristic complexity of modern Naval ship, which contributed to half of customer driven factors. This paper focuses on improving the current parametric cost estimating method used as referenced in NAVSEA's Cost Estimating Handbook. Currently, weight is used as the most common variable for determining cost in the parametric method because it's a consistent physical property and most readily available. Optimizing ship design based on weight may increase complexity because it tends to decrease the size of a ship. This paper will introduce power density and outfit density as additional variables to the parametric cost estimating equation and will show how this can improve the early stage cost estimating relationships of Navy ships.

Master of Science in Naval Architecture and Marine Engineering
Master of Science in Engineering and Management