

Feasibility Assessment of a Naval Surface Fire Support Capability for the Mono-Hull Variant of the Littoral Combat Ship

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With the conclusion of major force deployments to Afghanistan, the Department of Defense (DoD) is refocusing on the vast Asia-Pacific region, increasing the likelihood of future expeditionary and amphibious operations. To improve its ability to operate in the congested littorals of this region, the United States Navy (USN) continues to develop and procure the Littoral Combat Ship (LCS), a high-speed, modular, multi-mission platform. Inevitably, future littoral operations will increase the necessity for effective Naval Surface Fire Support (NSFS), as provided by shipboard gun and missile systems.

This study was sponsored by Naval Sea Systems Command (NAVSEA) to assess the feasibility of providing a near-term NSFS capability for the mono-hull variant of the LCS. The proposed NSFS mission module includes components of the High Mobility Artillery Rocket System (HIMARS), a proven combat system that supports modern ground operations. The project team assessed the overall feasibility of the converted ship design by considering unique interface requirements, vessel stability, structural strength, seakeeping performance, design costs, and cumulative technical risk.

Ultimately, the project team determined that the mono-hull variant of the LCS could successfully support an NSFS capability. Successful integration of the proposed NSFS mission module would require modification of the LCS superstructure and additional development of control algorithms for the HIMARS Fire Control System (FCS).

