

Executive Summary

In an effort to maximize the utility of the Littoral Combat Ship (LCS), designers envisioned a ship capable of carrying modular, rapidly re-configurable payloads, which would allow commanders to quickly tailor the LCS to suit a wide range of fleet missions. One of several mission packages planned for the LCS was a Mine Warfare (MIW) suite, considered to be an adequate replacement solution for the aging Avenger Class Mine Countermeasures (MCM) fleet. As a part-time capability, this organic but very limited mine warfare package seemed a reasonable fit for the high speed, high cost LCS; however, now that the Navy is abandoning the idea of rapid ship reconfiguration and adopting a “stay as you are” doctrine for the LCS (Cavas, 2012.), it is easy to question why a 40 knot corvette like the LCS should be permanently relegated to mine sweeping duties – a mission that could be accomplished by a much slower, more economical asset.

While the Navy ponders the optimal (permanent) mission(s) for the LCS (Cavas, 2012.), it is clear that MIW should not be one of them. The LCS is an expensive ship due to her high speed, powerful gun, and state of the art engineering. Assigning such a ship permanent MCM duties would be a poor utilization of those capabilities. In addition, the LCS cannot carry adequate equipment to provide effective MIW services for a sizeable battle force, and cannot carry the MH-53K helicopter; the only asset presently capable of pulling Mk-105 sleds or towed SONARs in all weather conditions.

This project proposes a new design, the Mine Countermeasure Support Ship, MCS(X): a more economical platform capable of providing organic MCM capability to a battle force, such as an Amphibious Ready Group (ARG). The MCS(X) would carry out comprehensive mine search and sweep services, allowing the LCS to conduct other duties requiring her speed and armament. While slightly more expensive per-unit than the LCS, the MCS(X) can carry MIW capability equivalent to three times over that of the LCS, and can remain organic to the battle force, a capability not provided by the current Avenger Class sweeper ships. Successful MIW tactics continue to be a significant challenge to Navy war planners today; a challenge MCS(X) can meet.

This concept design illustrates how a relatively simple yet sizeable ship with a large hangar and mission bay can effectively clear a carrier strike group (CSG) operating box at least three times faster than an LCS with MCM Mission Module, yet cost only 20% more than the LCS.