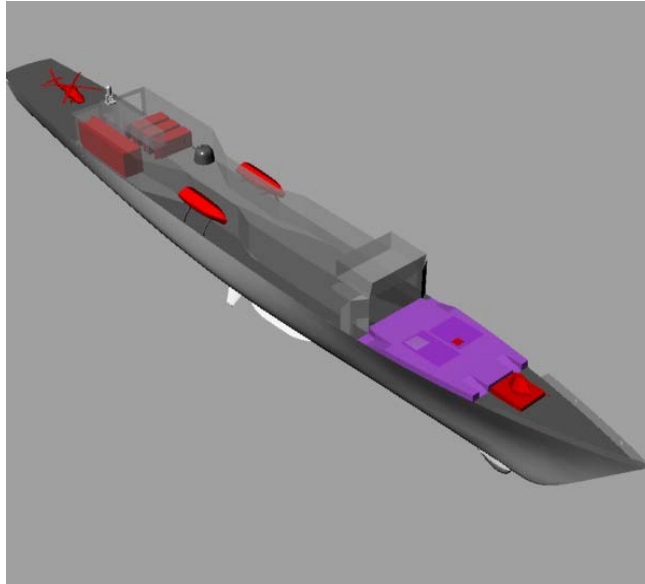


FFG-7 to LCS Mission Module Carrier (Conversion)

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Due to cost over runs and contract disputes, the LCS program has experienced major delays in its full integration into the Fleet. Because of this anticipated delay, it is prudent for the Navy to consider other options for filling the existing capability gaps. Pre-existing modular mission packages (MMP), which are the keystone to the LCS program have already been well defined and are nearing completion. Given the current state of the LCS program and the maturity of the packages, placing an MMP on an existing host platform is worthy of serious consideration. A team of three individuals at Massachusetts Institute of Technology (MIT) was tasked with determining a strategy and the modifications required to enable an FFG 7 hull to effectively employ an LCS MMP.

The team's strategy involved determining a sound overall approach to address issues such as MMP selection and reconfigurability. The modification portion involved the engineering required for the conversion and the analysis of the results. Deliverables from this study include the conversion strategy, applicable drawings, stability, strength, and sea keeping analysis, as well as a cost estimate.

The design team determined that the focus of this study was on converting the FFG 7 to accept the LCS Surface Warfare (SUW) mission package. The mission package must be able to be installed and removed relatively quickly. The only modification of any type to the package was that only one of the two 30mm guns was accommodated. The existing CIWS Block 1B organic to the FFG 7 substitutes as the other 30mm gun.

Results of this study indicated that the LMP frigate is fully capable of executing the SUW mission in littoral waters with high success in a low to medium threat environment scenario. Although the FFG 7 can be modified to employ the SUW mission package, other missions such as the mine warfare (MIW) and anti-submarine warfare (ASW) would be more challenging. Although not performed during this study, future concept explorations could include modified ASW and MIW packages.

Characteristic	Converted FFG 7	Littoral Combat Ship	
		Threshold	Goal
Speed	29 kts	40 kts	50 kts
Endurance Range	4100 nm	3500 nm	4300 nm
MP Payload	185 MT	180 MT	210 MT
MP Type	SUW	SUW, MIW, ASW	
Draft (navigation)	26 ft	20 ft	10 FT
Manning	217	100	75
Helo/UAV Ops	SS5	SS4	SS5
Watercraft Ops	SS4	SS3	SS4
Provisions	28 days	14 days	21 days
MP Change out	2 days	4 days	1 day
Procurement Cost	\$25.6M	\$220M	\$150M