The LCS: Much more than a "truck"

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The littoral combat ship (LCS) is moving ahead with fervent activity and contracting.[1] Many issues need quick resolution or the procurement timeline will begin to slip. One critical issue points toward philosophical, operational, and industrial implications: Does the Navy and nation require one platform or two different platforms to meet littoral operations requirements?

Some are advocating that all littoral requirements should be met by one ship while others suggest that there are actually two quick different mission sets that should imply two different solution sets toward littoral operations. The question is whether the same platform can effectively meet two disparate mission sets: capability carrying (e.g., logistics and mobility missions) and warfighting (e.g., engaged in surface warfare operations such as fighting swarming small boats).

The term "truck" (or "sea frame") is used in reference to the LCS class. (Not to be confused with what was the LSC (Littoral Support Craft) which ONR is now experimenting with under the “X-Craft” label. The X-craft is providing an experimentation platform for littoral warfare technologies. As some conceived it, the LSC was a capability carrier – a platform to respond to the requirement to develop means for moving materials and personnel around a theater between the less expensively than airlift speed and far faster than traditional sealift. This is what the Army is doing with Theater Support Vessels (TSVs) and part of the joint High Speed Vessel (HSV) effort.) Returning to the "truck", the truck concept is that the basic ship hull, mechanics, and engineering (HM&E) package is nothing more than a vehicle on which to throw varying packages, whether cargo (vehicle or containers), personnel, or combat weapons suites.

When it comes to airframes, the C-130 Hercules airlifter provides the best "truck" (or "sea frame") analogy with cargo (C), refueling (KC), electronic and psychological warfare (EC), and other variants. This analogy, however, provides a useful cautionary tale. Even the most combat-capable C-130 variant, the special forces AC-130 SPECTRE gunship, was restricted to nighttime only operations over Afghanistan, in airspace that the United States totally controlled. Thus, even the most capable C-130 "truck" variant was restricted to the byways, rather than highways, of combat environments.

On the first night of Operation Iraqi Freedom, when the nation needed aircraft to go downtown to strike a time-critical target (a potential hideout of Saddam Hussein), it sent stealth aircraft and missiles launched from Navy platforms, not a C-130 variant.

In terms of naval airframe analogies over time, the closest comparison for the C-130 might be with the C-2. The C-2 has come in early warning (E-2C) and cargo (C-2) variants with concepts developed over the years for refueling and other platform variants. As with the C-130, these aircraft play extremely important roles but do not go “downtown” in the face of enemy air defenses.

An even better and more telling comparison might be with the A-6

[1] Appeared as “Take More Than a Truck Into a Fight,” *Defense News*, May 5, 2003.

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Intruder attack aircraft. The A-6 also came in multiple variants (A-6, EA-6, KA-6) but, unlike the C-130, was expected to – and did – go downtown in Vietnam and elsewhere.

Another analogy for the "sea frame" exists in naval operations in the littoral as the LCS will not be the only element of the naval services operating in the littoral – after all, that is where amphibious forces earn their keep. For the LCS, there is a useful analogy in the ship-to-shore movement challenge. Both the LCAC and AAV (soon to be AAAV) move forces from ship to and across the beach. The LCAC is a truck optimized to move personnel and equipment from ship to shore. While there have been a variety of concepts for fighting from LCACs (such as to put mine breaching charges aboard), the truth is that a LCAC's true specialty is providing a means to help Marines outflank the enemy by putting them quickly where the enemy isn't. In contrast, AAVs/AAAVs don't just bring Marines to the beach, they are critical fighters once ashore.

If the nation requires (and I think it does) vessels to quickly move supplies and personnel around theater – as was done with catamarans in the Persian Gulf during Operation Iraqi Freedom – then a requirement exists for a high-speed truck. And, as with trucks on the highways, the "containers" can change with differing requirements as our movement requirements shift. This "truck", however, would make (at best) a mediocre compromise for warfighting - as opposed to carrying warfighters (and/or their supplies/equipment) to where they need to fight.

The littoral warfare environment is described as potentially the most hostile environment for naval forces in the 21st century. As such, the warfighter requires a platform that is intended for the highways – and not the byways – of combat operations. Optimizing for rapid cargo movement and for fighting in that high-threat environment might be objectives fundamentally at odds with one another.

In short, the "truck is good enough" analogy could have dangerous ramifications for the warfighter by leading to a vessel that will be inadequate to stand up and fight amid the significant threats in the littoral battlespace.