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Know When to Hold 'Em, Know When to Fold 'Em: A new Transformation Plan for the Navy's Surface Battle Line

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Resources: Forces & Capabilities

When hearing the term "ships-of-the-line"—warships that take their place in a navy's line of battle—most think of old two- or three-deck sailing ships carrying large cannon batteries, or perhaps steam-powered, armored battleships. Since entering the age of jet aircraft, guided missiles, and nuclear-powered submarines, however, the US Navy's "surface battle line" consists of battle force capable (BFC) surface combatants—large, multi-mission and focused-mission warships designed first to operate as part of a fast Carrier Strike Group. These include guided missile cruisers (CGs), guided-missile destroyers (DDGs), and general-purpose destroyers (DDs). Battle force capable combatants are separate and distinct from legacy protection of shipping combatants (now known as frigates and guided missile frigates) and newer littoral combat ships, both of which are smaller, and less capable, focused-mission warships.

Today, the Navy's fleet of BFC combatants consists of 22 Ticonderoga-class CGs and 50 Arleigh Burke-class guided-missile destroyers. If not the finest warships of their types in the world, they are among the very best. All 72 vessels are equipped with the superb SPY-1 phased array radar and Aegis anti-air warfare combat system, which together are often described as comprising "the most advanced anti-air system in existence, land-based or naval." Their main batteries consist of the Mk-41 Vertical Launch System (VLS), a flexible, modular guided missile system consisting of groups of missile cells nestled in the hull, each capable of storing and launching the following types of battle force missiles: land-attack cruise missiles; ballistic missile interceptors; surface-to-air missiles; anti-submarine rockets; or, with proper modifications, any other type of guided missile that can physically fit inside the 25-inch by 25- inch cell. Alternatively, a single cell can be configured to carry four smaller short-range surfaceto- air missiles in a so-called "quad-pack" arrangement. The Mk-41's modular weapons flexibility allows the Navy to tailor the battle line's missile load to account for the most likely threats, and allows it to meet emerging threats with newly-designed missiles rather than brand
new ships.

An additional 12 Burke DDGs are either authorized or under construction. When the last of these ships is commissioned in 2011, the Navy's surface battle line will consist of 84 state-of-the-art Aegis/VLS combatants, with 84 common air defense radars and a distributed main battery consisting of no less than 8,468 VLS cells—an aggregate missile capacity greater than that found on all of the major warships in the world's next 17 largest navies. The battle line's secondary battery will be equally impressive: 106 5-inch naval guns; up to 672 Harpoon anti-ship cruise missiles or its land attack variant; 168 Phalanx close-in weapons systems for terminal missile and anti-boat defense; and 504 ready-to-fire anti-submarine homing torpedoes (with more in onboard magazines). The force will also be able to hangar up to 112 MH-60R Seahawk helicopters. No other line of battle in the world will be come close to matching the firepower and multi-mission capabilities associated with this impressive assemblage of ships.

The Navy is now in the early stages of a general transition to a next-generation battle line. The first step in the transition began in Fiscal Year 2007 with the authorization of the first two of seven planned Zumwalt-class DDG-1000s—very large multi-mission BFC combatants with an advanced stealth design, a new anti-air warfare combat system, a new integrated electric power and propulsion system, and a host of other technological advances. These seven ships are to be followed by 19 CG(X)s, multi-mission guided-missile cruisers (supposedly with the same hull as the DDG-1000) optimized for fleet air and missile defense. These 26 ships will be followed, in turn, by an entirely new DDG(X), which will replace the 62 Burke-class DDGs soon to be in service. Depending on the final building rate of the DDG(X)s (two or three per year), the last of the DDG(X)s will be commissioned sometime between 2046 and 2056. Assuming a 35-year service life, the last Aegis/VLS combatant, DDG-112, will leave the fleet in 2046.

This approach represents at least the third transformation plan for the Navy's future surface battle line developed in the last ten years:

• During the 1997 Quadrennial Defense Review (QDR), the Navy planned to do away with small combatants entirely, opting instead for 116 large BFC combatants, divided into a "high-end" group composed of 84 legacy multi-mission guided-missile cruisers and destroyers (27 Ticonderoga CGs and 57 Burke DDGs) and a "low-end" group composed of 32 new focused-mission DD-21 land-attack destroyers. This represented a 72/28 "highlow" capability split among US Navy surface combatants.

• With the DD-21's costs steadily climbing, after the 2001 QDR the Navy reclassified the ship as a multi-mission destroyer (DD(X)). The planned new 375-ship Global Concept of Operations Navy included a battle line consisting of 88 Aegis/VLS ships and 24 DD(X)s.

These 112 multi-mission ships would be augmented by 56 small, focused-mission Littoral Combat Ships (LCSs). The combined 168-ship surface combatant fleet had a 67/33 "high-low" surface combatant capability split.

• With the DD(X)'s costs still escalating, the Navy reclassified the ship yet again, this time as a multi-mission guided-missile destroyer (DDG-1000). However, the high cost of the ship required the Navy to dramatically reduce its planned production run. The recently announced 313-ship Navy includes a surface combatant fleet of 143 ships, split between a multi-mission battle line of seven DDG-1000s, 19 CG(X)s, and 62 DDGs or follow-on DDG(X)s, augmented by 55 of the new small, multi-purpose, focused-mission LCSs.

This new plan now shoots for a 61/39 "high-low" capability split. If nothing else, the tortured lineage of the DD-21/DD(X)/DDG-1000 clearly demonstrates the declining usefulness of classic ship designators such as "destroyer," "guided-missile destroyer," and "guided-missile cruiser." Such terms are now essentially decoupled from ship size and displacement. They are used instead to separate ships in terms of the overall capabilities of their combat systems. By using both size and capabilities to classify ships, however, one sheds light on the Navy's most recent transformation plan. With apologies to the Navy's current ship titles, under current plans the future surface battle line will have three distinct tiers. The top tier will consist of 26 large and expensive multi-mission "CG-21s" (21st century "cruisers) based on the "DDG-1000" hull: seven will carry two 155mm (6-inch) advance gun systems (on ships now known as the DDG-1000) and 19 will replace one or both gun systems with additional missile cells filled with new long-range SAMs and anti-tactical ballistic missile interceptors (on ships now known as CG(X)). The middle tier will be defined by 62 multi-mission Arleigh Burke DDGs or futuristic DDG(X)s. Finally, the bottom tier will consist of 55 focused-mission LCSs.