The Roles of Major Types of Ships in the Navy’s Fleet

(Text is excerpted from “An Analysis of the Navy’s Fiscal Year 2012 Shipbuilding Plan,” Congressional Budget Office, June 2011, DTIC Document ADA545315)

The Navy’s 11 aircraft carriers are the heart of the battle force fleet. Each carries an air wing of about 60 aircraft, which can attack hundreds of targets per day for up to a month before needing to be rested. Carriers are by far the largest ships in the fleet, with a weight (displacement) of about 100,000 tons. Ten of the 11 current carriers belong to the Nimitz class.

Strategic ballistic missile submarines carry the major part of the U.S. nuclear deterrent, up to 24 Trident missiles with four to eight nuclear warheads apiece. The Navy has 14 Ohio class ballistic missile submarines in the strategic role and has converted 4 more to a conventional guided missile (SSGN) configuration, each of which displaces about 19,000 tons submerged. Those SSGNs carry up to 154 Tomahawk missiles as well as special-operations forces.

Attack submarines are the Navy’s premier undersea warfare and antisubmarine weapon. Since the end of the Cold War, however, they have mainly performed covert intelligence gathering missions. They have also been used to launch Tomahawk missiles at inland targets in the early stages of conflicts. The Navy has 53 attack submarines, 44 of which belong to the Los Angeles class. At 7,000 tons, they are less than half the size of ballistic missile submarines.
Large surface combatants – which include cruisers and destroyers – are the workhorses of the fleet. They defend the Navy’s aircraft carriers and amphibious warfare ships against other surface ships, aircraft, and submarines. They also perform many day-to-day missions, such as patrolling sea lanes, providing an overseas presence, and conducting exercises with allies. In addition, they are capable of striking land targets with Tomahawk missiles. Different types of surface combatants have displacements ranging from 9,000 to 15,000 tons.

Small surface combatants are frigates and, in the future, littoral combat ships. Frigates today are used to perform many of the same day-to-day missions as large surface combatants. Littoral combat ships are intended to counter mines, small boats, and diesel electric submarines in the world’s coastal regions. More routinely, they will also participate in patrolling sea lanes, providing an overseas presence, and conducting exercises with allies. These ships range in size from 3,000 to 4,000 tons.

The Navy’s two classes of amphibious assault ships (also known as large-deck amphibious ships or helicopter carriers) are the second largest ships in the fleet at 40,000 tons. They form the centerpiece of amphibious ready groups, and each can carry about half the troops and equipment of a Marine expeditionary unit. They also carry as many as 30 helicopters and 6 fixed-wing Harrier jump jets, or up to 20 Harriers.
The many logistics and support ships in the Navy’s fleet provide the means to resupply, repair, salvage, or tow combat ships. The most prominent of those vessels are fast combat support ships, which operate with carrier strike groups to resupply them with fuel, dry cargo (such as food), and ammunition. These ships can be as small as 2,000 tons for an ocean-going tug or as large as 50,000 tons for a fully loaded fast combat support ship.

The Navy has four other classes of amphibious warfare ships, and such ships are divided into two types: amphibious transport docks and dock landing ships. Two of those ships together provide the remaining transport capacity for a Marine expeditionary unit in an amphibious ready group. They range in size from 16,000 to 25,000 tons.