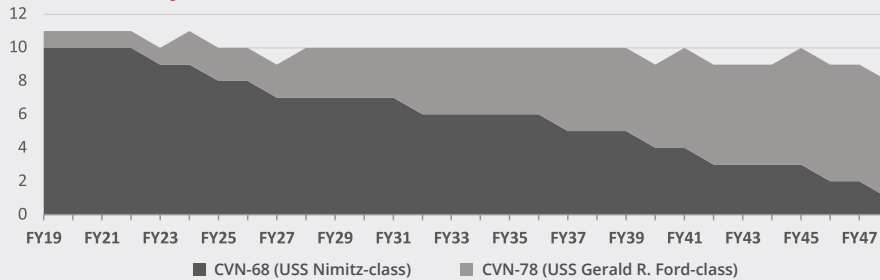


Strengthening the Aircraft Carrier Industrial Base

HIGHLIGHTS:

- Nuclear-powered aircraft carriers (CVNs) are mobile airfields that respond to crises and operate near areas of conflict without restrictions imposed by host nations.
- With the F-35C Lightning II, U.S. Navy aircraft carriers now deploy stealthy, 5th-generation aircraft equipped with the most advanced sensors, command and control systems.
- The aircraft carrier supply chain depends on a steady, predictable aircraft carrier construction and maintenance schedule.

Early Retirement of CVN 75 Shrinks the Aircraft Carrier Fleet



The U.S. Navy's projected FY2020 Shipbuilding Plan, including early retirement of USS *Harry S. Truman* (CVN 75), would threaten the already-fragile shipbuilding industrial base and shrink the aircraft carrier fleet to 10 ships, rather than the "not less than 11 operational aircraft carriers" currently required by law.

THE U.S. NAVY NEEDS 12 AIRCRAFT CARRIERS

- The U.S. Navy needs 12 CVNs to sustain its overseas posture. At any given time, 2 aircraft carriers are deployed overseas, 2 are assumed to be in long-term maintenance, and the remaining aircraft carriers rotationally deploy from bases in Japan and the United States.
 - The U.S. Navy has deployed at least 2 CVNs continuously since the end of the Cold War to deter Chinese or Russian aggression, support operations in the Middle East and conduct exercises with allies. With 10 CVNs, the U.S. Navy can only deploy 2 CVNs for about 8 months each year, unless the fleet defers maintenance.
- U.S. Navy aircraft carriers enable sustained power projection and air defense as part of the National Defense Strategy's approach to deny, degrade or delay aggression.
- The Navy is increasing the range and survivability of carrier air wings by fielding the F-35C strike-fighter and developing the MQ-25 refueling aircraft. The Navy needs to expand on these efforts by pursuing new long-range weapons, and new approaches to naval aviation missions.

Continued

FUTURE RECOMMENDATIONS:

- Conduct the USS *Harry S. Truman* (CVN 75) refueling and complex overhaul (RCOH) to sustain the carrier fleet at 11 ships and bring stability and predictability to the defense industrial base.
- Level-load demands for aircraft carrier supply-chain companies by better coordinating orders for parts, equipment, and material that support aircraft carrier maintenance periods, overhauls, and construction.
- Create incentives for supply-chain companies to invest in production and to attract qualified workers to enter and remain in the industry by establishing more long-term contracts for parts, equipment and materials.
- In conjunction with improvements to carrier air wings, continue building CVNs on 3 or 4-year intervals following CVN-81, which delivers in 2032.

CHALLENGES FACING THE AIRCRAFT CARRIER INDUSTRIAL BASE:

- The supplier base of the shipbuilding industry continues to decline in numbers. According to the U.S. Government, more than 20,500 companies in industries that supply shipbuilders closed or were disestablished since 2000.
 - An increasing number of shipbuilding suppliers are the only source for a specific part, material or piece of equipment. Without steady demand, these companies may discontinue manufacturing of sole source parts or leave the defense industrial base entirely.
- Low unemployment, a shrinking pool of skilled labor, and necessarily high employment standards are constraining the ability of the defense industrial base to hire workers to replace retiring “baby boomers” or meet temporary increases in demand from the U.S. Navy.
 - The U.S. manufacturing workforce decreased by 5 million jobs since 2000, resulting in fewer people entering the trades needed by the defense industrial base.
 - Fewer than half of available workers can meet stringent employment requirements of suppliers and shipyards regarding drug use, criminal records, or physical condition.
- Cancelling the refueling overhaul of USS *Harry S. Truman* (CVN 75) will create a gap in orders for the supply chain of propulsion plant and auxiliary equipment and parts, and introduce a temporary dip in workload at Huntington Ingalls Industries/ Newport News Shipbuilding.
 - Supply-chain companies may leave the defense industrial base and laid-off workers may not be available for rehiring when orders increase.
- CVNs are built most efficiently at an interval of one about every 4 years; the U.S. Navy's acquisition of *Enterprise* (CVN 80) and the yet-to-be-named CVN 81 will establish that interval. Shorter intervals between ships yield several benefits:
 - Improves efficiency by allowing workers to apply skills from one ship directly to the same tasks on the next ship. Workers will not lose proficiency between ships by having to perform other tasks until the next ship is built.
 - Improves health of the supply chain and lowers costs by establishing a predictable demand for parts, materials and equipment and buying them in economic quantities.
 - Incentivizes shipyards and supply chain to invest in production improvements.
- If the U.S. Navy returns to longer construction intervals after the construction of CVN 81, the cost per ship will increase and sole source suppliers will have increasing difficulty sustaining operations between aircraft carrier orders.