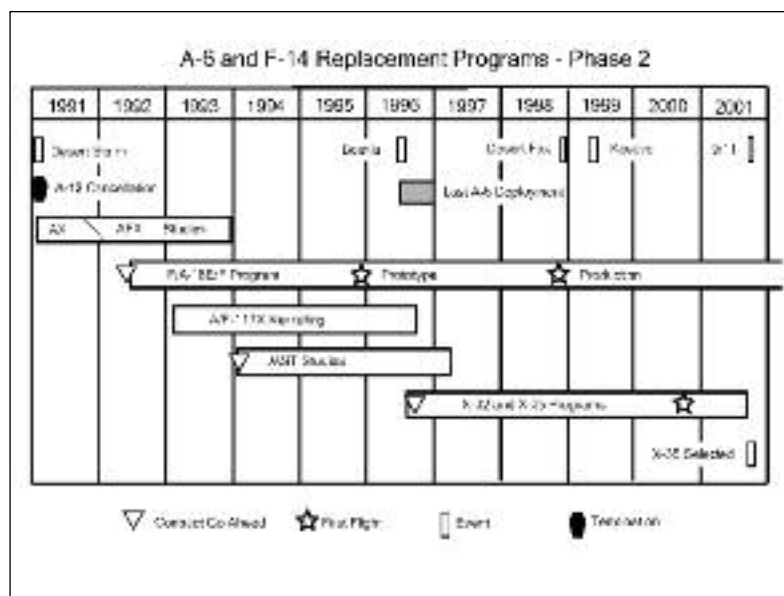




The two contenders for the JSF program, the Boeing X-32 on the left and the Lockheed Martin X-35 on the right, are posed together on the ramp at Edwards Air Force Base. The Boeing has the more innovative aerodynamic configuration. The Lockheed vertical takeoff and landing propulsion concept incorporating a lift fan is high risk but potentially provides more thrust in VTOL mode than simply diverting the engine exhaust. (Author's collection)



The naval variant of the Lockheed Martin JSF, the X-35C, was only used for handling quality and performance testing, not actual arrested landings. The major external difference besides the tailhook was a larger wing. It is shown here arriving at NAS Patuxent River in February 2001 for evaluation. (U.S. Navy 010210-N-0000P-001)



By the end of 2001, the McDonnell was well on its way to achieving total domination in carrier-based strike aircraft by the end of the decade with the F/A-18. However, the next generation strike fighter, the Lockheed F-35, was about to enter full-scale development to supplant if not replace it. (Author)

SUMMARY



With the retirement of the F-14, the number of fixed-wing aircraft types in an air wing was reduced to four, shown here in formation above Kitty Hawk in June 2008. They are (from left to right) the E-2C Hawkeye, the F/A-18C, the F-18E/F, and the EA-6B. In a few years, it will be three, with the EA-6B replaced by the EA-18G. (U.S. Navy 080623-N-7883G-274)

The U.S. Navy's carrier-based attack community has experienced major changes in the last 60-plus years and is considering yet another: routine operation of unmanned aircraft. Many of the innovations were foreshadowed by World War II projects: jet aircraft, electronic warfare, all-weather attack solely by radar, remotely piloted or autonomous missiles, etc. Some technologies could only have been dreamed of then—digital computers, inertial navigation, laser designation, extremely accurate navigation using signals from satellites, multifunction displays, and night vision.

One constant is the aircraft carrier, a mobile and sovereign air base operating tactical aircraft that are the equal of any land-based ones they will face. Another is the relentless pursuit of greater survivability in the face of more effective defenses while still achieving better weapons delivery accuracy. Closing to pointblank ranges to deliver bombs and torpedoes as practiced in World War II was no longer viable. As a result, standoff weapons were developed, and the aircraft-delivered torpedo was abandoned as a weapon to be used to sink surface ships, although it still had a role in antisubmarine warfare.