

F/A-18E/F Super Hornet and EA-18G Growler



Left: F/A-18E Super Hornet | Right: EA-18G Growler

Both the F/A-18E/F Super Hornet and EA-18G Growler programs continue to experience development challenges in the latest system configuration set (SCS) updates. The Navy has continued to field SCS updates prior to completing OT&E, with the fielding of SCS H18 Release 2 in April 2024. The fielding decision was based entirely on integrated test (IT) events with no dedicated operational test (OT) events. In September 2024, DOT&E published an early fielding report (EFR) on SCS H18 Release 2. To date, the Navy has not accomplished dedicated OT for Release 2. DOT&E approved the SCS H18 Release 3 FOT&E plan in June 2024, and OT is currently being conducted. The Navy fielded H18 Release 3 in September 2024 prior to completion of OT.

SYSTEM DESCRIPTION

The F/A-18E/F Super Hornet is a twin-engine, supersonic, all-weather, carrier-capable, multirole combat aircraft performing a variety of roles, including air superiority, fighter escort, suppression of enemy air defenses, reconnaissance, forward air control, close and deep air

support, day and night strike, and aerial refueling. The F/A-18E/F Super Hornet is the replacement for the F/A-18A through D and the F-14, and it complements the F-35C in a carrier environment. The F/A-18E/F Block III Super Hornet aircraft leverages ongoing production of the Kuwaiti Super Hornet; it is also available as a Block II aircraft retrofit. F/A-18E/F Block III Super Hornets include upgraded hardware,

advanced cockpit displays, and improved networking capability.

The EA-18G Growler is a two-seat, electronic attack variant of the F/A-18E/F Super Hornet that can provide standoff, escort, and self-protection jamming using both noise and deception techniques against land/surface-based and airborne radar systems. The EA-18G Growler carries up to five AN/ALQ-99 tactical jammer system pods mounted under the wings

and fuselage, which integrate with its internal AN/ALQ-218 electronic warfare system for detection and jamming. The EA-18G Growler also employs the AGM-88 High-Speed Anti-Radiation Missile/Advanced Anti-Radiation Guided Missile for suppression of enemy air defenses and the AIM-120 Advanced Medium-Range Air-to-Air Missile for self-protection. The Navy is currently testing the AN/ALQ-249 Next Generation Jammer Mid-Band (NGJ-MB) on the EA-18G Growler to eventually replace the AN/ALQ-99.

MISSION

Combatant commanders use the F/A-18E/F Super Hornet to conduct offensive and defensive counter-air combat missions and attack both ground-based and maritime targets with precision and non-precision weapons. The F/A-18E/F Super Hornet can also carry a pod that provides organic aerial refueling capability to a carrier strike group.

The EA-18G Growler can operate forward deployed from expeditionary land bases or as part of a carrier air wing. It is employed as an embedded airborne electronic attack platform, organic to the carrier strike group or integrated into the joint force. It can also be used in a tactical reconnaissance role.

PROGRAM

The F/A-18 Super Hornet and EA-18G Growler are Acquisition IC programs that share an acquisition strategy with SCS H18. Urgent

fleet capability needs are driving the Navy's acquisition strategy for tactical aircraft SCS releases.

The Navy's acquisition strategy for SCS H18 is an incremental three-part test-and-release plan to support the urgent fleet needs that include the Long Range Anti-Ship Missile (LRASM) 1.1 on the F/A-18E/F Super Hornet and NGJ-MB on the EA-18G Growler. In February 2023, the Navy completed IT events for SCS H18 Release 1, which did not produce sufficient operational data for a DOT&E assessment. However, the Navy required an early operational capability (EOC) and accepted the risk of fielding based on IT data alone. The Navy fielded SCS H18 Release 1 to support LRASM 1.1 capabilities. DOT&E received and approved an updated TEMP in June 2023. In August 2023, DOT&E published an EFR for SCS H18 Release 1 in response to the Navy's fielding decision.

In August 2023, the Navy conducted an operational test readiness review (OTRR) for SCS H18 Release 2, which is designed to enable NGJ-MB capability in the EA-18G Growler and capability enhancements in the F/A-18E/F. However, DOT&E did not approve the FOT&E due to significant unresolved software deficiencies. The Navy then combined a subset of SCS H18 Release 2 IT with H18 Release 3 testing with the goal of Release 2 supporting the NGJ-MB initial operational capability (IOC). Once the Navy was satisfied maintenance deficiencies with H18 Release 2 had been resolved, the Navy fielded Release 2 to the fleet

in April 2024. Again, the Navy relied solely on IT events. In September 2024, DOT&E published an EFR on SCS H18 Release 2. To date, the Navy has not accomplished OT for the fielded version of Release 2.

DOT&E approved the SCS H18 Release 3 FOT&E plan in June 2024, and OT is currently being conducted. The Navy fielded H18 Release 3 in September 2024 prior to completion of OT.

The Navy is in the process of transitioning from the current "H"-series SCS development strategy to a more agile Continuous Integration, Delivery and Deployment (CID&D) strategy. The Navy intends to use the CID&D strategy to determine which capabilities should be prioritized and included in the planned annual releases. This strategy will also be used to facilitate early releases enacted to fulfill urgent needs in the fleet. Open Air Battle Shaping test instrumentation, which is essential for adequate mission-level evaluations, is built into SCS H18 and expected to expand with CID&D. The program office plans to deliver a CID&D TEMP to DOT&E in 2QFY25.

» MAJOR CONTRACTORS

- Boeing Defense, Space & Security – St. Louis, Missouri
- Raytheon, a subsidiary of RTX – Forest, Mississippi
- GE Aerospace, a subsidiary of General Electric – Evendale, Ohio

- Northrop Grumman Aeronautics Systems – Bethpage, New York
- Lockheed Martin Missiles and Fire Control – Orlando, Florida

TEST ADEQUACY

SCS H18 Release 1 and 2 OT with the F/A-18E/F Super Hornet and EA-18G Growler was observed by DOT&E, but was inadequate. The Navy is currently conducting OT on SCS H18 Release 3 and DOT&E is observing.

DOT&E received and approved an updated TEMP in June 2023, but the Navy had already fielded SCS H18 Release 1 without a DOT&E-approved TEMP and without conducting dedicated OT. The Navy relied on IT data collection, and while DOT&E approved the collection for potential OT consideration, OT data were not collected. The Navy identified Release 1 as an EOC to meet the combatant commander's intent.

The F/A-18E/F Super Hornet and EA-18G Growler programs conducted an OTRR in August 2023 for SCS H18 Release 2. The OTRR revealed severe system deficiencies that could impact OT adequacy, so DOT&E did not approve the programs to conduct FOT&E. The Navy completed several SCS H18 Release 2 IT events in August 2023 after DOT&E required the program to correct the severe system deficiencies and conduct a Delta-OTRR to show system maturity for FOT&E approval. However, the Navy did not conduct the Delta-OTRR and

did not conduct SCS H18 Release 2 FOT&E during FY24. The Navy fielded H18 Release 2 to the fleet, but VX-9, the OT squadron for the F/A-18E/F and EA-18G programs, did not conduct OT of the final fielded version of H18 Release 2 (22.4.3) due to the compressed timeline for H18 Release 3 fielding. The Navy provided VAQ-133, an operational squadron, with H18 Release 2 (22.4.3) and designated the squadron as adjunct testers, but DOT&E has not yet received data from VAQ-133. Therefore, DOT&E did not assess the operational effectiveness, suitability, or survivability in the EFR written for the early fielding of SCS H18 Release 2 on the F/A-18E/F or EA-18G.

The Navy conducted IT of SCS H18 at Exercises SENTRY ALOHA in January 2024 and BLACK FLAG in April 2024. VX-9 began IT of the Release 3 builds of H18 for the EA-18G and F/A-18E/F platforms in February and March respectively, prior to conducting an OTRR. However, these tests were not accomplished under a DOT&E-approved test plan. DOT&E is currently analyzing the data to determine if it is adequate for OT purposes.

The F/A-18E/F Super Hornet and EA-18G Growler programs conducted an OTRR in May 2024 for SCS H18 Release 3. The OTRR revealed system deficiencies that could impact OT adequacy, but the SCS showed significant maturity over earlier SCS builds. DOT&E approved the H18 Release 3 FOT&E plan in June 2024. OT of SCS H18 Release 3 builds continued

with participation in the annual fleet Rim of the Pacific Exercise (RIMPAC), which was identified in the DOT&E-approved test plans as being one of the primary test events for the final releases of SCS H18. However, the Navy fielded H18 Release 3 in September 2024, prior to completion of OT.

Based on DOT&E's recommendation in the FY23 Annual Report, the program office has made progress on addressing the test limitations and should continue to look for new opportunities for advanced red air, land-based radar threat simulators, and ship-based simulators for both the F/A-18E/F and EA-18G.

PERFORMANCE

» EFFECTIVENESS, SUITABILITY, AND SURVIVABILITY

The Navy did not have a DOT&E-approved SCS H18 Release 2 FOT&E plan and did not complete dedicated OT on the fielded version of H18 Release 2. As stated in the September 2024 EFR, DOT&E could not assess the effectiveness, suitability, or survivability of the F/A-18E/F and EA-18G aircraft with SCS H18 Release 2 due to a lack of OT data. The fielded version of SCS H18 Release 2 did undergo developmental testing, but it was not loaded by VX-9 due to a compressed timeline to complete FOT&E of H18 Release 3. The Navy conducted IT events for an earlier version of SCS H18 Release 2, but no significant data were generated

by the IT events for analysis on the final version of SCS H18 Release 2 that was fielded to the fleet.

DOT&E will provide an assessment of SCS H18 Release 3 operational effectiveness, suitability, and survivability at the conclusion of FOT&E.

RECOMMENDATIONS

The Navy should:

1. Complete dedicated OT of SCS H18 Release 3 to assess operational effectiveness, suitability, and survivability prior to fielding subsequent versions.
2. Implement the recommendations provided in the SCS H18 Release 2 EFR of September 2024.
3. Continue to incorporate Open Air Battle Shaping instrumentation, high-fidelity active electronically scanned array threat radar emulators, and other new test assets (as they become available) into SCS OT&E to improve data collection, integrity, and thoroughness.
4. Submit a CID&D TEMP and test plan for DOT&E approval. Use the CID&D strategy to implement new capabilities and efficiently address deficiencies and untested capabilities that have been carried forward from SCS H18 and previous SCS versions.