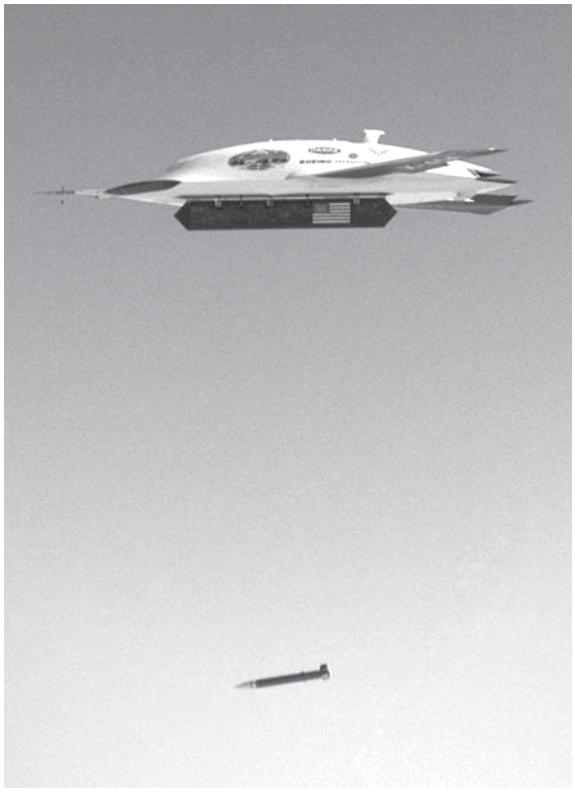
Joint Unmanned Combat Air Systems (J-UCAS)

SUMMARY

- The Joint Unmanned Combat Air Systems (J-UCAS) program is an Advanced Technology Demonstration. The program will demonstrate the potential of unmanned aerial vehicles to perform the following missions:
  - Suppression of Enemy Air Defenses and Strike from a low observable platform
  - Electronic Warfare support/ Electronic Attack
  - Persistent Intelligence, Surveillance, and Reconnaissance
- The J-UCAS program comprises:
  - Boeing X-45C unmanned vehicle
  - Northrop Grumman X-47B unmanned vehicle
  - Common Operating System
- Operational assessments of the J-UCAS will occur in the FY07-12 timeframe. The Services can initiate a decision to enter into a formal acquisition program at any point.



X-45A accomplishments include the release of an inert, GPS-guided 250 pound bomb from its internal weapons bay.

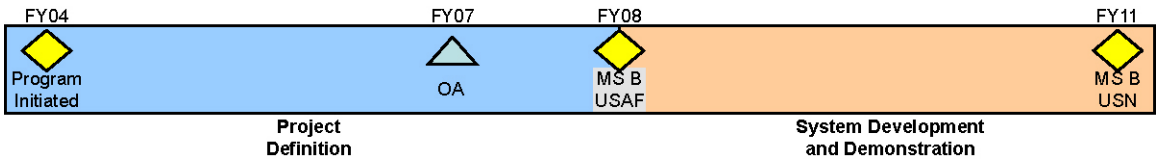
SYSTEM DESCRIPTION AND MISSION

J-UCAS stood up as a Joint Defense Advanced Research Projects Agency/Air Force/Navy Advanced Technology Demonstration program during 2004. The J-UCAS program combined the Unmanned Combat Aerial Vehicle–Air Force and the Unmanned Combat Aerial Vehicle–Navy programs. The Defense Advanced Research Projects Agency is leading the overall effort. They are responsible for the planning and execution of a joint system technology demonstration program, support of the Services' independent operational assessment, and support preparations for potential acquisition transition options that align with emerging Air Force and Navy requirements.

The Boeing X-45C and Northrop Grumman X-47B development efforts will produce multiple air vehicles with significant survivability, range, and persistence. The vehicles will also integrate sensor, weapons, and communications systems. The Boeing X-45C has an increased emphasis on survivability.

The Northrop Grumman X-47C will provide the capability for limited carrier suitability demonstrations. The Common Operating System provides the functionality and interfaces for command and control, autonomous operations communications management, and system health and status reporting. The Common Operating System is an open architecture system.

TEST AND EVALUATION ACTIVITY



J-UCAS flight-tested the Boeing X-45A air vehicle with Block 2 software. This block of software provides weapons delivery capability and multi-vehicle operations. These flight test events are part of the risk reduction effort for J-UCAS and are a flow down from the Unmanned Combat Aerial Vehicle–Air Force contract.

Boeing X-45A accomplishments include:

- Release of an inert, unguided 250-pound bomb from its internal weapons bay.
- Release of an inert, GPS-guided 250 pound bomb from its internal weapons bay.
- Conduct of a formation flight with two X-45A vehicles.

TEST AND EVALUATION ASSESSMENT

The development of the integrated operational assessment plan is in the initial stages. Early involvement of the Operational Test Activities is important to ensure an independent, operational perspective is available to inform program decision-making. An operational assessment should be an entrance requirement for the Milestone B decision.