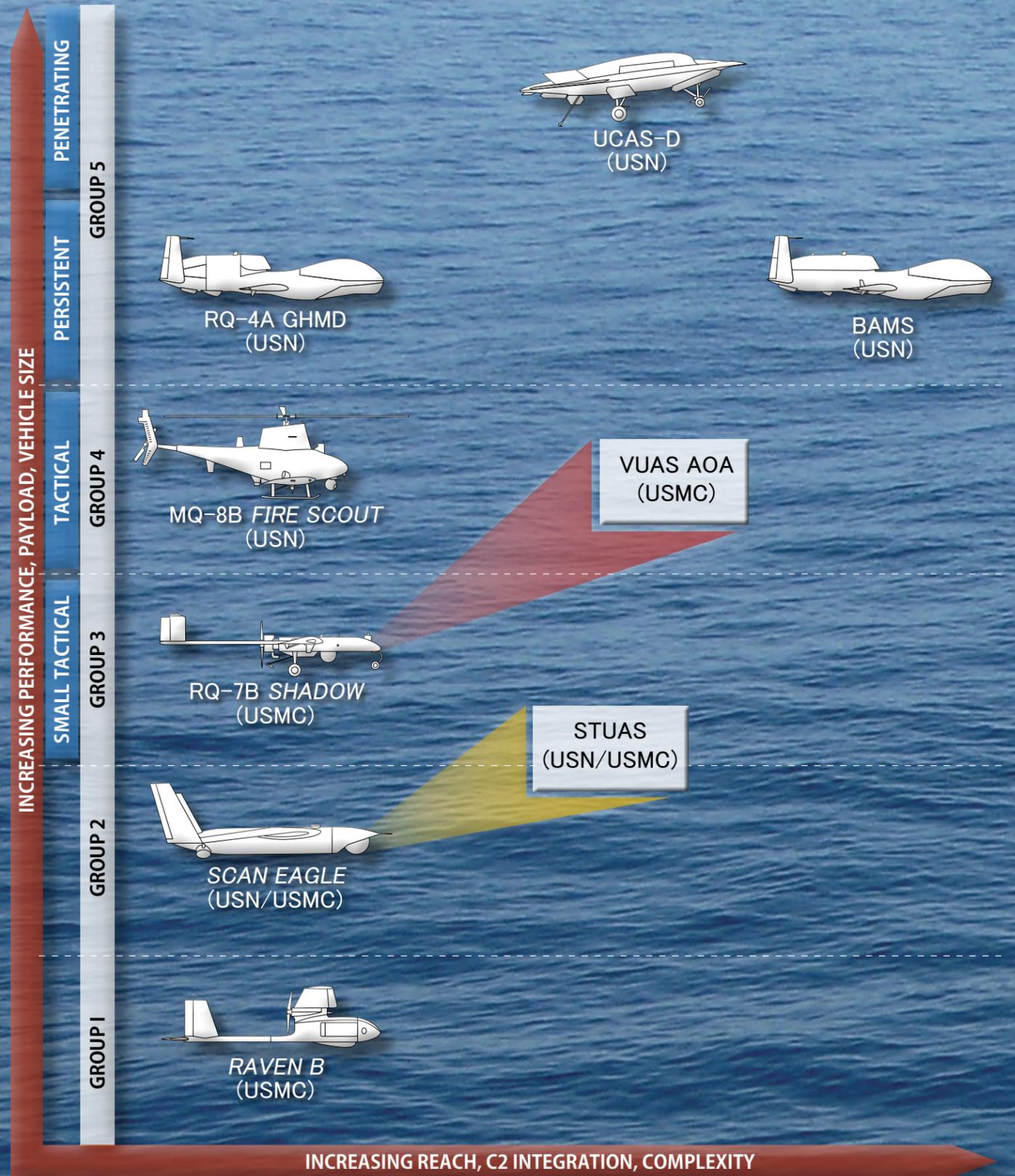


UNMANNED AIRCRAFT SYSTEMS

The Naval UAS family of systems is composed of five groups aligned by increasing performance and payload and vehicle size. It provides the Navy and Marine Corps with a diverse UAS portfolio and an architecture for the battlespace awareness, maritime domain awareness, force protection, and force application required by commanders. Driven by Navy and Marine Corps concepts of operation, the UAS groups are tailored to support specific force levels, from carrier and expeditionary strike groups to Marine expeditionary units, regiments, and battalions.



F6F-5K Hellcat drone, 1952



GROUP 1

Dragon Eye and Raven B

The *Dragon Eye* and *Raven B* are man-packable, hand-launched, autonomous systems designed to provide Marine Corps small-unit commanders with a reconnaissance and surveillance capability to see over the next hill in the field or around the next building in an urban environment. *Dragon Eye* began operations in 2004 and is now being replaced by the *Raven B*, a joint asset used by the Army and U.S. Special Operations Command.

GROUP 2

Scan Eagle

Scan Eagle is a 40-pound vehicle with a cruising speed of 50 knots and a ceiling of 15,000 feet. Designed to fly missions of 15 hours or more, it is used for both land- and ship-based operations. The *Scan Eagle* system includes the Sky Wedge hydraulic launcher, the Sky Hook retrieving system, and a mobile ground-control element. The vehicle is equipped with a nose-mounted inertial-stabilized camera turret that carries either a zoom charge-coupled device or infrared sensor. Leased by the Navy and Marine Corps, the *Scan Eagle* system is being used to fill a capability gap on an interim basis. It will be replaced by the Small Tactical UAS in fiscal year 2012.

GROUP 2-3

Small Tactical UAS

The Small Tactical UAS will be an expeditionary long-endurance system capable of multiple missions. It will have advanced target acquisition, fire support capability, and will be employed from both land and sea. The competitively selected system began development and demonstration in 2009 and it will reach initial operational capability in fiscal year 2012.

GROUP 3

RQ-7B Shadow

The *RQ-7B Shadow* is a transportable surveillance asset capable of providing Marine Corps tactical commanders with day and night battlefield reconnaissance, target acquisition and designation, and communication relay in support of joint or expeditionary force commanders. *Shadow* is operated by Marine Corps unmanned aerial vehicle squadrons that are reorganized as detachments to allow greater operational flexibility than was possible with the prior *RQ-2B Pioneer* system.

GROUP 4

MQ-8B Fire Scout

The *MQ-8B Fire Scout* VTOL UAS is designed to operate from all air-capable ships, carry modular mission payloads, and operate using the Tactical Control System and Tactical Common Data Link. *Fire Scout* is a medium- to large-size Group 4 UAS that will provide day and night real-time intelligence/surveillance/reconnaissance and targeting as well as communications relay and battlefield management capabilities to support anti-submarine, mine, and anti-surface warfare, the missions of the Littoral Combat Ship. *Fire Scout* conducted operational testing on USS *McInerney* (FFG 8) in fiscal year 2009 and deployed in early fiscal year 2010 on *McInerney*. The *MQ-8B Fire Scout* is a part of the transformation roadmap for the SH-60B/F and the MH-60R (see pg. 46).

Vertical UAS

Vertical UAS is envisioned as the replacement for the *RQ-7B Shadow* after 2015. An analysis of alternatives has been completed, but program funding has not yet been established. Vertical UAS will be a versatile, persistent, medium-range platform that supports joint forcible-entry operations delivered from sea bases. It will provide a real-time reconnaissance, surveillance, targeting, and weapon employment capability. Vertical UAS will have the speed to complement expeditionary maneuver warfare, the range to meet the needs of Marine Corps and joint task force commanders, the survivability to operate in denied environments, the endurance to permit continuous coverage, and the agility to execute preplanned and in-flight multimission tasking.

GROUP 5

Persistent

Global Hawk Maritime Demonstration

In fiscal year 2003, two Air Force *Global Hawk* unmanned aircraft and associated ground control equipment were acquired by the Navy for demonstration purposes and to conduct risk reduction activities for the BAMS program. In fiscal year 2009, in response to theater surveillance and reconnaissance demands, the *Global Hawk* Maritime Demonstration (GHMD) transitioned to a 5th Fleet operational deployment, providing near-real-time, high-resolution tactical imagery in support of combat operations. In addition, GHMD is facilitating the cultural and tactical integration of unmanned aircraft systems into fleet operations with concept of operations validation; tactics, techniques, and procedures development; and training and proficiency flights. Lessons learned are being used in the development of maritime patrol and reconnaissance capabilities.

Broad Area Maritime Surveillance UAS

Integral to the Navy's airborne patrol and reconnaissance recapitalization strategy, the BAMS UAS will be a forward-deployed, land-based, autonomously operated system that will provide persistent maritime reconnaissance and basic communications relay capabilities from five operational sites (orbits) worldwide. BAMS will be an adjunct to the P-8A multimission aircraft, operated under the cognizance of the maritime patrol and reconnaissance force to leverage manpower, infrastructure, and expertise. As a FORCEnet enabler, it will serve as a distributed node in the maritime environment and help build and sustain the common operational picture for fleet commanders. The program entered system development and

demonstration in fiscal year 2008 and conducted its first two major design reviews in January and June 2009. Initial operational capability for BAMS is scheduled for 2016. BAMS is a part of the transformation roadmap for the P-3C *Orion* (see pp. 54).

Penetrating

Navy Unmanned Combat Aircraft System-Demonstration

Naval Aviation is conducting the Navy Unmanned Combat Air System aircraft carrier demonstration (UCAS-D) to develop technologies for a carrier-capable, low-observable UAS that will contribute to a potential follow-on acquisition program that could reach initial operational capability by about 2025. By September 2013, the Navy plans to complete a UCAS carrier demonstration and demonstrate probe and drogue (Navy style) and boom and receptacle (Air Force style) autonomous aerial refueling with an unmanned platform, and evaluate and identify technologies supporting future intelligence, surveillance, reconnaissance, and strike capabilities requirements.

The UCAS-D contract was competitively awarded in August 2007. The first X-47B aircraft is undergoing integration and checkout activities in preparation for its first flight in late 2010. Aircraft carrier integration activities are underway and surrogate aircraft testing is in progress to validate the various interfaces required to control the UCAS-D aircraft. The first aircraft carrier landing is scheduled for the first quarter of fiscal year 2012.

