Boeing Military Aircraft

Boeing Military Aircraft (BMA) includes tactical, tanker and airlift aircraft, weapons, surveillance and engagement programs, and unmanned airborne systems programs.

Three customer- and capability-focused divisions make up the BMA organization: Global Strike; Mobility, Surveillance and Engagement; and Vertical Lift. BMA also leads Boeing’s Unmanned Airborne Systems Programs. These divisions position BMA for growth over the next decade and beyond.

BMA has approximately 23,000 employees at 10 major locations including Long Beach, Calif.; Puget Sound, Wash.; Philadelphia; Mesa, Ariz.; and St. Louis, Mo.

Divisions and key programs:

Global Strike:

- **EA-18G Growler** – The EA-18G Growler is a variant of the combat-proven F/A-18F Super Hornet Block II and conducts airborne electronic attack (AEA) missions. The EA-18G combines the capability of the combat-proven Super Hornet with the latest AEA avionics suite evolved from the Improved Capability III (ICAP III) system. The EA-18G’s vast array of sensors and weapons provides the warfighter with a lethal and survivable weapon system to counter current and emerging threats. The EA-18G’s initial combat deployment occurred in late 2010 and concluded in mid-2011, supporting operations in Iraq and Libya. Boeing has delivered 90 Growlers to the U.S. Navy as of July 2013. In May 2013, the Commonwealth of Australia announced its decision to further increase Australian Defence Force capabilities with the addition of 12 Growlers. Australia is the first country ever to be offered this level of Airborne Electronic Attack technology by the United States and will give the Royal Australian Air Force unmatched abilities in the areas of electronic awareness and attack.

- **F/A-18E/F Super Hornet** – The F/A-18E/F Super Hornet is the U.S. Navy’s premier strike fighter, deployed in both air-dominance and precision-strike roles. Combining exceptional aerodynamic and systems performance, long-term growth capability, and advanced sensors like the APG-79 Active Electronically Scanned Array radar, the Super Hornet carries within its design every role a tactical aircraft can perform. The Super Hornet’s advanced sensor and information suite collects and fuses data from offboard sources and onboard sensors, enabling the Super Hornet to seamlessly detect and eliminate air, ground or sea-based threats. Built by the most innovative team in aerospace – Boeing, General Electric Aviation, Raytheon and Northrop Grumman – the Super Hornet continues to evolve to ensure it offers the capabilities needed to meet mission
requirements now and well into the future. With date-certain deliveries, cost-certain production and proven combat capability, the Super Hornet is the low-risk, high-end fighter/attack solution for the U.S. and its global defense partners. Boeing has delivered 515 Super Hornets to the U.S. Navy as of July 2013, including 24 F/A-18Fs for the Royal Australian Air Force. In August 2013, Boeing and Northrop Grumman began flight tests with an Advanced Super Hornet prototype aircraft with conformal fuel tanks, an enclosed weapons pod and signature enhancements. In combination with other advanced capabilities to include enhanced engines, internal infrared search and track, and a next-gen cockpit, the Advanced Super Hornet offers domestic and international customers a menu of next-generation capabilities that will allow Super Hornets to outpace threats in the 2030+ anti-access, area-denial (A2/AD) environment – affordably.

- **F-15E Strike Eagle** – The F-15E Strike Eagle is the backbone of the U.S. Air Force fleet. F-15 variants are currently in service with the Republic of Korea, Singapore, Israel, Japan and Saudi Arabia. The Advanced F-15 being provided to international customers today provides superior performance in terms of service ceiling, speed, range, endurance and payload capacity while retaining growth potential to ensure the customer can perform missions effectively now and in the future. The advanced F-15 delivers the highest capability with proven quality at the best price on the fastest and most assured schedule to the customer. The F-15 combines the best technological features of any combat aircraft, including the benefits of twin engines for performance and survivability, dual missionized cockpits for greater awareness, integrated avionics such as AESA, DEWS, a digital fly-by-wire flight control system for superior performance, and two additional weapon hardpoints (wing stations 1 and 9) for maximum payload capability. Upgrades are being incorporated into the U.S. Air Force F-15 fleet to ensure the aircraft remain capable and ready to meet and defeat threats today and well into the future. The U.S. Air Force has no plans to retire the F-15. Since entering operational service, the F-15 has a perfect air combat record, with 104 victories and no losses.

- **F-15 Silent Eagle** – Building on a continuous evolution of capability in the combat-proven F-15 family of fighter jets, the Silent Eagle combines cost-effective low-observable technologies with flexibility for large and diverse weapons payloads to meet customer needs in all phases of air combat. Its innovative “2 aircraft-in-1 platform” design offers greater mission flexibility, as it can be rapidly reconfigured between internal and external weapons carriage modes. Airframe enhancements coupled with a Digital “Fly-by-Wire” Flight Control System (DFCS) improve aerodynamic efficiency and fighter performance, and reduce overall weight and drag. Silent Eagle also brings enhanced survivability and situational awareness with its Digital Electronic Warfare Suite, Advanced Electronic Scanning Array (AESA) radar and a bundle of additional avionics advancements.

- **Harpoon Block II** – Harpoon Block II is one of the world’s premier anti-ship missile systems, featuring an autonomous, all-weather, over-the-horizon strike capability. It is ideal for both anti-ship and land-strike missions, even in crowded
ports. These versatile weapons can be launched from aircraft, ships, submarines and even by mobile coastal defense vehicles. The U.S. Navy and Boeing initiated a Harpoon integration program in 2012 that will extend the life of the U.S. Navy Harpoon program past 2025.

- **Joint Direct Attack Munition (JDAM)** – JDAM is a low-cost guidance kit that converts existing unguided free-fall bombs into near precision-guided “smart” weapons. Boeing’s modular design of JDAM offers affordable add-on capabilities, such as a laser sensor to create Laser JDAM for precise prosecution of moving, relocatable and maritime targets. JDAM Extended Range (JDAM ER) incorporates a low-cost wing set to triple JDAM’s standoff range to greater than 40 miles. Boeing has delivered more than 250,000 JDAM tail kits on time and at cost since 1998.

- **Small Diameter Bomb (SDB)** – SDB is a 250-pound class, near precision-guided weapon launched from a fighter, bomber or unmanned aircraft that can destroy targets from a range of greater than 40 miles and penetrate more than three feet of steel-reinforced concrete with reduced collateral damage. The SDB system improves sortie effectiveness by enabling carriage of four weapons on a single aircraft station. The Focused Lethality Munition variant incorporates technologies for precision engagements with ultra-low collateral damage. Leveraging the combat-proven success of Laser JDAM, the same laser sensor has been added to create Laser SDB for moving, relocatable and maritime targets of opportunity.

- **Standoff Land Attack Missile-Expanded Response (SLAM ER)** – SLAM ER is a combat-proven, all-weather, over-the-horizon, precision strike missile. The ER variant is an affordable upgrade to the baseline SLAM, incorporating planar wings to improve range and aerodynamic performance, and an improved warhead to increase penetration and lethality against hardened targets.

**Mobility, Surveillance and Engagement:**

- **737 Airborne Early Warning and Control (AEW&C)** – The 737 AEW&C is a state-of-the-art system providing powerful airborne surveillance, communications and battle management. It can track airborne and maritime targets simultaneously and includes a self-defense capability, an advanced open system architecture and an identification friend or foe system. Ten AEW&C aircraft are in operation; six by Australia (Wedgetail) and four by South Korea (Peace Eye). Delivery of the first of four AEW&C aircraft for Turkey (Peace Eagle) is scheduled for 2013.

- **Airborne Warning and Control System (AWACS)** – The E-3 707 AWACS represents the world’s standard for airborne early warning systems. The E-3 fills the needs of both airborne surveillance and command and control (C2) for tactical and air defense forces. It provides a highly mobile, survivable surveillance and C2 platform. E-3 fleets are operated by the U.S., NATO, the United Kingdom, France and Saudi Arabia. Japan operates a fleet of four E-767 AWACS aircraft. The U.S. fleet is undergoing a major mission system upgrade called Block 40/45. Under a Low Rate Initial Production contract three AWACS
aircraft have been upgraded; three more will be upgraded by April 2014. A flight deck and avionics upgrade program is under way for the NATO and U.S. fleets. Installation is scheduled to begin on the NATO aircraft at a Boeing facility in Seattle during the third quarter of 2013. Modification of the U.S. AWACS begins in 2014. Both aircraft will be completed by the end of 2015. Production contracts for the remaining aircraft in the fleets will be awarded later. A major radar and mission navigation system upgrade has been completed for Japan’s AWACS fleet. Installation and checkout on a French Mid-Life mission system began this year. A major radar upgrade is underway on Saudi Arabia’s AWACS fleet.

- **C-17 Globemaster III** – The C-17 Globemaster III, the world’s most advanced and versatile airlifter, is designed for long-range transport of equipment, supplies and military troops and is used extensively to support combat operations, disaster response, humanitarian relief and aeromedical evacuation missions. As of August 2013, Boeing has delivered 222 C-17s to the U.S. Air Force and 34 to Australia, Canada, India, Qatar, the United Arab Emirates, the United Kingdom and the 12-member Strategic Airlift Capability initiative of NATO and Partnership for Peace nations. India has 10 C-17s on order for delivery in 2013 and 2014. Boeing also provides system-level performance-based logistics sustainment services for the entire fleet, including material management and depot maintenance support.

- **U.S. Air Force KC-46A Tanker Program** – Boeing was selected on Feb. 24, 2011, to design, build and deliver 179 KC-46 multi-role tankers to begin replacing the U.S. Air Force’s aging fleet of KC-135 refueling tankers. The initial contract calls for the delivery of 18 combat-ready tankers by 2017, including four test and evaluation aircraft that will be reconfigured for operational duty. Based on the proven and highly efficient Boeing 767 commercial airplane, updated with advanced technology, the KC-46A Tanker will allow the Air Force to deliver fuel to other U.S. and allied aircraft in-flight, and transport cargo, passengers and patients. The KC-46 features a fly-by-wire air refueling boom, an integrated centerline drogue system and wing air refueling pods for simultaneous refueling. All milestones have been met on or ahead of schedule. The program completed its Critical Design Review on August 21, 2013.

- **P-8A Poseidon/P-8I** – The P-8A Poseidon is a military derivative of the Boeing Next-Generation 737-800 designed to replace the U.S. Navy’s fleet of P-3s. The P-8A will significantly improve the U.S. Navy’s anti-submarine and anti-surface warfare capabilities, as well as armed intelligence, surveillance and reconnaissance. The Navy in 2004 awarded Boeing a System Development and Demonstration contract for six flight- and two ground-test vehicles. Boeing’s first aircraft completed its initial flight in April 2009 and later that year entered the Navy’s formal flight test program. Boeing received a $1.6 billion contract from the Navy for six low-rate initial production (LRIP) aircraft, along with spares, logistics and training devices in January 2011; a $1.7 billion award for an additional seven LRIP aircraft in November 2011; and a $1.9 billion contract for 11 P-8As in September 2012, taking the total fleet to 24. In Aug. 2013, the Navy awarded Boeing a $1.98 billion contract for 13 additional P-8A aircraft, continuing the modernization of U.S. maritime patrol capabilities that will ultimately involve more
than 100 P-8As. The Navy has now ordered 37 of the 117 P-8As it is expected to buy. To date, 10 have been delivered. P-8A initial operational capability is slated for 2013. In January 2009, the government of India selected the P-8I, a variant of the P-8A Poseidon, for its long-range maritime reconnaissance and anti-submarine warfare mission. Under this contract, Boeing will deliver eight P-8I aircraft to India. Boeing will deliver three P-8Is to India in 2013. Australia signed a memorandum of understanding (MOU) with the U.S. Navy in 2009 and will collaborate in Increment 2. A production, sustainment and follow-on MOU was signed in March 2012.

Vertical Lift

- **AH-6 Light Attack/Reconnaissance Helicopter** – The AH-6 Light Attack/Reconnaissance helicopter is designed to quickly meet the needs of today’s defense forces with the flexibility to integrate future capabilities. The aircraft features flexible mission configuration; state-of-the-art cockpit architecture; integrated and qualified sensors and weapons systems; the highest payload for any aircraft in its class; outstanding reliability and low maintenance costs; and a compressed, low risk, delivery schedule to meet customers’ needs. The versatile AH-6 is capable of meeting the needs for the U.S. Army’s Armed Aerial Scout mission.

- **AH-64 Apache** – The AH-64 Apache is a multirole combat helicopter with fully integrated avionics and weapons, plus state-of-the-art digital communications capabilities to enable real-time, secure transfer of battlefield information to air and ground forces. Apaches are in service with the U.S. Army and international defense forces around the world. The latest version, the AH-64E Apache is being delivered to the U.S. Army and has been selected by several international defense forces. The E-model Apache features enhanced performance, joint digital operability, improved survivability and cognitive decision aiding, and reduced operating and support costs.

- **CH/MH-47 Chinook** – The CH/MH-47 Chinook is a medium-to-heavy-lift helicopter for intra-theater troop and cargo movement. The aircraft conducts missions from combat to disaster relief and is in service with the armed forces of nearly 20 countries worldwide. The new CH-47F provides advanced avionics for improved situational awareness and Digital Automatic Flight Control, which provides access to automatic altitude and position capture/hold modes for stability in brownout conditions. The enhanced stability enables pilots to perform precise vertical landings in degraded visual environments. The digital cockpit reduces pilot and crew workload and improves operational safety. Improved survivability features include Common Missile Warning and Improved Countermeasure Dispenser systems. The MH-47 provides key capabilities to special operations forces. In June 2013, the U.S Army signed a second multiyear procurement contract for up to 215 F-model Chinooks over five years.

- **V-22 Osprey** – The V-22 Osprey is a joint service multi-role combat aircraft that uses tiltrotor technology to combine the speed and range of a fixed-wing aircraft with the vertical performance of a helicopter. The U.S. Marine Corps has a current requirement for 360 MV-22s to perform combat assault and assault
support missions, while the U.S. Air Force Special Operations Command (AFSOC) will field a fleet of 50 CV-22s configured for terrain-following, low-level, high-speed flight for long-range special operations. More than 200 Osprey tiltrotors are currently operating in Marine Corps and AFSOC squadrons. The aircraft has been deployed continuously since 2007, participating in numerous combat operations as well as humanitarian, ship-based and special operations missions. The worldwide Osprey fleet has amassed nearly 190,000 flight hours. A second V-22 multiyear procurement contract was awarded the program in 2013 proving for production of 98 aircraft over five years.

**Unmanned Airborne Systems Programs:**

- **Unmanned Little Bird H-6U** – Unmanned Little Bird is a reliable, versatile, optionally piloted helicopter. It has demonstrated a range of unmanned capabilities, including shipboard takeoffs and landings; maritime operations; intelligence, surveillance and reconnaissance; cargo resupply; weapons delivery; communications and data relay; and manned/unmanned teaming.

- **CAMCOPTER® S-100** – The S-100 is a highly versatile autonomous unmanned vehicle that provides a unique balance between multi-role capabilities and battlespace access. It can operate from unprepared austere sites and at sea, carrying a 75-pound payload for more than six hours.

- **ScanEagle** – A low-cost, long-endurance, autonomous unmanned air system, ScanEagle has accumulated more than 650,000 combat flight hours. It has now expanded into the civil/commercial arena, executing missions such as marine life monitoring in Australia, conducting disaster assessment in the U.S. and is preparing to perform aerial surveillance for the oil and gas industry in the Arctic.

- **Integrator** – Integrator is an autonomous unmanned air system offering an industry-leading payload capacity to enable the capture of high-resolution imagery in day and nighttime conditions and/or the rapid integration of a unique customer-required payload package.

- **Small Tactical Unmanned Aircraft System (STUAS)** – In 2009, Insitu completed flight demonstrations with RQ-21A - a variant of the Integrator - as part of the competition for the STUAS / Tier II contract with the U.S. government. The following year, the U.S. Naval Air Warfare Center Aircraft Division awarded a $43.7 million contract to Insitu to begin full development of RQ-21A. The first maritime flight of the RQ-21A took place in April 2013.

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