

RAAF Receives Final APG-73 Radar for HUG Program

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While the Royal Australian Air Force (RAAF) has received the final fire control radar that is part of the F/A-18 Hornet Upgrade (HUG), Raytheon support of the aircraft continues to ensure the Australian squadrons are effective for the next 20 years.

Deliveries of 71 new APG-73 Radar Systems commenced in December of 2000 and were completed on schedule in November of 2002. In the HUG program, the RAAF F/A-18s have been progressively upgraded to a standard similar to the U.S. Navy F/A-18C/D version. The APG-73 replaced the original APG-65 system. It gives the RAAF a state-of-the art radar structure that can be upgraded with new software as future threats evolve.

“This program is a success because of the close cooperation of the U.S. Navy, Boeing, RAAF and Raytheon,” said Tom Sillers, manager of F/A-18 International Programs for the Raytheon Space and Airborne Systems business.

The HUG program marks the first radar upgrade of any international F/A-18 Hornet. The RAAF selected the F/A-18 with its APG-65 radar set in 1981.

“With the delivery of this radar, we celebrate the successes of the HUG program. Raytheon will continue to ensure that the RAAF’s F/A-18s maintain their needed effectiveness through the next two decades,” Sillers said.

Although the deliveries have been



Photo courtesy of Raytheon Company

The new APG-73 Radar system received by the RAAF as part of the F/A-18 Hornet upgrade.

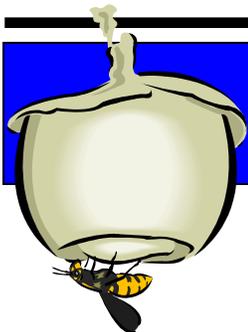
completed, Raytheon's support to the RAAF's F/A-18 Program continues. An extensive Radar Maintenance training course will be conducted by Raytheon engineers at the RAAF Base Williamstown later this year. And the RAAF is currently contracted with Raytheon Australia for the maintenance of the APG-65 and APG-73 radar systems.

The RAAF is also working with the USN and Raytheon in an APG-73 Software Co-development Program to develop new tactical software uniquely tailored to meet RAAF requirements. Two engineers from the Defence

Science and Technology Organization (DSTO) in Adelaide, Australia are working side by side with Raytheon software developers in El Segundo, Calif. A third DSTO representative is based at the U. S. Navy's Naval Air Weapons Center in China Lake, California.

The first phase of this software program will conclude later this year with the release of an Operational Flight Program (OFP-19). Requirements for Phase II have already been defined, and a third phase is currently under discussion.





Jive from the Hive ...

F/A-18 AESA Program Wins Laureate Award

The APG-79 Active Electronically Scanned Array (AESA) program was recently honored by Aviation Week and Space Technology magazine as the winner of the publication's prestigious Laurel Award. The AESA radar system, built for the F/A-18E/F, replaces existing mechanically scanned antennas with a radar beam that can be steered at close to the speed of light.

The Laureate was awarded in Electronics to the AESA team and specifically to the radar's program managers, Cmdr. Dave Dunaway of

NAVAIR PMA265, Tom Kennedy of Raytheon, and Don Thole, of the Boeing Company. The Aerospace Laurels honor individuals and teams for significant contributions to the global field of aerospace.

The AESA team will be honored along with Laureate award winners from other categories at a special event April 8 at the National Air and Space Museum in Washington, D.C. Winners will be featured in the magazine's April 21 edition.



APG-79 AESA Prototype

Joint Navy-Boeing Team Earns Hazelrigg Award

Kathleen Cook

Boeing Communications

A joint Navy-Boeing developmental flight test team was recognized in January with the Captain Steven A Hazelrigg Award. The award, presented by the Navy's Air Test and Evaluation Squadron 23 (X-23) at Naval Air Station, Patuxent River, Md., recognizes excellence in professionalism, leadership and team spirit. In recognizing the team's efforts, Col. J.A. Mortensen, squadron commanding officer, specifically cited the cohesiveness of the military, government and Boeing team and recognized the value of the team's camaraderie.

"I was really honored to be included (in the award citation), because this was not just one individual's work, but a true team effort," said Mike Wallace, Boeing senior experimental test pilot. "I'm personally very impressed with the



performance of the aircraft during the flight test, and that is evidence of how well the team has put together this flight control OFP (operational flight program)."

The developmental flight test team is responsible for researching and developing advanced flight control capabilities for F/A-18A-D's, which

would enhance the aircraft's departure resistance and improve its tactical maneuverability. According to Wallace, this team's work represents possibly the biggest evolution that has occurred in the Hornet's flight control system since the aircraft entered operation more than 20 years ago.

Out and About With The Fleet



At sea aboard *USS Theodore Roosevelt* (CVN 71) January 21, 2003 – An F/A-18A+ (ECP 560 Variant) Hornet assigned to the “Hunters” of Strike Fighter Squadron VFA-201 approaches one of four steam driven catapults on the ship’s flight deck. The *Roosevelt* is conducting training exercises in the Caribbean Sea. U.S. Navy photo by Chief Photographer’s Mate Eric A. Clement.

At sea aboard *USS Carl Vinson* (CVN 70) February 8, 2003 – Lt. Cdr. Thomas Baldwin, a flight deck “Shooter,” signals the launch of an F/A-18C Hornet assigned to the “Fighting Redcocks” of Strike Fighter Squadron VFA-22. Shooters are primarily responsible for the safe and proper launching of aircraft during flight operations. *USS Carl Vinson* is operating in the Pacific Ocean in preparation for their next scheduled deployment. U.S. Navy photo by Photographer’s Mate 2nd Class Inez Lawson.



Lt. Christopher ‘Sharky’ Adams, VFA-122, discusses the Super Hornet capabilities on-camera with Jeff Watson of the Australian Today Show. The F/A-18F was featured in an air show demonstration during the Australian Air Show 2003. Photo courtesy of U.S. Navy

ACASS—A Breakthrough in Close Air Support



Pat Frost

Boeing Communications

Boeing has demonstrated a breakthrough in close air support capability by transmitting digital imagery with targeting information between warfighters on the ground and in the air.

The demonstration included an F/A-18F Super Hornet and a forward air controller communicating over existing radio links. The demonstration, which took place at Naval Air Station Fallon, Nevada, is another example of the leading role Boeing has taken developing network-centric warfighting capabilities.

In the demonstration, a forward air controller, equipped with the advanced close air support system, or ACASS, provided rough target coordinates to the pilot of the F/A-18. The pilot used the Boeing Gateway to Airborne Tactical Data Exchange avionics system to capture a sensor image of the target, and transmit the image back to the controller for target confirmation. Newly developed ACASS software enabled the controller to view the image, annotate it with critical information and transmit it back to the pilot to complete the air strike. This information exchange ensures that both the warfighter on the ground and in the air share a common picture of the target.

“What this demonstration really boils down to is improved situational awareness; the timely, accurate exchange of information and greatly enhanced target identification,” said Tony Parasida, vice president and general manager, the Boeing F/A-18

program.

“Today’s warfighting environment requires up-to-the minute information that is seamlessly exchanged among a number of platforms, people and sites. This demonstration further reinforces the Super Hornet’s position as the U.S. Navy’s workhorse in the network centric warfare environment.”

Boeing plans to conduct additional testing in 2003 to further demonstrate the Super Hornet’s ability to share targeting imagery among multiple aircraft.

The test aircraft is managed by Boeing under a cooperative agreement with the U.S. Navy for demonstrating promising technologies and transitioning them to the Navy warfighter.

The Boeing Gateway to Airborne Tactical Data Exchange system installed on F/A-18F1 is an avionics prototype box that allows Boeing designers to test new software and hardware without affecting the mission systems already on the aircraft. It has made low-cost, low-risk experimentation possible and has opened new doors for “fast-tracking” solutions to the fleet.

ACASS, under development at the U.S. Marine Corps Warfighting Lab, is a portable device designed to automate the target hand-off process between the FAC and the pilot in the cockpit.

The tactical sensor used in this demonstration to generate high quality imagery was a training version of Raytheon’s AGM-65H/K Maverick missile. In production, the imagery function will be performed by Raytheon’s Advanced Tactical Forward Looking Infrared sensor.

