



The Joint Helmet-Mounted Cueing System allows fighter pilots to easily control aircraft targeting systems and sensors that detect, acquire and engage surface and airborne targets.

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First look, *first shot*

Helmet-mounted cueing system is a must-have for today's fighter pilots

By TIM DEATON

What happens when a member of “Generation Xbox”—with years of experience defending freedom from computer-generated adversaries—grows up to become a fighter pilot? He or she is able to transfer that skill set of heightened situational awareness and precise eye-hand coordination to the cockpit using Boeing’s Joint Helmet-Mounted Cueing System.

Equating JHMCS to a video game might be an oversimplified analogy. But the operational skills and concepts are similar. With its visor “head-up” information display and head-tracking technology, JHMCS allows fighter pilots to easily control aircraft targeting systems and sensors that detect, acquire and engage surface and airborne targets. The pilot needs only to point his or her head at the target and weapons will be aimed at where the pilot is looking. The system can also be employed to accurately cue the pilot to ground targets.

The system continuously displays aircraft performance, targeting, weaponry and threat warning information, regardless of where the pilot is looking. In a dual-seat aircraft, each crewmember can wear a JHMCS helmet, perform operations independently and have continuous awareness of where the other crewmember is looking.

“This is the greatest situational awareness device ever invented,” said Phil King, Boeing JHMCS program manager. “Today’s computer-savvy pilots are accustomed to this type of technology, so it’s a natural fit with their abilities.”

JHMCS originally was designed in the 1990s to assist pilots engaged in aerial combat. “With the onset of Operation Iraqi Freedom, the need for precision strikes with smart weapons against ground-based targets became evident,” King said. “We worked with our industry partners (Rockwell Collins, Elbit Systems and Vision Systems International) to add that capability to the JHMCS system. Demand for the system continues to be strong, because it has proven to be one of the most valuable tools available to our warfighters.”

In addition to the helmet and visor display unit, JHMCS includes a computer, head-tracking hardware and associated cables installed on the aircraft. The hardware is approximately 90 percent common across all platforms. Currently JHMCS is being installed on up to 500 Boeing F-15C/D, F/A-18 and Lockheed Martin F-16 fighter aircraft each year.

“JHMCS is one capability that the pilots absolutely love, and they are reluctant to fly without it now,” said Todd Depoy, U.S. Air Force JHMCS program manager. “Even though it was originally designed for air-to-air use, through deployments we have learned it provides a great surface capability to improve close air support and keep our pilots out of harm’s way.”

JHMCS was originally projected to be a \$500 million program with total deliveries of about 2,000 systems. To date, the program has delivered more than 2,500 units with nearly \$800 million in orders. Boeing is under contract for at least the next two years and is on the verge of securing business for an additional three years.

The JHMCS program is staffed by just 25 full-time employees and two managers, but the team uses its small size to its advantage. Members are empowered and encouraged to take on additional responsibilities and gain valuable program-level experience. In so doing, they are able to learn all aspects of the business.

“JHMCS is a microcosm of a larger program,” said Tim Conway, Electronics Unit equipment engineer. “Instead of large departments of people supporting logistics, engineering, program management, integration, finance, contracts, etc., our team fits into a single conference room. The small size allows us to participate in varied aspects of a project that might not be possible on larger programs.”

Timothy Bozarth, chief engineer, said variety is one of the rewards of working on the program. “We have visibility into all aspects of the business: technically, programmatically and contractually,” he said. “Working directly with suppliers to accomplish design changes or working with the warfighters to resolve issues that are uncovered in the field helps us to get a full sense of the impacts of our decisions.” ■

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