

JASSM - The Air Force's Next Generation Cruise Missile

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EGLIN AIR FORCE BASE, Fla. (AFMCNS) - Since the late 1970s the Department of Defense has tried and failed numerous times to give the warfighter an affordable standoff cruise missile capable of taking out the enemy's air defenses early on in a conflict.

Fast forward to 2006 and that warfighter need has finally been met by the Air Force's next generation cruise missile - the Joint Air-to-Surface Standoff Missile.

At 14 feet long and 2,250 pounds, JASSM is an autonomous, conventional munition with a standoff range of more than 200 nautical miles. It is designed to defeat heavily defended, high-priority enemy targets deep behind enemy lines.

JASSM can be released in virtually any type of weather and uses its inertial navigation and global positioning systems to find its intended target and then its infrared seeker for pinpoint accuracy just before impact. Once in the air, the stealthy cruise missile can reach high subsonic speeds at .85 mach. It is also equipped with an anti-jammer that keeps the enemy in its crosshairs regardless of their technology or capabilities.

One of the newest weapons in the Air Force's arsenal, JASSM is truly an incredible piece of technology. Almost as incredible as the weapon itself is the journey that got it here.

Warfighter's Operational Need

For years the warfighter has emphasized the need for an affordable standoff weapon they could use to attack high-priority targets from outside the enemy's air defenses. This weapon would give both fighter and bomber aircraft the ability to strike heavily defended and high-value targets in any weather and keep them out of harms way.

The last program office to try and provide this capability was the Tri-Service Standoff Attack Missile in 1986. But after eight years of development, the Secretary of Defense terminated the program because of problems with the weapon and escalating costs. However, the warfighter's need for the weapon still remained, so the Department of Defense went back to the drawing board.

"The United States desperately needed a first-day-of-the-war stealthy cruise missile that could go in and take out those threats that put our manned platforms at risk," said Gerry Freisthler, director of the Air Armament Center Engineering and Acquisition Excellence Directorate. "We needed something to go in and take on those double digit (Surface-to-Air Missiles) that may be able to put our aircraft and aircrews at risk, and that's how JASSM came about."

The newly christened JASSM program office was charged with not only making a high survivability standoff weapon capable of attacking various types of targets, but also one made with speed and affordability in the acquisition world. They partnered with DoD, industry, and the warfighter to streamline many processes that were often timely and cumbersome before and they emphasized affordability at every juncture.

"With JASSM the most important things were (to be) on cost and on schedule," said Mr. Freisther, who led the JASSM program from 2002 to 2004. "We gave the contractor a lot of flexibility with removal of (military) standards and (specifications) and from the beginning the program office had a very close relationship with Air Combat Command."

Together this combined team set the framework for the much needed weapon and JASSM started taking baby steps on its way to the warfighter.

Testing Challenges

Even though the JASSM program office had set a solid foundation for their weapon and knew what pitfalls to avoid, that didn't mean the road to handing the weapon to the warfighter would

be easy or without struggles.

The weapon began engineering and manufacturing development in 1997 and entered Low Rate Initial Production just four years later in 2001. Then the next important step for JASSM came in July 2004 when it reached Full Rate Production.

However, even as JASSM continued to hit milestones some challenges remained.

"Achieving demonstrated in-flight reliability turned out to be our biggest challenge in the transition from development to full rate production," said Colonel Jim Geurts, who manages the program as the Long Range Missile Systems Group commander. "To address these challenges, we pulled together the experts from across industry and the Department of Defense to review our plans and give us feedback to ensure we could achieve the type of reliability growth needed as we began fielding large numbers of assets in the field."

Their hard work paid off and the JASSM team went back to prove the weapon could deliver on its promise. During flight tests in 2005 the weapon scored nine successes in 11 tests, followed by two more successful flights already in 2006.

On the heels of those successes, the weapon finished the year strong reaching Initial Operational Capability on the B-52 and B-1. More than 350 JASSMs have been delivered and are in the hands of the warfighter and ready for combat use around the world if called upon.

"The JASSM weapon system continues to demonstrate high reliability in flight and ground testing," said Maj. Gen. Jack Catton, director of requirements for ACC. "More and more units are gaining the capability to effectively employ the weapon system."

Future Capabilities

While JASSM can already do some mouth-watering things, the LRMSG has plans to make it even more lethal.

The second phase of the program is to make an extended range version of the weapon. JASSM-ER will increase the standoff capability to more than 500 nautical miles. The weapon, which looks exactly the same as the original from the outside, has a new engine and can carry more fuel. It will first be integrated on the B-1B and will be ready for flight testing later this Spring.

"A JASSM-ER will have the same lethality and stealth as a JASSM, but it will deliver that knock-out punch from more than twice as far away," said Lt. Col. Stephen Davis, JASSM Block 2 Squadron commander. "In the simplest terms, this means some child's mom or dad won't have to fly their B-1 through enemy threats to strike many deeply placed targets."

But additional stand-off range isn't the only thing they are improving. The LRMSG is also adding a weapons data link that will enable key command and control elements to communicate with the weapon after it's already in flight.

"The data link will plug the weapon right into the warfighting network," said Michele Brazel, LRMSG deputy director. "They'll be able to track what each missile is doing in flight, retarget it in flight if need be, and then get a good indication of whether or not it destroyed its target."

JASSM is also scheduled to be one of the first weapons to be Universal Armament Interface compliant. UAI is a joint initiative that will allow the Air Force to incorporate new precision-guided munitions onto its aircraft without requiring major changes to each aircraft's software.

New development activity is also planned to enable JASSM to enhance its maritime engagement capability and become the air launched weapon of choice not only for highly defended fixed and relocatable land targets, but moving maritime targets as well.

And recently the Australian Defense Force selected JASSM to be its long range air-to-surface missile for their F/A-18 Hornet fleet.

As it stands right now the Air Force currently plans to buy 2,400 JASSMs and 2,500 JASSM-ERs with production extending through 2018.

But regardless of the numbers, the warfighter is very pleased to finally have the capability in its arsenal.