

Boeing CHAMP weapon passes test in sci-fi style (w/ Video)

October 27 2012, by Nancy Owano



This artist's rendering shows a CHAMP flying over a target

(Phys.org)—The Boeing "non-kinetic" missile passed its test flight earlier this month. The company reported that CHAMP, which stands for Counter-electronics High-powered Advanced Missile Project, has proven its ability to defeat electronic targets "with little or no collateral damage." Translation: CHAMP can zap an enemy's electronics and data systems via fired bursts of high-power microwaves structures with little to no harm to people or buildings. The test was carried out in the Western Utah desert. Team members from Boeing, the US Air Force, and Raytheon KTech, suppliers of the microwave source, watched the performance on a television monitor.

"We're not quite up to the place where the 'Star Trek' and 'Star Wars' movies are," said a test engineer, but this is definitely an advancement,

he added. The missile successfully defeated electronic targets. The purpose of the sixty-minute test was to confirm that CHAMP is capable of "degrading and defeating" electronics inside the test buildings. CHAMP is designed for selective high-frequency radio wave strikes against numerous targets during a single mission.

"CHAMP approached its first target and fired a burst of High Power Microwaves at a two-story building built on the test range," said the Boeing statement. "Inside rows of personal computers and electrical systems were turned on to gauge the effects of the powerful [radio waves](#). Seconds later the PC monitors went dark," which marked success. The television cameras that the team had set up to record the test also went off line. Seven targets were hit using the [test missile](#)'s microwaves.

Such tests indicate an interest in newer weapons and a newer type of battlefield. Keith Coleman, CHAMP program manager for Boeing Phantom Works, said, "In the near future, this technology may be used to render an enemy's electronic and data systems useless even before the first troops or aircraft arrive."

In a paper about high-power microwaves written for the Center for Strategy and Technology at Air War College, Maxwell Air Force Base, in 2000, changes were already recognized in a modern battlefield deploying different types of weapons. "Except for the standard rifle, gun, knife, or grenade, virtually all military equipment contains some electronics," said the report.

As military research labs have shown, high-power [microwave](#) technologies can upset and destroy the electronics within military and commercial systems. The paper said that "Several high-power microwave technologies have matured to the point where they are now ready for the transition from engineering and manufacturing development to deployment as operational weapons." The study

concluded that "high-power microwave technology is ready for the transition to active weapons in the U.S. military."

This month's test drives that home all the more. "Today we turned science fiction into science fact," Coleman said. CHAMP is a multiyear, joint capability technology demo that includes ground and flight tests.

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Citation: Boeing CHAMP weapon passes test in sci-fi style (w/ Video) (2012, October 27) retrieved 25 May 2024 from <https://phys.org/news/2012-10-boeing-champ-weapon-sci-fi-style.html>

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