



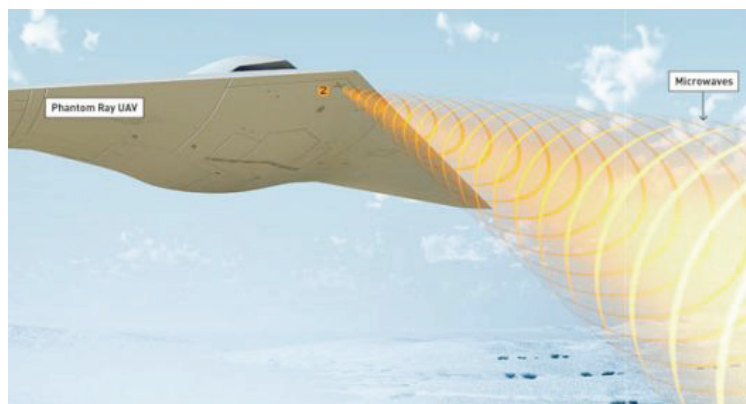
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Blackout Bomb: Air Force's High-Powered Microwave Weapons Fry Enemy Equipment

An experimental stealth weapon could blind enemy surveillance

By [Susannah F. Locke](#) Posted 07.06.2009 at 1:09 pm



Phantom Ray UAV Antenna: 2. The UAV's antenna emits gigawatt microwave pulses. *Graham Murdoch*

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In modern warfare, where missions are sometimes over in minutes, a blind enemy is a defeated enemy. The electromagnetic pulse from a nuclear weapon detonated miles aboveground would zap an army's surveillance equipment, but not without causing heavy collateral damage. Instead, a new Air Force tool will fry electronics using high-power microwaves emitted by an unmanned aerial vehicle (UAV).

The U.S. Air Force recently secured \$40 million for the project, and while program leader Robert Torres will confirm successful ground and in-flight tests of an earlier device, he's tight-lipped on future details. Edl Schamiloglu, a high-power microwave expert at the University of New Mexico, speculates that the weapon would focus microwaves on a target, where they would induce a power surge in unshielded wires, destroying circuits in satellite dishes, radars and anything else electronic. This would clear the way for troops or airstrikes and could even wipe out gear in hidden bunkers.

A UAV, such as Boeing's upcoming stealth Phantom Ray, will probably be the conveyance of choice, because it can fly into enemy territory without risking a pilot's life. This raises a challenge for powering the instrument, Schamiloglu says. Although a UAV's small engine could provide some power, it will take high-capacity batteries to produce the gigawatt microwave pulses. Torres will say that he expects a prototype to be ready for flight tests in 2012, during which his team will adjust the beam to ensure that it inflicts damage only on the target.

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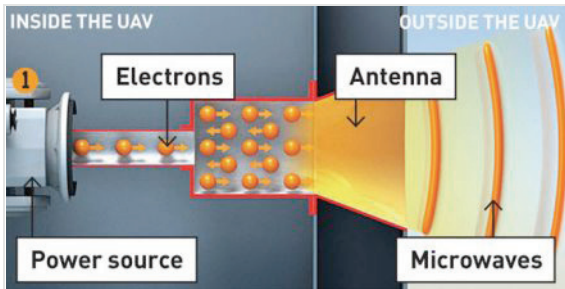


IMAGE 1 OF 3

Pulsating Microwaves

Graham Murdoch

1. The battery and engine generate 10 nanosecond-long, gigawatt bursts of power. Each pulse produces an electron beam, which then enters a wider pipe (an alternative design involves an electromagnetic structure) that causes the stream of electrons to scatter, slow down, and give off energy as microwaves.

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IMAGE 1 OF 3

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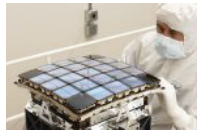
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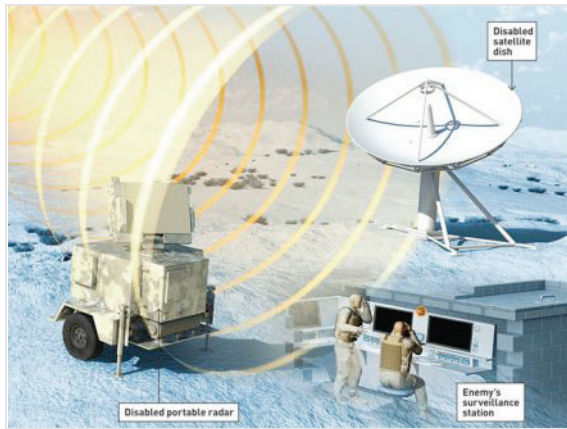


IMAGE 3 OF 3

Fried Electronics

Graham Murdoch

3. The microwaves' electric field induces a current surge in unshielded wires that fries electronics. The microwaves can even travel through pipes or ventilation ducts into bunkers.

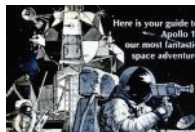
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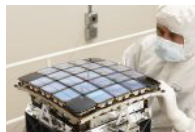
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