



Pentagon Unveils Plans for a New Crowd-Dispersal Weapon

By JAMES DAO

WASHINGTON, March 1 — The Pentagon today unveiled what some military officials hope will become the rubber bullet of the 21st century: a weapon that uses electromagnetic waves to disperse crowds without killing, maiming or, military officials say, even injuring anyone slightly.

Known in Pentagon patois as an "active denial system," the weapon is the fruit of 10 years of research and is intended to help American soldiers in the quasi-military roles they have increasingly been asked to play as peacekeepers or police in places like Kosovo and Ethiopia.

As envisioned by its Pentagon designers, the weapon would fire bursts of electromagnetic energy capable of causing burning sensations on the skin of people standing as far as 700 yards away — without actually burning them, officials said.

"It's not designed to burn," Col. George P. Fenton of the Marine Corps, director of the Department of Defense's Joint Nonlethal Weapons Program in Quantico, Va., said at a news conference today. "It's a heat-induced sensation."

Asked if the weapon was simply a militarized form of a microwave oven, Colonel Fenton said no. He said the new system fires waves that are shorter and at higher frequencies than microwaves. That means, he said, that while the waves could penetrate clothing, they would barely enter the skin, reaching a depth of only one sixty-fourth of an inch.

"It's safe, absolutely safe," Colonel Fenton said. "You walk out of the beam and the pain goes away. There are no lasting effects."

The weapon, which to date has cost taxpayers \$40 million, already has its skeptics. William M. Arkin, the senior military adviser to Human Rights Watch, described it as a "high-powered microwave antipersonnel weapon" that should be more carefully studied before it is used on crowds containing elderly people, children or pregnant women.

Mr. Arkin said past efforts by the

HOW IT WORKS

A Nonlethal Option For the Military

The Pentagon is in the early stages of developing a nonlethal weapon system intended to control crowds and protect troops.

THE BEAM The system shoots a beam of electromagnetic energy at the intended target that penetrates the skin no more than 1/64th of an inch. Though similar to a microwave in that it causes molecules to vibrate, the beam works at a much higher frequency on the electromagnetic spectrum.

THE EFFECT The electromagnetic waves cause the water molecules in the top layer of skin to vibrate, creating an intense burning sensation similar to touching a hot light bulb.

Source: Joint Nonlethal Weapons Program, Department of Defense

Pentagon to develop "nonlethal weapons" had sometimes proved disastrous. For instance, he said, lasers were widely considered the peacekeeping tool of the future until it was determined that they could blind people.

"If this is a more humane and effective military tool than existing nonlethal weapons, great," Mr. Arkin said. "But they are going to have to prove some things to us first."

Pentagon officials said scientists had been testing the weapon on animals and humans for more than three years without finding any evidence that it caused internal injuries, burns, cancer or eye damage.

In more than 6,500 tests on 72



Department of Defense

Computer-generated rendering of a prototype mounted on a Humvee.

THE INTENDED RESPONSE This burning sensation is intended to "influence motivational behavior," as a Marine colonel put it. In other words it forces a person to flee or otherwise avoid the source of the pain.

HEALTH EFFECTS The military has tested the beam on humans and animals and says it does not cause any lasting harm because of the low energy levels.

people, only one exposure went awry, the Pentagon officials said, when one person received a "nickle-size" burn on his back after a tester programmed the weapon incorrectly.

"It gave us information that helped us understand how it works," said Dr. Michael Murphy, one of the Pentagon scientists working on the weapon.

To show how the system would work, Colonel Fenton brought a miniature version of an electromagnetic "gun" to the news conference, encouraging reporters and other Pentagon officials to stick a finger under the invisible ray and feel the heat.

"I feel like a barker at a carnival," said Colonel Fenton, who put his own

Could the end be in sight for the rubber bullet, tear gas and the beanbag?

fingers under the ray repeatedly for television cameras, as he cajoled a balky reporter to try the weapon.

Just one second under the tiny ray created a burning sensation equal to 120 degrees, Pentagon officials said. The officials said that the weapon could be adjusted to heat the skin to temperatures of 130 degrees or higher.

The weapon is still in development and probably will not be ready for deployment by troops for at least five years, Colonel Fenton said.

In its current experimental form, the weapon looks like the average backyard satellite dish. The Pentagon envisions a version being mounted on the back of a Humvee, but officials said hand-held or aircraft-mounted versions are under consideration as well.

American troops now typically use tear gas, rubber bullets or beanbags fired from shotguns to disperse crowds. The electromagnetic weapon would be superior to those techniques, Colonel Fenton said, because it would have much longer range.

He said the weapon would have helped protect soldiers in Ethiopia, where angry crowds frequently clashed with American troops during a United Nations mission there in 1993.

Michael E. O'Hanlon, a military expert at the Brookings Institution, disagreed.

"Everything I know about this weapon suggests this would not have made one iota of difference there," he said. "This may be worthwhile, but we shouldn't delude ourselves into thinking it is the answer."

The New York Times Friday, March 2, 2001 PA 14