

Military researchers see non-lethal role for talking lasers

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Credit: ORNL

Say what? Laser plasma balls that can talk? The Pentagon? How, and for what? The answer is that instead of beaming a flashing light or shouting over a loudspeaker to keep people away from sensitive areas, new



technology is being developed that could allow troops to fire a laser that can form a "plasma ball" that talks to the potential intruders.

Say hello to The Laser Induced Plasma Effect program, part of the Joint Non-lethal Weapons Directorate program, aimed to find ways to deter and stun adversaries without killing them. Go over to the *Military Times* video, which is where Todd <u>South</u>, ground combat reporter, explains what this is all about.

Three sorts of methods at play here would be (1) giving out <u>voice</u> <u>commands</u> to warn people to stop (2) heating up a target's skin to very uncomfortable levels but without burning them, and (3) blasting confusing noises to disorient and deter.

In the video in *Military Times* we hear a voice message that sounds similar to what one would hear over a somewhat distant loudspeaker: STOP OR ELSE ... as instructions to go away, or else other means would be used to deter you.

"So, what they've done is basically create a <u>laser</u>," said South in the video, "that can shoot out into a certain distance, and they can pipe in <u>sound waves</u> through it, and actually make human-voice sounds in commands."

He said this becomes useful "around areas where we want the perimeters secure." So, he continued, you can shoot out this laser and talk to the people "rather than sending troops out there."

That same laser can be used to target the individual and create heat, like microscopic pin pricks. It is extremely uncomfortable, said South, and people move out of the way almost immediately.

Also, he said, the exact same laser is being used as a never-ending



flashbang grenade. It basically with the <u>power source</u> can create audible effects, to deter, confuse and disorient people, just like a flashbang grenade. South wrote that "the setup can also act as a reusable flashbang that can pulse 155 decibel frequencies near continuously, as compare to standard flashbang grenades that can make one, sometimes two loud blasts to disorient people."

This technology is not ready. It's still a few years away, said South.

They just finished testing to get the audio portion through the laser in a lab setting this year. "Part of that," he said, "involves tweaking algorithms to create <u>human speech</u> in the right wavelengths." They have been adjusting high and low frequencies to mimic human speech.

They expect to have a "field-able" version within the next five years. How do they reckon five? This is what South wrote in *Military Times*: "The next steps, said Dave Law, chief scientist with the directorate, is to push distances out of the short range of a laboratory setting to 100 meters, then to multiple kilometers. Law gave an optimistic timeline of about five years before the tech could be through readiness levels and passed on to troops."

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