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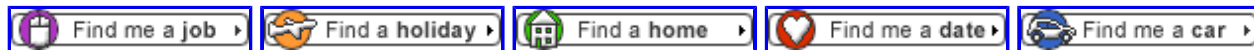
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Run away the ray-gun is coming : We test US army's new secret weapon

By MICHAEL HANLON - [More by this author »](#) Last updated at 23:21pm on 18th September 2007

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Modern face of warfare: The Silent Guardian

"Where do I put my finger? There ... OK? Nothing's happening ... is it on?"

"Yes, it's on. Move your finger a bit closer."

"Er ... ow! OW!" Not good. I try again. "OWWW!" I pull my hand away sharpish. My finger is throbbing, but seems undamaged.

I was told people can take it for a second, maximum. No way, not for a wimp like me.

I try it again. It is a bit like touching a red-hot wire, but there is no heat, only the sensation of heat. There is no burn mark or blister.

Its makers claim this infernal machine is the modern face of warfare. It has a nice, friendly sounding name, Silent Guardian.

I am told *not*

to call it a ray-gun, though that is precisely what it is (the term "pain gun" is maybe better, but I suppose they would like that even less).

And, to be fair, the machine is not designed to vaporise, shred, atomise, dismember or otherwise cause permanent harm.

Scroll down for more ...



Oww! Michael Hanlon tries the Raytheon ray-gun

But it is a horrible device nonetheless, and you are forced to wonder what the world has come to when human ingenuity is pressed into service to make a thing like this.

Silent Guardian is making waves in defence circles. Built by the U.S. firm Raytheon, it is part of its "Directed Energy Solutions" programme.

What it amounts to is a way of making people run away, very fast, without killing or even permanently harming them.

That is what the company says, anyway. The reality may turn out to be more horrific.

I tested a table-top demonstration model, but here's how it works in the field.

A square transmitter as big as a plasma TV screen is mounted on the back of a Jeep.

When turned on, it emits an invisible, focused beam of radiation - similar to the microwaves in a domestic cooker - that are tuned to a precise frequency to stimulate human nerve endings.

It can throw a wave of agony nearly half a mile.

Because the beam penetrates skin only to a depth of 1/64th of an inch, it cannot, says Raytheon, cause visible, permanent injury.

But anyone in the beam's path will feel, over their entire body, the agonising sensation I've just felt on my fingertip. The prospect doesn't bear thinking about.

"I have been in front of the full-sized system and, believe me, you just run. You don't have time to think about it - you just run," says George Svitak, a Raytheon executive.

Silent Guardian is supposed to be the 21st century equivalent of tear gas or water cannon - a way of getting crowds to disperse quickly and with minimum harm. Its potential is obvious.

"In Iraq, there was a situation when combatants had taken media as human shields. The battalion commander told me there was no way of separating combatants from non-combatants without lethal force," Mr Svitak tells me.

He says this weapon would have made it possible because everyone, friend or foe, would have run from it.

In tests, even the most hardened Marines flee after a few seconds of exposure. It just isn't possible to tough it out.

This machine has the ability to inflict limitless, unbearable pain.

What makes it OK, says Raytheon, is that the pain stops as soon as you are out of the beam or the machine is turned off.

But my right finger was tingling hours later - was that psychosomatic?

So what is the problem? All right, it hurts, but then so do tear gas and water cannon and they have been used by the world's police and military for decades.

Am I being squeamish?

One thing is certain: not just the Silent Guardian, but weapons such as the Taser, the electric stun-gun, are being rolled out by Britain's police forces as the new way of controlling people by using pain.

And, as the Raytheon chaps all insist, you always have the option to get out of the way (just as you have the option to comply with the police officer's demands and not get Tasered).

But there is a problem: mission creep. This is the Americanism which describes what happens when, over time, powers or techniques are used to ends not stated or even imagined when they were devised.

With the Taser, the rules in place in Britain say it must be used only as an alternative to the gun. But what happens in ten or 20 years if a new government chooses to amend these rules?

It is so easy to see the Taser being used routinely to control dissent and pacify - as, indeed, already happens in the U.S.

And the Silent Guardian? Raytheon's Mac Jeffery says it is being looked at only by the "North American military and its allies" and is not being sold to countries with questionable human rights records.

An MoD spokesman said Britain is not planning to buy this weapon.

In fact, it is easy to see the raygun being used not as an alternative to lethal force (when I can see that it is quite justified), but as an extra weapon in the battle against dissent.

Because it is, in essence, a simple machine, it is easy to see similar devices being pressed into service in places with extremely dubious reputations.

There are more questions: in tests, volunteers have been asked to remove spectacles and contact lenses before being microwaved. Does this imply these rays are not as harmless as Raytheon insists?

What happens when someone with a weak heart is zapped?

And, perhaps most worryingly, what if deployment of Silent Guardian causes mass panic, leaving some people unable to flee in the melee? Will they just be stuck there roasting?

Raytheon insists the system is set up to limit exposure, but presumably these safeguards can be over-ridden.

Silent Guardian and the Taser are just the first in a new wave of "non-lethal" weaponry being developed, mostly in the U.S.

These include not only microwave ray-guns, but the terrifying Pulsed Energy Projectile weapon. This uses a powerful laser which, when it hits someone up to 11/2 miles away, produces a "plasma" - a bubble of superhot gas - on the skin.

A report in New Scientist claimed the focus of research was to heighten the pain caused by this semi-classified weapon.

And a document released under the U.S. Freedom of Information Act talks of "optimal pulse parameters to evoke peak nociceptor activation" - i.e. cause the maximum agony possible, leaving no permanent damage.

Perhaps the most alarming prospect is that such machines would make efficient torture instruments.

They are quick, clean, cheap, easy to use and, most importantly, leave no marks. What would happen if they fell into the hands of unscrupulous nations where torture is not unknown?

The agony the Raytheon gun inflicts is probably equal to anything in a torture chamber - these waves are tuned to a frequency *exactly* designed to stimulate the pain nerves.

I couldn't hold my finger next to the device for more than a fraction of a second. I could make the pain stop, but what if my finger had been strapped to the machine?

Dr John Wood, a biologist at UCL and an expert in the way the brain perceives pain, is horrified by the new pain weapons.

"They are so obviously useful as torture instruments," he says.

"It is ethically dubious to say they are useful for crowd control when they will obviously be used by unscrupulous people for torture."

We use the word "medieval" as shorthand for brutality. The truth is that new technology makes racks look benign.

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Here's a sample of the latest comments published. You can click [view all](#) to read all comments that readers have sent in.

The applications for this sound very 1984. With all that footage on youtube of people being tasered, I really don't like the

way this could be used.

- **Dave, UK**

It could make open prisons very secure. That it will be used as an instrument of torture is in no doubt, now that it has been demonstrated the next version will be designed to penetrate to the heart and be a killing weapon.

- **John Sizeland, Eccles on sea, Norfolk, England**

What happens if I reflect or absorb the wave using lead or other materials?

- **William Kerr, Leatherhead, England**

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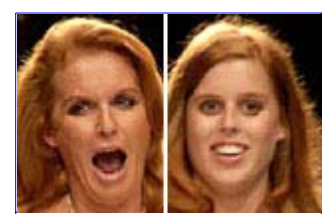
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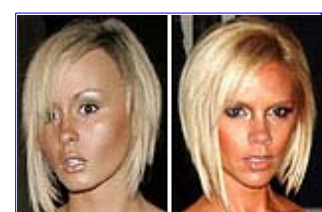
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