

The new advances in non-lethal weapons comprise both incremental improvements on current products and revolutionary developments towards the creation of new weapons. These new systems would not for the most part be suitable for use by groups other than state actors or very well-financed and organized non-state actors. They are technologically advanced, generally crew served, expensive and applicable only in unique situations. Most of the new developments are still in the R&D phase and have not been operationally deployed. According to the US Military "Joint Warfare DTOs for Military Operations in Urban Terrain (MOUT)":

"The Non-Lethal Weapons (NLW) Program will investigate and develop enhanced capabilities to deliver non-lethal products developed under the ongoing non-lethal weapons program. The main technology thrust of the NLW is to evaluate the ability to employ non-lethal weapons from standoff ranges in mid-intensity conflict and MOUT environments via unmanned aerial vehicles. Two delivery capabilities will be developed: a remotely activated payload door and a flare dispenser. The payload door system will be used to dispense irritant grenades and entanglements/barriers. Pyrotechnic irritant cartridges and acoustic whistles will be developed that can be remotely dispensed from a standard Navy flare dispenser. The program goal is to demonstrate the ability to clear civilians out of an area 75 x 30 m from a standoff distance measured in kilometers. The measure of success will be a circular area probable of 25 m from a distance of 25 km."<sup>86</sup>

A less benign description of potential developments can be found in several critiques of such systems. One typical description states:

"They range from the ludicrous to the truly diabolical: low frequency noise (or "infra sound") that can cause uncontrollable nausea and defecation; soporific drugs wafted towards enemy lines; highly caustic chemicals able to eat through metals; polymers that clog up jet intakes; electromagnetic energy that can disable enemy weapons; sticky foam that immobilizes all those it comes in contact with; nets fired from canisters to immobilize both people and vehicles; laser rifles and other beam weapons that can temporarily or permanently blind troops or interfere with optical sensors on enemy weapons."<sup>87</sup>

Another source states that "very low frequency electromagnetic radiation has been used to put test animals into a stupor or cause their brain cells to release histamines that would cause flu-like symptoms in a human."<sup>88</sup> Among the more conventional types of non-lethal weapons being developed for restraining or deterring unwanted activities are slickums and stickums to impede vehicle or foot traffic, movement-inhibiting foams and nets, and highly obnoxious

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<sup>86</sup> See: [http://www.fas.org/spp/military/docops/defense/97\\_datp/weapons/](http://www.fas.org/spp/military/docops/defense/97_datp/weapons/)

<sup>87</sup> See Kathy Edges, "Killing Them Softly: Bizarre New Weapons Systems from the Pentagon's Black Budget," *Peacetime* (June 1994).

<sup>88</sup> *U.S. News & World Report* (7 June 1997).