Abstract

NON-LETHAL WEAPONS: THE GENERATION AFTER NEXT

Non-lethal weapons technology and concepts have evolved rapidly over the past decade. That has been driven by geopolitical realities, technological advancement, and most importantly, military commanders demanding alternatives to lethal force. Now we are poised to make a tremendous leap forward. First there will be substantial improvements of existing weapons. Most of the research and development for these systems is underway. However, they will be followed by the "*generation after next systems."* It is the generation after next that will be both innovative and provide Star Trek-like capabilities. Based on new materials, the endemic biological revolution that is already occurring, millimeter precision guidance, nanotechnology, and information technology these systems will move beyond minimizing effects and be completely integrated systems. That means they will incorporate precise sensing and targeting, controlled effects, and measures of effectiveness/damage reporting mechanisms. The capabilities will focus on strategic objectives rather than peace support operations. They will require dramatic new thinking about transition from current basic science and produce duel use technologies that meet future requirements in both better living and weapons systems.

The "generation after next" non-lethal weapons systems offer both exciting promises for advanced capabilities as well as extraordinary challenges. These new technical capabilities to gather information, selectively degrade or incapacitate both individuals and infrastructure, and alter how conflict is prosecuted will encounter vehement opposition from ethicists, civil libertarians, legal conservatives, and those military officials who favor traditional methods of warfare.