

NATO Studies on Non-Lethal Weapons (NLWs): Effectiveness, Human Effects, and Future Technologies

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In 1999 the North Atlantic Treaty Organization (NATO) Conference of National Armaments Directors (CNAD) adopted a NATO policy on NLWs and, in 2000, the Defense Capabilities Initiative (DCI) issued a Non-Lethal Weapons Road Map for the introduction of NLWs into NATO. In support of these planning efforts, the NATO Research and Technology Organization (RTO) formed three Study/Technical Groups on NLWs. The Systems and Analysis Panel (SAS) formed SAS-035 on “Non-Lethal Weapons Effectiveness Assessment” and SAS-040 on a “Long-Term Scientific Study on Non-Lethal Weapons and Future Peace Enforcement Operations.” The Human Factors and Medicine Panel (HFM) formed HFM-073 on “The Human Effects of Non-Lethal Technologies.” The initial work of these groups has been nearly completed.

SAS-035 has proposed a basic mathematical methodology for assessing the effectiveness of non-lethal weapons in a specific scenario. Inputs to the methodology include the physical characteristics of the weapon and the environment in which it is used, the level of a weapon’s output that reaches a specific target, and the actual response of the target vis-a-vis the desired response and the military requirement. Effectiveness is calculated across seven dimensions, namely, mobility, communications, physical function, sensation and interpretation, group cohesion, motivation, and identification. The lack of adequate target response data was seen as a significant inhibitor to the implementation of the methodology

HFM-073 addressed the human effects of non-lethal technologies from the perspective of both the target (effectiveness and non-lethality) and the operator/bystander (fratricide, long-term health effects). The implications of NLWs on training and field medicine were reviewed. Special attention was directed to the issues involved in obtaining target response data of the type, quality, and quantity that would satisfy the methodology proposed by SAS-035.

SAS-040 held a multinational exercise to evaluate future technologies (out to the year 2020) that might be suited to address the whole spectrum of NATO peace support operations. Five promising technologies were identified: RF devices, anti-traction approaches, rapid barriers, stun devices, and nets.

Both SAS-040 and SAS-35 created glossaries for terms relating to NLWs and proposed frameworks for developing a database for NLWs. Both HFM-073 and SAS-040 reviewed the legal/political issues that might constrain the development of NLWs.

NATO’s activities in defense and crisis management would likely benefit from the availability of NLWs and NATO is taking steps to prepare for its use of NLWs. Analyses and decisions made by NATO will no doubt contribute to the international discussion on the policy and technical aspects of NLW development, risk assessment, and use.

Keywords: NATO, NLW, human effects, SAS, HFM