Joint Non-Lethal Weapons Program
Human Effects Modeling Analysis Program Fact Sheet

http://jnlwp.defense.gov

Non-lethal weapons provide our operating forces with escalation-of-force options that minimize casualties and collateral damage.

What is it?

Non-lethal weapons are designed and primarily employed to incapacitate personnel or materiel immediately, minimizing fatalities, significant injuries to personnel, and undesired collateral damage. Part of the development process for any new non-lethal weapon is characterization of the human effects, both from the standpoint of the effectiveness of the system as well as the risks. The Department of Defense guidance for this process is found in DoD Instruction 3200.19, *Non-Lethal Weapons (NLW) Human Effects Characterization*, which is available at http://www.dtic.mil/whs/directives/corres/pdf/320019p.pdf .

To support this characterization process, the Joint Non-Lethal Weapons Directorate Human Effects Office, through the Human Effects Modeling Analysis Program (HEMAP), manages the development of models and test targets that provide predictions for a range of human effects. These tools permit a standardized approach for non-lethal weapon human effects assessments, which is essential for system development, assessment, operational testing, training and operation.

The HEMAP includes the capability to assess injury potential from blunt trauma, thermal injury, blasts and acoustic stimuli, as well as the visual effects of optical stimuli. Data from the modeling assessments allow developers to compare the benefits against the risks of a non-lethal weapon in specific operational scenarios.

How does it work?

Through experimentation, researchers generate data on the amount of non-lethal stimulus necessary to be effective yet minimize the risk of significant injury. This includes development of dose-response curves. Researchers then use this information to develop or refine non-lethal human effects models. Researchers may also validate and verify the HEMAP models to ensure the components are generating accurate predictions.

Human Effects Testing

HEMAP tools may be used to support various joint and Service-unique non-lethal weapons programs by enabling comprehensive human effects assessments of a broad range of stimuli.

Program Evolution

Future HEMAP plans include the expansion of blunt impact, auditory, and thermal injury models, as well as the development of new predictive models for human electromuscular incapacitation and behavioral response. Another future HEMAP focus area is the design and development of human surrogate targets that can help collect relevant human effects data and assist in test and evaluation activities for non-lethal weapons development efforts.