Non Lethal Weapons

"We need to give our young men and women, who are out on the frontlines, to give them a full spectrum of tools. One end of the spectrum are things like non-lethal weapons."

From 2011 to 2016, he multinational system analysis and studies research task group 94 performed a study, to support development and experimentation of NATO and national non-lethal weapons, concepts of operations, employment and use.

"NATO Science and Technology organization is really people. Scientists, mathematicians, engineers, technical folks, analysts, from across the spectrum of technical disciplines, application areas, operational capability. We get together to address specific technical issues. They're organized under set of panels in a group, one in particular systems analysis and study and one panel work his specific effort for non-lethal weapons technology."

"The origin of the project is twofold. You know, first there was a calm ISAF study, that indicated, that with the use of non-lethal weapons, that we enhance our ability to hail and warn potential targets out there by 90%. The study also stemmed from the fact, that there was a recognition, with the NATO headquarters and Allied nations, that there is a lack of integration of these concepts, into their national concept of operations, concept of employment and concept of use."

NATO's policy defines non-lethal weapons as weapons which are explicitly designed and developed to incapacitate or repel personnel, with a low probability of fatality or permanent injury. Or to disable equipment with minimal undesired damage or impact on the environment.

"With the diversity of the study, part of the challenge, also had to do with the range of non-lethal technologies that are available. There are acoustic technologies, such as a long-range acoustic hailing device or warning munitions, that you can project out to hundreds of meters, to provide enhanced warning. Other technologies included dazzling lasers. A millimeter wave technology to create an intense heating sensation, that makes it intolerable for a person to stay in position, if you need to move them out of the way, or if you need to isolate the hostage-taker from the hostages, in order to get a clear shot. There are other directed energy systems that can be used for vehicle or vessel stopping. If there's an electronic susceptibility of a small vessel, or a car approaching a checkpoint - an entry control point."

- "We started with a significant study, looking at the top-down threats in a future security environment. And that looked at a range of issues across a number of factors, including environment, demographics, terrorism, culture, weather, and that generated a selection of scenarios, which guided the rest of the study. The study continued with an analysis of the vignettes, into which the military could operate a range of non-lethal weapons."

The seed AG national military utility assessments n Text 15 M and n Text 16 L each compared actions and outcomes, for the baseline traditional table of equipment versus with non-lethal weapons also available.

- "Process 94 we organized the concert development and assessment game, or also for C deck. And it's a game in which we put operation specialists, together with technical subject matter experts, and have

them discuss, how these concepts could be used in certain scenarios, as we just said for them. For instance the scenario wise isn't strolling and then we gave them concepts, that are non-lethal. I think the game showed us, that in situations that we played, non-lethal weapons can really have a contribution reducing risk, reducing risk of personnel, reducing risk to collateral damage, those kind of things."

NATO's defense against terrorism program held exercises in 2015 and 2016, evaluating non-lethal weapons in both the maritime and land domains. And SAS 94 provided assessment and analysis support.

"Primarily we had to goals: the first one is to assess the effectiveness and the safety of non-lethal capability. The second goal of this military utility assessment, is to build trust for the operator to actually want to use these logical capabilities and to actually make a deliberate choice, in the scenarios that we have planned, to use them in a real-life situations."

-"The SAS 94 group has done the nation's a real service. In terms of providing us new perspectives, for how to use these technologies, new context concepts.For them identified the impacts that they may have in terms of:

'Okay, so if I use this, what's the effect that I'm likely to get from from using math? What impact will it have? How do i best use it? How do i best employ it? What are my tactics for using it? Or what conditions it?' And then tools for actually analyzing those impacts, in a way to help us guide future operations."

This work is already benefiting NATO. Allied command transformation is using the task groups results in developing a policy and concept for protection of civilians. The NATO Army armaments group will benefit from options identified by SAS 94 and that NLC, for ways to counter small unmanned aerial systems with non-lethal effectors. SAS 94s work also directly benefits nations. For example by providing a foundation, for new non-lethal weapons multi-service tactics techniques and procedures guide.