**Operation Simulation – Supports Decision Making for Build-up & Deployment of Military Force**

Gabi Siboni

The Art of Senior Military Command calls for the Build-up of two basic skills: The skill of Planning the use of military force, alongside the ability to prepare one’s military force to deal with existing and emerging threats. These skills are of critical importance as the price of any mistakes is enormous and will reflect upon the inability to achieve operational goals in combat. Furthermore, these mistakes will come at a cost both of human life and the burnout of the fighting forces. This is especially evident in Force Development, as it calls for comprehensive planning ahead of time and requires us to make certain assumptions regarding future threats. These Assumptions can be comparable to gambling, the only difference being the price paid for error is significantly larger – falsely leading the Build-up of an entire military force.

Over the past years, we have relied upon the in-depth analysis and thinking of commanders and decision-makers to examine operational alternatives and other alternatives relating force Build-up

by means of staff work. Today, these remain the main tool for commanders, and therefore the importance of Staff Work and the personal analysis of decision makers remain vital as ever.

As technology and computing abilities advance forward, the ability to analyze large amounts of information at various speeds have allowed us to examine new opportunities to utilize these technologies to assist decision-makers in the military context of force Build-up & Deployment. For this purpose, the Israel Defense Forces has developed a methodology for examining different core questions relating Force Build-up & Deployment. This is through the use of analytical tools that allow for operational simulation of the different battlefields. The Methodology enables commanders to cultivate pin-pointed questions in the context of various alternatives in OPLANs as well as allows for the examination of alternatives in force development. This Methodology is based on several principles. The first relates to the understanding that as of today, and likely for the foreseeable future, it will not be possible to simulate the decision-making process of commanders in aspects relating human emotion or one’s mental state. Considering this, even the most accurate simulations will have difficulty replicating the realities of what would occur on the field. Therefore, simulators shall attempt to neutralize this component as much as possible. This principle led to the decision to rely on comparative simulation. With this approach, one can compare several scenarios and examine sources of change and their intensity among every scenario.

The second principle relates to the determination of the indices that enable examination of the simulation results. There are three main indicators that were determined in the simulation process:

1) The Burnout of Enemy Forces in Combat - The burnout is measured by the extent of the casualties, the various levels of severity, the extent of damage to platforms (rocket, ships, aircraft, etc.), and finally the scope of damage to the infrastructure and structures.

2) The Extent of Damage to our Forces - with identical indices to those of enemy forces.

3) The End-State Operational Picture – Identifying Locations of both our forces and enemy forces. Thereafter, assessing the strategic value of these locations for the continuation of fighting, all while considering the ability of both forces for an ongoing campaign.

The third principle concerns human involvement in the simulation process. The greater the role of human factor in the decision-making and the deployment of forces during the simulation, the more it affects the ability to perform accurate comparative simulations. This is since it will not be possible to accurately repeat the human factor in several simulation runs. Considering this, the IDF decided to rely on a simulation system that enables the absorption of OPLANs of our forces and the enemy forces, without any human intervention.

The methodology developed by the Israel Defense Forces enables the feeding of various forces, including enemy forces, while determining their operating rules. All, while taking into consideration the combat doctrine and the operating and injury characteristics of the weaponry used. Additionally, the system simulates the space of land, sea and air operations using advanced field data. This allows for the examinations of a variety of questions relating Force Deployment and Force Build-up.

Examples of this include –

1) The examination of two alternatives OPLANs.

2) The examination of an OPLAN in light of the different responses the enemy force may have.

3) The examination of different combinations of forces between two OPLANs.

In the context of force buildup, the Operation Simulation enables the Israel Defense Forces to examine effects of combining means of warfare, old and new on the overall result of future conflicts. Furthermore, the simulation enables the examination of Force Build-up alternatives (ground fire versus air fire or naval fire), and so forth.

The IDF has recently decided to form a community of knowledge in the area of Operation Simulation, to enable joint learning, knowledge development and joint simulations. On topic, the Israel Defense Forces is expected to hold its first International Military Operation Simulation Summit in November 2019. During the Conference we intend on showcasing the IDF’s knowledge in the fields as well as present future trends. We look forward to seeing you there and look forward to future cooperation.

Prof. Col. (res.) Gaby Siboni is the Chief Methodologist of the IDF's Concepts Laboratory.